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Department of Defence

ASDEFCON (Strategic Materiel)

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Statement of Work Tailoring Guide

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Authority

This *Guide* does not create procurement policy. This *Guide* refers to mandatory procurement policies contained in either the *Defence Procurement Policy Manual* or *Departmental Procurement Policy Instructions*, which are applicable to the *ASDEFCON (Strategic Materiel)* templates. Any mandatory procurement guidance referred to in this *Guide* is sourced from appropriate legislation and mandatory Commonwealth and Defence policy.

Note to Defence Staff and External Agencies

Defence staff and external agencies intending to use the associated Australian Standard for Defence Contracting (ASDEFCON) Statement of Work (SOW) templates will need to tailor the templates to their specific procurement requirements, and should seek appropriate professional guidance as required.

Disclaimer

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This publication should be attributed as the '*ASDEFCON (Strategic Materiel) SOW Tailoring Guide*'.

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The terms under which the Coat of Arms can be used are detailed on the It's an Honour website[3].

Feedback

All feedback on this publiocation and suggestions for improvement should be sent to:

ASDEFCONSOW.Support@defence.gov.au

Amendment Record

Version	Release Date	Description of Amendments
V1.0	2003	Initial Release
V2.4	January 2016	Update for template version 2.4, November 2015
V3.0	October 2016	Update for template version 3.0, October 2016
V3.1	May 2018	Update for template version 3.1, April 2018
V4.0	July 2019	Update for template version 4.0, July 2019

[1] https://creativecommons.org/licenses/by/4.0/deed.ast
[2] https://creativecommons.org/licenses/by/4.0/legalcode
[3] http://www.itsanhonour.gov.au/coat-arms/index.cfm

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USING THE TEMPLATE AND SOW TAILORING GUIDE

Scope of this Tailoring Guide

The *ASDEFCON (Strategic Materiel)* template is intended for the procurement of Materiel Systems, as Supplies, through large-scale design, development and integration projects, including those involving 'system-of-systems' integration.

The purpose of this SOW Tailoring Guide is to provide drafters with guidance for selecting optional components (eg, clauses and annexes) and for tailoring the template to individual program needs.

The scope of this SOW Tailoring Guide covers the body and annexes of the SOW and provides some guidance on the use of related elements of the template (eg, Data Item Descriptions). Drafters should also refer to the 'note to drafters' embedded within the template. The SOW template and this SOW Tailoring Guide should be read and used together.

Further assistance can be obtained from CASG Commercial Policy and Practice Directorate help desks:

for technical (eg, SOW) aspects of the template: *ASDEFCONSOW.Support@defence.gov.au*

for commercial (eg, COC) aspects of the template: *Procurement.ASDEFCON@defence.gov.au*

Definitions, Acronyms and Abbreviations

Capitalised terms, acronyms and abbreviations used herein have the meanings given in the Glossary at Attachment M to the *ASDEFCON (Strategic Materiel)* draft conditions of contract (COC).

The table below lists those acronyms and abbreviations that are frequently used in this SOW Tailoring Guide that are in addition to those listed in the Glossary.

Abbreviation	Description
AAP	Australian Air Publication
ACD	Allocated Configuration Documentation
ACMA	Australian Communications and Media Authority
ADFP	Australian Defence Force Publication
ADO	Australian Defence Organisation
ANP	Australian Navy Publication
AT&E	Acceptance Test and Evaluation
ATP	Acceptance Test Plan
ATProc	Acceptance Test Procedure
CAID	Clear Accountability In Design
CASG	Capability Acquisition and Sustainment Group
CDD	Capability Definition Documents
CIOG	Chief Information Officer Group
COE	Centre of Expertise
COT	Conditions of Tender
CSAR	Configuration Status Accounting Report
CSEB	CASG Chief Systems Engineer Branch
CSR	Contract Status Report
DASA	Defence Aviation Safety Authority
DASR	Defence Aviation Safety Regulations
DCERT	Design Certificate
DEFLOGMAN	Defence Logistics Manual
DID	Data Item Description

Abbreviation	Description
DMH	Defence Materiel Handbook
DMI	Defence Materiel Instruction
DMM	Defence Materiel Manual
DMS	Data Management System
DMSP	Defence Materiel Standard Procedure
DRSM	Defence Radiation Safety Manual
DSO	Defence Spectrum Office
DSTG	Defence Science and Technology Group
DTR-A	Director Technical Regulation - Army
E&IG	Estate and Infrastructure Group
EIA	Electronics Industries Association
EMC	Electro-Magnetic Compatibility
ESCM	Electronic Supply Chain Manual
EVM	Earned Value Management
FCD	Functional Configuration Documentation
HGCE	High Grade Cryptographic Equipment
IDD	Interface Design Documents
IPSC	Information Processing Standards for Computers
IV&V	Independent Verification & Validation
MSR	Mandated System Review
NMSwAA	Navy Materiel Seaworthiness Assurance Agency
OPP	Open Plan Professional
PBL	Product Baseline

Abbreviation	Description
PCD	Product Configuration Documentation
PM	Project Management
RAM	Reliability Availability and Maintainability
RF	Radio Frequency
SDD	Software Design Description
SICP	Sovereign Industrial Capability Priority
SIP	Site Installation Plan
SPO	Systems Program Office

Abbreviation	Description
STANAG	NATO Standardisation Agreement
SW	Software
TDR	Tender Data Requirement
TEMP	Test and Evaluation Master Plan
TRAMM-L	Technical Regulation of ADF Materiel Manual - Land
WHS	Work Health and Safety

The table below lists those definitions used in this Tailoring Guide that are in addition to the Glossary.

Term	Definition	Source
Capability Manager	A Capability Manager is accountable to raise, train and sustain capabilities as directed by the Secretary and the Chief of the Defence Force. The Capability Managers are: The Vice Chief of the Defence Force – Joint Capability; Deputy Secretary Strategic Policy & Intelligence – Strategic Intelligence and Cyber Programs and Geospatial and Information and Services; The Chief of Navy – Maritime capability; The Chief of Army – Land capability; and The Chief of Air Force – Aerospace capability.	Interim Capability Life Cycle Manual (ICLCM)
Commercial Off-The-Shelf	Systems, hardware or software that already exists, is in service with one or more customers for an equivalent purpose and requires no, or minimal change.	
Contract (Acquisition)	Has the meaning of Contract in the Glossary at Attachment M.	Glossary
Contract (Support)	As defined in the Glossary, used to distinguish the support contract from the acquisition contract when both are being discussed.	Glossary
Equipment Certification	The end result of a process which formally examines and documents compliance of a product, against predefined standards, to the satisfaction of the certificating authority.	DI(G)OPS 02-2
Globally Harmonized System	The Globally Harmonised System of Classification and Labelling of Chemicals (GHS) is a single internationally agreed system of chemical classification and hazard communication through Labelling and Safety Data Sheets (SDS).	SafeWork Australia Website
Interface Control Documents	Drawings or other documentation which depicts physical and functional interfaces of related or co-functioning items.	JP2089
Military Off-The-Shelf	Systems, hardware or software that already exists and have been developed and produced to military standards and specifications, are in service with one or more other customers for an equivalent purpose and requires no, or minimal change.	
Stock Item Owner	Is a MILIS field code for the responsible person for that item. There are various names for that responsibility listed in the ESCM under the term: Defence Logistics Management.	ESCM and MILIS
Support Concept	Describes a Support System, including its goals, functions, organisations, processes and resources. A Support Concept may describe a perceived future Support System, or it may provide the big-picture view of an existing Support System.	DMM (LOG) 04-0-001
Supportability Analysis	The selective application of analytical techniques to realise and sustain systems and equipment that achieve Supportability objectives	ADDP 4.1
Systems Approach to Defence Learning	Link: http://drnet/JCG/ADC/LCD/SADL/Pages/SADL%20Home.aspx	
Testability	A design characteristic which allows the status (operable, inoperable) of an item to be determined and the isolation of faults within the item to be performed in a timely manner.	RAMMAN

Referenced Documents

The table below lists those referenced documents used in this SOW Tailoring Guide.

Reference	Description
	ASDEFCON (Complex Materiel) Volume 2 template and SOW Tailoring Guide
	ASDEFCON Contract Template Selection and Tailoring Guide
	ASDEFCON (Support) template and SOW Tailoring Guide
	ADO LSA Manual
	ADO RAM Manual
	Australian Code for the Transport of Dangerous Goods by Road and Rail, Seventh Revised Edition (National Transport Commission, 2011)
	Australian Industry Capability Better Practice Guide
Functional Handbook (ENG) 12-3-003	Capability Definition Documents Guide
DMI (ENG) 12-2-002	Configuration Management
MIL-STD-973	Configuration Management
DMH (ENG) 12-2-002	Configuration Management Handbook
DMSP (ENG) 12-2-009	Configuration Status Accounting
	Cost and Schedule Estimation Manual v1.0
DI(G) OPS 02-02	Defence Aviation Safety Program
AAP 8000.011	Defence Aviation Safety Regulations (DASR)
	Defence Learning Manual
DEFLOGMAN	Defence Logistics Manual
	Defence Intellectual Property Policy
DI(G) LOG 4-1-003	Defence Inventory and Assets Manual
CASG Handbook (E&T) 12-0-001	Defence Materiel Engineering and Maintenance Handbook
DEFLOGMAN Part 2 Volume 10 Chapter 16	Defence Policy on Life Cycle Costing Analysis
DRSM	Defence Radiation Safety Manual
	Defence Security Principles Framework (DSPF)
DI(G) OPS 43-1	Defence Test and Evaluation Policy
SafetyMan	Defence Safety Manual
DMSP (ENG) 12-3-005	Developing Function and Performance Specifications
DMH (PROJ) 11-0-004	Earned Value Data Analysis Guide
DMI (PROJ) 11-0-006	Earned Value Management in Projects
DMH (PROJ) 11-0-005	Earned Value System Review Handbook
ESCM	Electronic Supply Chain Manual
DEF(AUST)5085C	Engineering Design Data for Defence Materiel
	Environment Protection and Biodiversity Conservation Act 1999 (Cth)
	Globally Harmonized System of Classification and Labelling of Chemicals (GHS), Third Revised Edition (United Nations, 2009)
DMH (PROJ) 11-0-003	Guide to Earned Value Payments
	Hazardous Waste (Regulation of Exports and Imports) Act 1989 (Cth)
DI(G) CIS 6-2-002	High Grade Cryptographic Equipment Provision
ISBN 9780642297327	Human Systems Integration is worth the money and effort!, Burgess-Limerick, Robin
DMH (PROJ) 11-0-002	Integrated Baseline Review Handbook
DMSP (ENG) 12-5-004	Standard Procedure for Interface Management and Control
DMH (ENG) 12-5-002	Interface Management Guide
DEF(AUST)5691	Logistic Support Analysis

Reference	Description
DEF(AUST)5692	Logistic Support Analysis Record Requirements for the Australian Defence Organisation
DI(G) CIS 6-6-001	Management of the Defence Use of the Radiofrequency Spectrum
DMM (LOG) 04-0-001	Materiel Logistics Manual Volume 1
DMH (ENG) 12-2-001	Materiel System Review Guide
CASG Policy (ENG) 12-8-001	Materiel System Safety
DMSP (ENG) 12-8-043	Materiel Systems Environmental Management
DMH (ENG) 12-5-001	Materiel Verification and Validation Guide
EIA-649	National Consensus Standard for Configuration Management
ANP3411-0101	Naval Materiel Assurance Publication
	Ozone Protection and Synthetic Greenhouse Gas Management Act 1989 (Cth)
DEF(AUST)5629B	Production of Military Technical Manuals
CASG Manual (PM) 002	CASG Project Management Manual
AS 4817-2006	Project performance measurement using Earned Value, including the Defence Supplement
DMM (PROJ) 11-0-002	Project Risk Management Manual
AS/NZS ISO 9001:2015	Quality Management Systems – Requirements
AS/NZS ISO 9000:2006	Quality Management Systems – Fundamentals and Vocabulary
ADFP 6.0.4	Radiofrequency Spectrum Management
Functional Handbook (ENG) 12-3-002	Requirements Analysis Guide
Functional Policy (ENG) 12-3-001	Requirements Engineering
Functional Handbook (ENG) 12-3-001	Requirements Management Guide
AS/NZS ISO 31000:2009	Risk Management – Principles and Guidelines
DMI (ENG) 12-5-002	Policy on System Interface Management
DMH (ENG) 12-2-003	Technical Data Management Handbook
	Technical Regulation of ADF Materiel Manual - Land (TRAMM-L)
EIA-632	Process for Engineering a System
DMI (ENG) 12-5-001	Verification and Validation (V&V) Policy
DEF(AUST)5664A	Work Breakdown Structure for Defence Materiel Projects
	Work Health and Safety Act 2011 (Cth)
	Work Health and Safety Regulations 2011 (Cth)

Application of ASDEFCON (Strategic Materiel)

The *ASDEFCON (Strategic Materiel)* template is applicable to large-scale design, development and integration projects. These projects typically involve the acquisition of major systems (eg, platforms, vehicles, or complex electronic systems) once initial analysis has determined that no off-the-shelf solutions exist or are suitable, or major modernisation programs for existing systems (eg, mid-life upgrade) are not cost-effective. The technical complexity of these programs involves high to very high risk, may incorporate evolving technology into the design, be software-intensive, and require complex systems integration or 'system-of-systems' integration. In a typical project, a prime contractor would combine modern communications, combat systems and sensors into a platform with components sourced from many suppliers, and a large Defence project team would be required to maintain visibility across the full scope of contractor activity.

ASDEFCON (Strategic Materiel) includes governance and assurance mechanisms applicable to the high levels of technical risk in complex design and development programs, including in relation to both project management and technical disciplines. Systems Engineering (SE) and Integrated Logistic Support (ILS) programs have a 'do everything' approach, meaning that these disciplines are applied "in

full" to the design and development of the new Materiel System (ie, Mission Systems and the Support System) over three or more years before the start of production. *ASDEFCON (Strategic Materiel)* applies only to more complex major capital equipment developmental projects and requires considerable project office and/or external support resources.

The *ASDEFCON (Strategic Materiel)* template structure is illustrated at Appendix 1 to this Tailoring Guide, including the Attachments, Annexes and the DIDs used for defining data items.

The *ASDEFCON (Complex Materiel) Volume 2* template is applicable to medium risk design, development and integration projects. That template can be scaled up if the SM template is too onerous for the proposed contract. Refer to the *Contract Template Selection and Tailoring Guide* for further template selection guidance.

ASDEFCON (Strategic Materiel) tailored technical workshops can be arranged for a specific project or group of projects. For details of these workshops contact ASDEFCONSOW.Support@defence.gov.au

Providing Advice to Tenderers

Drafters should provide tenderers with sufficient information that will allow them to submit viable and competitive bids. Insufficient information may result in poor understanding of the scope of work, increasing both risk and tendered prices.

By facilitating the definition of the scope of work, ASDEFCON templates aim to facilitate compliance with Commonwealth Procurement Rules (CPRs) and for procurements to be based on value for money. **Inadequate definition of scope is an inadequate definition of the required value, and results in inaccurate tendered costs.** This can hinder subsequent value for money evaluations.

Drafters should describe the objectives of the proposed Contract and other information that will give tenderers a comprehensive understanding of the Supplies required and their interfaces to, and interactions with, other systems. Drafters should describe inter-relationships between the proposed Contract, existing support arrangements and future support arrangements. This information is important to tenderers when defining work scope and cost.

The Contract should be consistent with a Project Execution Strategy (PES) or Higher Deelgate Submissioon (HDS) as applicable, and the related Capability Definition Documents. If there are other related acquisition projects and support arrangements, the tenderers will likely need to understand the interface boundaries with them.

About the Conditions of Tender

The conditions of tender (COT), including Tender Data Requirements (TDRs), contain the commercial and technical requirements to be addressed by tenderers when submitting their tender.

Some TDRs seek information about the tenderers ability to provide the Supplies, if they became the Contractor. Other TDRs are tailored to reflect the scope of the SOW, define strategies for work under the Contract, and use the list of Supplies and work to structure the draft price and payment schedule.

In general, the SOW is developed before the TDRs, so that the TDRs can be tailored to reflect the requirements of the completed SOW.

About the Conditions of Contract

The conditions of contract (COC) contain the legal and commercial provisions for the Contract, such as compliance with laws and Defence and government policies, and defining the insurance, warranty, payment and other obligations relating to both parties.

When developing the SOW, drafters need to be aware of the numerous COC clauses that are related to, and often need to be tailored consistently with, the SOW. Such matters include Defence Security, which has both legal compliance and work aspects. The 'related clauses' identified against each SOW clause in this Tailoring Guide indicate the most relevant COC clauses.

About the SOW

The SOW is that part of the Contract that defines the scope of work that the Contractor is to undertake to provide the Supplies. Under *ASDEFCON (Strategic Materiel)* 'work' is defined by:

a. the clauses that form the main body of the SOW;

b. the Annexes to the SOW including the specifications of the Supplies (ie, specifications do not describe work but they define scope by the outputs to be produced from that work); and

c. the Approved[4] plans required by the SOW.

These documents also refer to recognised standards, technical manuals and quality management systems (often the case for plans) to define work processes and low-level work procedures.

Much of the required work is determined by the required Supplies. To achieve this, SOW Annex A is to include the Function and Performance Specification (FPS) for the Supplies, and Annex B is to include the Operational Concept Document (OCD), which describes how the Supplies will be employed.

Defining and managing work in accordance with plans accords to an ASDEFCON guiding principle of allowing the Contractor to apply industry standards and processes that best suit the Contract. However, in other cases it may be necessary to be prescriptive (eg, processes defined by a regulatory authority) but drafters should confirm that these are mandatory before including them in the SOW.

As an example of using plans to define work, clause 3.2.2 requires the Contractor to develop, deliver and update a Project Management Plan (PMP). The PMP needs to be developed in accordance with DID-PM-MGT-PMP to detail the Contractor's proposed processes. Once the PMP is Approved by the Commonwealth Representative, the Contractor is required to manage the work in accordance with the Approved PMP. Thus some work is defined by the Approved PMP rather than being detailed in the SOW.

According to ASDEFCON guiding principles, the full scope of work to be performed by the Contractor should be captured within the SOW (including the work defined in Approved plans). For example, security compliance obligations are contained in the COC; however, the SOW contains the associated work effort. This provides the Commonwealth with visibility of these costs rather than them being hidden in overheads. However, many COC obligations have no direct correlation with work, such as providing evidence of insurance to the Commonwealth, and are therefore not included in the SOW.

As good practice, each requirement in the SOW should be specified by its own clause, or subclause, for clarity and ease of costing (ie, one function per clause can be listed in the Price and Delivery Schedule). The draft SOW defines Contract work and is used by tenderers as the basis for developing their tender response, and their price. Hence, a clear definition of scope is paramount.

About Data Item Descriptions

Role and Scope

DIDs are specifications for the data items. Data items include management plans, reports, schedules, forms, items of Technical Data and data exchange requirements (eg, for configuration management data). Drafters should be aware that the need for some data items, particularly management plans and reports, varies with the scope of work and these should be selected accordingly.

Data items are requested from the SOW, with additional management information contained in the Contract Data Requirements List (CDRL) at Annex C. DIDs should not duplicate the information in the SOW or CDRL and the SOW and CDRL should not duplicate the data item specification information in the DIDs; however, the documents work together. For example, a clause in a DID specifying a plan will state "**The […plan…] shall describe** the Contractor's process for …", while an SOW clause would then state "**The Contractor shall perform the** […process…] in accordance with the Approved […plan…]".

Scheduling of Data Items

An important consideration when drafting is the delivery schedule for each data item. Plans are usually required before related work commences, and reports will need to be delivered in sufficient time to enable review prior to review meetings or before processing invoices. Drafters should take note of how the data items will be used, and amend the required delivery schedule in the CDRL.

Common DIDs

If additional DIDs are required it is preferable to reuse a DID from another ASDEFCON template, if available, or refer to a national / international standard, rather than create something totally unique. This encourages a standard way of doing business between Defence and industry for all contracts.

[4] The term 'Approved' is defined in the Glossary with reference to SOW clause 2.4.4.

Tailoring of DIDs is generally not required, and should be kept to a minimum when it is. DIDs have been developed to accommodate the broadest application and changes to naming conventions or other alterations can have unintended consequences for other sections of the contract. Furthermore, many Defence contractors have developed standard data item templates to match the DIDs, and changes could result in additional but unnecessary effort and cost.

To ensure broad applicability while minimising the need for tailoring, many DIDs are drafted to be 'self-tailoring', whereby certain clauses respond to tailoring elsewhere in the Contract. An example is a clause that begins "If the Contract requires [X] the [name of data item] shall include…". If the Contract does not require "[X]" then no action is required, even though the clause was not deleted from the DID.

All DIDs, existing, reused and new, are included in the RFT in a schedule to the CDRL.

SOW Tailoring in Context

The following are the very broad steps leading to RFT development.

Step 1. Confirm the objectives, scope and boundaries for the contract. Refer to the procurement strategy / PES / HDS and the OCD for boundaries between the contract, Commonwealth activities and other contracts. This step must consider strategic inputs, such as higher-level Defence objectives and initiatives that will influence the contract.

Step 2. Identify and scope the Materiel System. This refers to the specifications for the Supplies.

Step 3. **Tailoring the SOW** - defining the work requirements. This begins by tailoring the technical clauses of the SOW; primarily SE, ILS, CM and Verification and Validation (V&V). Drafters should then tailor the project management clauses and other enabling SOW clauses (eg, general requirements) and confirm the DIDs to be used.

Step 4. Review and refine COC.

Step 5. Prepare the COT, COT annexes and RFT documentation pack for release to industry.

Tailoring the Draft Statement of Work

The template includes Core, Optional and Core Option clauses.

Core clauses are always included (for the scale of contracts covered by the template), but may contain optional subclauses.

Optional clauses may or may not be needed, depending upon an individual contract. An optional clause means that it is optional within the range of contracts using this template, but some can be mandatory in certain circumstances, such as to address applicable regulatory requirements. As a convention, optional clauses that are not required can be replaced with the words 'Not used', in order to preserve any cross-references to subsequent clauses.

Core clauses often contain internal options (eg, 'Option A' and 'Option B') where one of the options must be chosen; these are called 'Core Options'. If a clause contains options that are not alphabetised (A, B, etc), drafters may choose as many options as required.

The system of core and optional clauses is hierarchical. A core clause may be a subclause to a high-level optional clause; in which case the core clause is only required once the higher level optional clause has been chosen. If the high-level optional clause is not included, then none of its subclauses (including core clauses) are required.

Clauses may also be tailorable or non-tailorable. Guidance in this SOW Tailoring Guide indicates whether clauses must be tailored, may be tailored, or is non-tailorable. The wording of tailorable clauses may be amended by drafters to suit the needs of the Contract, whereas the wording for the small number of non-tailorable clauses cannot. A clause is usually non-tailorable because it has been established by an authority external to the drafter's organisation. For example, clause 2.4 for deliverable data items was the result of a negotiated agreement by the Contracting Consultative Forum involving Defence and Industry executives, and should not be changed (other than the option for a Data Management System). The classification of a clause as non-tailorable does not preclude minor changes, such as updating cross-references to other clauses or annexes, provided that the meaning of the clause is preserved.

Core and Optional clauses are annotated within the template for level one and level two headings and in this SOW Tailoring Guide. Drafters should tidy up the draft Contract and remove annotations (eg, Option A, Core and note to drafters) before the draft Contract is released to tenderers.

Wherever possible, the form of the SOW template should be adhered to, bespoke tailoring should be kept to a minimum and changes limited to only those areas which are necessary to address specific requirements of the procurement. Changing clauses risks creating inconsistencies and may cause unintended consequences in the resulting Contract. However, some tailoring is unavoidable, and contracts must be customised to the specific goods and services required, and the circumstances of the procurement. When tailoring, clauses should only be added, modified or deleted consistent with the advice provided in this Tailoring Guide, or after seeking advice from the relevant specialist.

Template and SOW Tailoring Guide User Tips

The various note to drafters within the template are intended to guide drafters on which clauses should be used in various circumstances. The various note to tenderers provide guidance for both drafters and tenderers. Notes may also refer to reference documents and whom to consult for further information.

Drafters should read the SOW template and the SOW Tailoring Guide well before the date the draft Contract is required, particularly as advice from stakeholders may take time to obtain.

Drafters may need access to referenced documents in order to undertake tailoring. In many cases, these documents will also be required by tenderers and need to be made accessible for the RFT.

Drafters will often be confronted with the question of whether a particular optional clause is applicable to their requirements. The SOW Tailoring Guide is not always able to provide a definitive answer when the issues are specific to the individual contract. Drafters should refer to the PES / HDS or acquisition and sustainment strategy, as applicable, to ensure that the scope of the required contract is understood before beginning to tailor. SME advice should be sought as required.

The following steps are suggested when addressing a relevant section or clauses within the SOW:

a. determine the Supplies and the enabling services required;

b. read the relevant clause and refer to this SOW Tailoring Guide for additional information;

c. understand what the clause asks the Contractor to do, and its relevance to the contract;

d. review any related DIDs to ascertain any flow-on effects (eg, work in accordance with plans);

e. select the relevant clause(s) that best describes what is required from the Contractor; and

f. ensure that related DIDs and/or annexes are referenced from the selected clause.

Summary of ASDEFCON Guiding Principles

The following list is a summary of the 'Guiding Principles' used to guide the development of the ASDEFCON templates. They offer guidance for the consistent development of further clauses and DIDs when tailoring an individual draft Contract.

Principle 1. Risks should be allocated to the party best able to manage them

'As a general principle, risks should be borne by the party best placed to manage them'. (Commonwealth Procurement Rules)

Principle 2. SOW is the principal document driving template and solicitation document development

The SOW is the part of a contract that defines the scope of work, and may include one or more specifications (ie, what we want to buy).

Principle 3. Essential supply terms should be certain and reflect the entire scope of the agreement

This reflects the need for those contract requirements that drive scope, cost and risk to be clear in their operation, unambiguous, and bounded. A firm price requires a firm definition of scope.

Principle 4. Integrated Management Framework

Minimise overlaps and gaps within the ASDEFCON materiel templates and the teams employing them.

Principle 5. Focus on Outcomes (not Process)

The SOW should maximise the focus on outputs or outcomes, to enable tenderers to bid using their own processes. Approved processes become part of the Contract (through plans).

Principle 6. Work in Contractor process domain where suitable

The Contractor should be responsible for defining the processes to be used to achieve the required outcomes (corporate governance and accountability requirements must still be met).

Principle 7. Contract plans complete by effective date / operative date

Plans are integral part of the process definition and governance framework for a contract; they need to be established and Approved upfront.

Principle 8. Products and processes, linked but distinct

The quality of the delivered products is dependent upon the processes used to develop and evaluate those products. Defence needs mechanisms to assess both.

Principle 9. Contract Data Requirements List includes all Data Deliverables

Consolidate all data deliverables, which are within the scope of a contract, in the CDRL (excludes CCPs as they change contract scope).

Principle 10. Process Definition Documents

Maintain clear differentiation between process definition documents and the products or artefacts (outputs) of the process.

Word Processing Tips

All of the ASDEFCON templates are now based on a Microsoft Word® template called 'ASDEFCON Styles 2015.dotm'. The styles can be easily applied by using buttons created by installing another template called 'ASDEFCON Toolbar 2015.dotm'. Both templates are available for download from the ASDEFCON templates website, along with instructions for installation. Once installed, the ASDEFCON styles and tools will appear on an additional ribbon in Microsoft Word®. Refer to the *ASDEFCON Toolbar and Styles 2015 User Guide* for details.

Adding clauses and notes must be done with care to avoid inadvertent changes to the styles and to ensure that built-in numbering continues to function correctly. The tips that follow will assist drafters in working with the documents:

- When tailoring, do not delete headings at heading level 1 or 2. If a clause is not required, retain the heading and mark it 'Not used'. This preserves cross-references between different parts of the template, particularly links between the COC and the SOW.
- If possible, additional clauses at heading level 3 should be inserted after the standard template clauses to avoid cross-referencing errors between documents. Note that cross-references between clauses within a single document are inserted as cross-reference fields – use 'Ctrl + click' to follow a link or click on the link and press F9 to update.
- Avoid using 'formatting' to change the look or numbering of a clause (eg, manually applying different fonts or paragraph formatting). Use the ASDEFCON ribbons to apply pre-defined styles. There are style sets for the COT/COC, Attachments, SOW (and DIDs), and tables. The SOW style set can be applied from the SOW group on the ASDEFCON ribbon, and can be shown or hidden by clicking the  button. Table styles can be shown or hidden with the  button. If additional styles are required (eg, for headers and footers), open the 'Styles and Formatting' task pane (click the  button or select from the menu: Home tab > Styles and the 'expand' button in the bottom right hand corner). Highlight the applicable clause and then select the required style from the 'Styles' list. SOW specific styles all begin with 'SOW'. DIDs and DSDs use the SOW styles.
- When pasting text from another document, paste as 'Unformatted text' (Right Click > 'Keep Text Only'). This will prevent unwanted styles in the source text from corrupting the styles and numbering within the document. Once pasted, use the format painter or apply the ASDEFCON styles from the ASDEFCON ribbon.
- In the larger documents, such as the COT, COC and SOW, the tables of contents are built from heading style levels within the document. Click into a table of contents and press F9 to update.
- If the clause numbering associated with a style in the document appears corrupted or the indenting is not right, here are a few options to try:
  - Reapply the style as described above, which should correct any formatting inadvertently applied to the style.
  - Save the file and close Word, then reopen the file. This seems to fix some cases where clause indentation has changed.
  - On the ASDEFCON styles ribbon, click on the 

(Attach Template) button which will reapply the styles from the template to the current document.
  - If changes were saved to the styles template (a dialog box would have prompted the user to save the changes to the template, save all documents and re-install a clean copy of the toolbar and styles templates. Reopen the document and then reapply the styles, as described above.
- Optional clauses appear in a box (actually a table). In the ASDEFCON ribbon click the  button to remove the table, otherwise use 'convert to text' from the 'Table Tools - Layout' ribbon.

ASDEFCON (STRATEGIC MATERIEL)
STATEMENT OF WORK TAILORING GUIDANCE

1. SCOPE

1.1 Purpose

Status: Core

Purpose: To define the purpose of the Statement of Work (SOW).

Policy: Nil

Guidance: Clause 1.1 is a concise statement that defines the generic purpose of the SOW. It should not require amendment.

Drafter's Action: Clause 1.1 is to be included in the RFT without alteration.

Related Clauses: Nil

Further Reading: Nil

1.2 Background

Status: Optional. Included when there will be benefit in having background information described in the Contract.

Purpose: To provide relevant background information, including the broader project and related projects, when this may be useful information for the Contractor.

Policy: Nil

Guidance: This clause provides an overview of the background to the Contract, such as the genesis of the project and its broad objectives. For example, related project phases or precursor projects could be summarised, as well as other Defence initiatives with which the Contract is expected to align (eg, "Project outcomes are intended to be consistent with the objectives of the Defence Single Information Environment.").

Background should be included if there will be an ongoing benefit of having this information in the Contract. If the background is only useful for tendering, then this information could be provided in another way (eg, in the covering letter to the RFT).

As this clause is not intended to be contractual in nature, 'shall' statements should not be used. Care should be taken to ensure that any statements made in this clause do not conflict with other parts of the Contract. One way to avoid this is to reference other documents (eg, "Joint Project XXXX is seeking to provide the world's best multi-user, remote-controlled UUV, as described in the Operational Concept Document (OCD) included in Annex B to the SOW.").

As a guide, the description in this clause should be reasonably short, with sufficient information to 'set the scene' for the Contract, but not include excessive details that could compromise other parts of the Contract.

Drafter's Action: Where background information will be beneficial, drafters should develop an appropriate background clause for inclusion in the draft SOW.

Related Clauses: Any background should be consistent with the objectives in COC clause 1.2.2.

Further Reading: Nil

2. GENERAL REQUIREMENTS

2.1 Scope of Work

Status: Core

Purpose: To describe the overall scope of work under the Contract.

Policy: Nil

Guidance: This clause should describe the overall scope of work under the Contract, covering such activities as design, development, installation, integration, testing, verification, modelling, simulation and conducting reviews, etc.

This clause is intended to provide a high-level description of the work required, and to call up the specification to detail the Materiel System. Drafters should ensure that this clause covers the complete scope of Supplies required under the Contract.

Specifications at Annex A, and the OCD at Annex B, should be referenced as this may be the only place in the Contract where the Materiel System is explicitly required to accord to specifications (elsewhere it is implied, for example, confirmed by testing).

In developing these clauses, drafters should be aware that the Contractor is not required to deliver a full Support System. The Contractor is required to design the Support System, and deliver the physical products (and services such as initial Training) necessary to enable the Support System to come into being. The Support System does not exist until these physical products are integrated with the existing support infrastructure of the Commonwealth and In-Service support contractor, through the process of Transition.

This clause may identify major program phases (eg, such as increments in an incremental delivery process) or the number and phasing of major output products (eg, Mission Systems and major Support System Components). Reference to Attachment C, the Delivery Schedule, may be appropriate.

This clause should address the major product and service deliverables of the program (ie, it does not include the Contract management data items).

Clause 2.1.1 and clause 2.1.2, which addresses the requirements definition activities, are generic and usually do not require tailoring. Clause 2.1.3 provides a general clause to address Mission System development and delivery. Additional words may be added to specify the location for the delivery of each Mission System (or each different type of Mission System), if not specified elsewhere.

Similar clauses to clause 2.1.3 could be inserted for each other major end item required under the Contract. Drafters should ensure that all major end items are identified and linked to an appropriate specification (eg, if DSTG is to be provided with an integration-test lab (which is treated like a Mission System) to support the new operational Mission System, then this element would be identified). Drafters should ensure that these clauses clearly enunciate which elements represent Supplies and whether or not ownership will transfer to the Commonwealth. Examples, where there may be some doubt in this regard, include an in-country Software Support Facility operated by the Contractor (Support) / Subcontractor (Support) and Spares that are provided to and then owned by the Contractor (Support). Advice should be sought when drafting clauses to address these types of issues.

Clause 2.1.4 provides a general clause to address Support System requirements. Of note, the physical products that are required to implement the Support System are designed, developed and delivered in accordance with other clauses of the SOW, and do not need to be explicitly included here.

Clause 2.1.5 ties the delivery requirements for the Support System to the delivery of the Mission System(s) to help ensure that a ‘capability’ is being provided, not just

items of equipment. This clause needs to be consistent with Milestones in the Delivery Schedule, to be included in Attachment C.

Clause 2.1.6 is an optional clause included when there are complexities associated with installation at Commonwealth Premises; for example, multiple sites requiring coordination with operational units. Clause 2.1.6 is linked to clause 4.4.1, System Implementation, because as the complexity of implementation increases, the risk of conflicting requirements increases, and the Contractor needs to understand the Commonwealth's requirements in terms of order of precedence.

If the Commonwealth will have responsibilities that will affect the Contractor's scope of work, it may be appropriate to list these to ensure that the scope boundaries are clear. Notwithstanding, there are legal and commercial issues if including Commonwealth work in a Contract, and guidance from CASG, Materiel Procurement Branch should be sought if considering this approach. An example clause is provided below:

"The Commonwealth Representative will [for example]*:*

a. *co-ordinate access to all of the Commonwealth facilities required to implement the Capability;*

b. *perform codification using the Codification Data supplied by the Contractor;*

c. *co-ordinate ADF personnel to undergo training at the places and times agreed between the parties;*

d. *etc.*"

In addition to Commonwealth work, there may also be aspects that may be explicitly excluded from the Contract scope. An example clause is provided below:

*"The Contractor is **not** required to* [for example]*:*

a. *provide representation during Acceptance Validation activities being managed by the Commonwealth;*

b. *modify any element of infrastructure outside the walls of building XYZ at Naval Establishment …;*

c. *etc."*

Where details of Commonwealth responsibilities and boundaries on Contractor responsibilities are lengthy, separate annexes are often suitable.

Drafter's Action: Drafters may need to revise clause 2.1 to reflect the above issues.

Related Clauses: Clause 1.7 of the COC, Contracted Requirement, obligates the Contractor to provide the Supplies and fulfil its other obligations under the Contract.

Further Reading: DMH (ENG) 12-2-002, *Capability Definition Documents Guide*

2.2 Delivery of Supplies

Status: Core

Purpose: To require the Contractor to package Supplies, and to mark and label packaging appropriately, for the nature of the specific Supplies.

Policy: DEF(AUST)1000C, *Australian Defence Force Packaging Standard*

Work Health and Safety (WHS) Legislation

Guidance: This clause specifies requirements for packaging, and the labelling and marking of Packaging, for Supplies delivered under the Contract. This should not be confused with clauses 5.2.8.3 and 5.3.2.2 where the Packaging itself is a Supply (eg, re-useable, special-to-type containers). The clause interacts with numerous clauses in the COC (refer Related Clauses) relating to care, custody, liability, taxes, duties, customs and export approvals (as specific packaging and documentation may be

required). The clause provides for the work associated with packaging for delivery, whereas the liabilities, duties, etc, are covered under the COC.

In keeping to the ASDEFCON principle of following the Contractor's processes when appropriate, DEF(AUST) 1000C has not been mandated as a whole, but identified as a guide. The note to drafters highlights that the clause is not exhaustive, but some specific parts of DEF(AUST)1000C are mandated in clause 2.2.3; for example, code 128 linear bar codes and GS1 two-dimensional data matrix codes. Additional requirements should be included if WHS or other regulations apply (eg, for explosive ordnance).

Under the COC and Attachment C the Contractor is responsible for delivering Supplies to the designated point of delivery, in a serviceable condition and by the due date, while meeting all other costs and requirements of the Contract. As such, mandating a packaging standard has the potential to conflict with the Contractor's responsibilities, which is not deemed to be appropriate. Of note, for those items of Packaging that are Supplies under clause 5 of the SOW, the Defence packaging standard has been specified.

Drafter's Action: Drafters should determine whether or not additional clauses are required to meet regulatory / legislative requirements. If not, then clause 2.2 may be included in the RFT without alteration.

Related Clauses: Clause 3.4 of the COC includes export approvals associated with the Supplies.

Clause 3.5 of the COC relates to imported Supplies and customs entry.

Clause 6.1 of the COC relates to delivery of Supplies.

Clause 6.8 of the COC relates to the Acceptance of Supplies.

Attachment C, Delivery Schedule

SOW clause 5.2.8.3, Packaging , within Support System Synthesis.

SOW clause 5.3.2.2, Packaging, within Support System Implementation.

Further Reading: Nil

2.3 Data Management System

Status: Optional. A Data Management System (DMS) should be included when electronic data exchange between the Contractor and the Commonwealth will be practicable.

Purpose: To provide an efficient means to exchange data and share information between the Contractor and the Commonwealth.

Policy: DEFLOGMAN Part 2 Volume 10 Chapter 5 *Defence Policy on Acquisition and Management of Technical Data*

Guidance: Although optional, a DMS is implemented for efficiency benefits and should be included in the Contract when practicable.

DEFLOGMAN Part 2 Volume 10 Chapter 5 establishes the policy framework for the acquisition and management of Technical Data, with a central thrust being the increased utilisation of data in approved electronic formats.

A DMS provides online access to Technical Data and Contract Material held by the Contractor. A DMS is a Contractor website (or 'web portal') with access controls, a navigation system, and the ability to view and download documents. A more complex system may be database driven and run on-line applications. The DMS clauses also define support functions and training to efficiently use a DMS.

A DMS should provide efficient access to data by reducing the delays and cost associated with the transfer of hard copy documents, and of soft copies on physical media and the duplicated effort of managing and maintaining data configuration.

A DMS enables the delivery of many data items listed in the CDRL. In some cases a data item may be partially submitted via the DMS. For example, an original document that requires a signature may be supported by data from an engineering database. In this case, the DMS component would need to be delivered (made available) simultaneously with the hard copy delivery. If the drafter needs to specify which parts of a data item can and cannot be delivered via the DMS, notes should be added to the CDRL line. Use of a DMS, and the scope of data to be hosted on it, should be discussed with the preferred tenderer prior to the Effective Date.

Drafter's Action: Refer to sub-clause guidance.

Related Clauses: Refer to sub-clause guidance.

Further Reading: *MIL-STD-974, Contractor Integrated Technical Information Service (CITIS)*, may provide useful background information for implementing a DMS.

2.3.1 DMS Objectives

Status: Core (when a DMS is included)

Purpose: To establish the objectives for implementing a DMS.

Policy: Refer to clause 2.3.

Guidance: The objectives of a DMS are identified in SOW clause 2.3.1. Suitability of a DMS can be judged against these objectives.

Drafter's Action: Clause 2.3.1 should be included in the RFT without alteration.

Related Clauses: All other subclauses within clause 2.3.

Further Reading: Nil

2.3.2 General Requirements

Status: Core (when a DMS is included)

Purpose: To establish the scope of the DMS data and the required Commonwealth access.

Policy: Refer to clause 2.3

Guidance: Clause 2.3.2 defines the content and access requirements for the DMS, described in terms of the data required and the Commonwealth users who need to access it..

Clause 2.3.2.1 identifies the types of DMS Contract Data to be accessed, including both Contract management information and Technical Data. The initial list includes data items identified in the CDRL for DMS delivery.

A Work Health and Safety Management System (WHSMS) is required by clause 9.3 to detail the Contractor's management of WHS risks. COC clause 11.7 requires the Commonwealth to have access to the WHSMS, but physical access is not always efficient. To assist the Commonwealth to comply with its duty of care obligations under WHS Legislation, the DMS can provide on-line access to:

e. all Authorisations required by WHS Legislation in relation to work to be performed under the Contract; and

f. the WHSMS required by clause 9.3 (which is likely to contain the WHS-related Authorisations).

Access to the WHSMS is a major reason for including a DMS in the Contract.

When environmental management is included in the Contract under clause 9.2, the Environmental Management System (ENVMS) should also be accessed via the DMS for reasons of efficiency (it may be held on the same system as the WHSMS).

Other data that is more efficient to have on the DMS is dynamic data such as the Risk Register, or documents where access at short notice may be required, such as other Authorisations (excluding personal details).

Drafters should tailor the list of DMS Contract Data to suit the Contract and maximise efficient sharing of data. Additional DMS Contract Data could include:

a. a copy of the Contract, including all Contract Change Proposals (CCPs);

b. Engineering Change Proposals (ECPs) and applications for Deviations;

c. the Earned Value Management System (EVMS);

d. Configuration Status Accounting (CSA) system;

e. additional detail for the engineering information system (eg, requirements management database); and

f. 'live' copies of CDRL data items accessible between formal submissions (eg, the Contract Master Schedule (CMS), Verification Cross Reference Matrix (VCRM), and Logistic Support Analysis Record (LSAR)).

For data items that are delivered under the Contract in accordance with the CDRL, clause 2.3.2.2 refers to the COC 5.9 for the conditions that define DMS delivery.

Clause 2.3.2.3 identifies the Commonwealth personnel requiring DMS access. Drafters must tailor the clause to list Commonwealth Authorised Users. If Resident Personnel are applicable, they are generally expected to have access to the Contractor's information systems, which may be achieved by the DMS or may be more extensive. If Resident Personnel have greater requirements than the DMS, this can be included at Attachment L. Additional DMS access requirements may be needed for other Defence units (eg, operating units) and an Independent V&V (IV&V) contractor, if applicable. Drafters should note clause 2.3.4 and the Contractor's associated training obligations to DMS users.

Clause 2.3.2.4 identifies that the Contractor may provide Subcontractors with access to the DMS. This is at the Contractor's discretion (considering security and confidential information) but should improve the efficiency of the Contract work effort. Other contractors, such as members of an Interface Control Working Group (ICWG), may also have limited access.

Establishing a DMS will often involve trade-offs between what data is desired and the cost of additional interfaces. While the drafter may add to the list of DMS Contract Data under clause 2.3.2, the final scope may not be able to be determined until contract negotiations.

Drafter's Action: There are two primary considerations for tailoring this clause: what data is to be accessible through the DMS, and who should have access to it.

Data items to be delivered by DMS are annotated within the CDRL. Drafters need to review and adjust the CDRL as appropriate to the Contract.

Related Clauses: All other subclauses within clause 2.3

COC clause 11.7, Commonwealth Access

Attachment L, Resident Personnel, if a DMS is required for Resident Personnel

Annex C to the draft SOW, CDRL

Clause 2.4, Deliverable Data Items

Clause 3.10, Independent Verification and Validation

Further Reading: Nil

2.3.3 DMS Implementation, Operation and Management

Status: Core (if a DMS is included)

Purpose: To set out the requirements for the implementation, operation and management of the DMS by the Contractor.

Policy: Refer to clause 2.3

Guidance: Clause 2.3.3 describes the necessary requirements for DMS implementation and its on-going operation and management in terms of security, access, user functionality and maintenance of current data.

Clause 2.3.3.1 specifies general DMS functionality, including configuration control, user and account management, security and record keeping requirements. The list may be amended to suit individual contract needs.

Clauses 2.3.3.2 to 2.3.3.4 identify when the DMS must be made available, what to do during the interim period between the Effective Date and when the DMS is fully operational, and the need for a DMS Concept of Operations Document (DCOD).

Clauses 2.3.3.5 and 2.3.3.6 address DMS hardware and software and states that the Contractor is not required to provide computing hardware to Commonwealth Authorised Users except where otherwise specified (eg, for Resident Personnel). Hence, the Commonwealth team will need to ensure that:

a. appropriate Commonwealth computing hardware is available when the DMS becomes operational (eg, if the computing hardware is not able to be connected to the Defence single information environment and standalone systems are needed); and

b. if classified data will be accessed or exchanged, appropriate cryptographic equipment, security processes and approvals need to be in place before that data is accessed (noting that the Commonwealth may have to provide equipment and approvals to the Contractor).

If required to suit contract needs, clause 2.3.3.6 should be amended.

Clauses 2.3.3.7 to 2.3.3.10 define further requirements for maintaining access to and the continuity of the DMS.

Drafter's Action: Drafters should review clause 2.3.3 and tailor as required. Areas for attention include the interim arrangements for data items (before a DMS is established), the provision of hardware and software for the DMS, and CDRL requirements for the DMS Concept of Operations Document. DID-PM-DEF-DCOD should be reviewed but in most cases will not require tailoring.

Related Clauses: All other subclauses within clause 2.3

Clause 11.10 of the COC, Defence Security

Attachment L, Resident Personnel

Annex C to the SOW, CDRL

DID-PM-DEF-DCOD, DMS Concept of Operation Document

Further Reading: Nil

2.3.4 DMS Training

Status: Core (if a DMS is included)

Purpose: To require the Contractor to provide DMS training to Commonwealth Authorised Users.

Policy: Nil

Guidance: Clause 2.3.4 sets out Commonwealth training requirements for the DMS, identifying the numbers of personnel to be trained (from clause 2.3.2), and the training locations. The clause covers training for the DMS as a whole, which should include software applications (noting that when the Contractor proposes a non-Defence software application, the SOW usually requires specific training).

The clause assumes that, in subsequent years, new Commonwealth staff can be instructed in using the DMS by the (then) existing Commonwealth Authorised Users. If this is not the case (which may not be determined until the complexity of the preferred tenderer's DMS is known), clause 2.3.4.5 may be replaced with the optional clause below, to require the Contractor to provide follow-on DMS training.

Drafter's Action: Drafters need to tailor the numbers of personnel and locations in clause 2.3.4.4. The optional clause used to replace clause 2.3.4.5, when applicable. No other tailoring is required.

Related Clauses: All other subclauses within clause 2.3.

DID-PM-DEF-DCOD specifies the content requirements for the DMS Concept of Operation Document.

Further Reading: Nil

Optional Clauses: Following the initial DMS training required by clause 2.3.4.3, the Contractor shall provide training to new Commonwealth Authorised Users that join the Commonwealth project office from time to time.

2.4 Deliverable Data Items

Status: Core

Purpose: To define the framework and requirements for deliverable data items.

Policy: Nil

Guidance: This clause describes requirements for the preparation and management of data items, Commonwealth actions, and other obligations placed on each party.

Drafters should be aware that these clauses were negotiated between Defence and Defence Industry. They represent an agreed position that balances the risks of both parties and they are not to be changed.

Drafter's Action: Aside from referring to a DMS, when applicable, clause 2.4 is not to be tailored. Tailoring for deliverable data items is achieved through the CDRL

Related Clauses: Annex C to the SOW, CDRL.

Further Reading: Nil

2.4.1 Development and Submission of Data Items

Status: Core, non-tailorable (except for DMS reference)

Purpose: To require the Contractor to produce, deliver and update all data items in accordance with the CDRL.

Policy: Nil

Guidance: This clause creates a general requirement for the Contractor to provide data items in accordance with the CDRL; other SOW clauses refer only to specific lines in the CDRL. The CDRL contains significant information in terms of data item specification, delivery, update and Commonwealth action. Drafters should be aware that data items such as the Technical Documentation Tree and Technical Data List, both within the Master Technical Data Index, identity further data items to be delivered; effectively becoming CDRLs within the CDRL.

Drafters should refer to the CDRL and to guidance for the CDRL at Annex C.

Drafter's Action: Amend the clause to include or exclude reference to clause 2.3, for the DMS.

Related Clauses: All other subclauses within clause 2.4.

Clause 2.3, Data Management System

Annex C to the SOW, CDRL

Further Reading: Nil

2.4.2 Review, Approval or Non-Approval, and Acceptance of Data Items

Status: Core, non-tailorable

Purpose: To identify the Commonwealth's actions applicable to data items.

Policy: Nil

Guidance: Clause 2.4.2 lists the Commonwealth Representative's actions regarding data items, being to: Review; Approve or not Approve; Accept or reject; or consider as a CCP for approval. Requirements for Commonwealth actions are set out in clauses 2.4.3, 2.4.4, 2.4.5, and 2.4.6, respectively.

Drafter's Action: Clause 2.4.2 is to be included in the RFT without amendment.

Related Clauses: All other subclauses under clause 2.4

Clause 11.1 of the COC, Change to the Contract

Annex C to the SOW, CDRL

Further Reading: Annex C, Contract Data Requirements List guidance.

2.4.3 Data Item Review

Status: Core, non-tailorable

Purpose: To define the meaning of data item Review, and to require the Contractor to respond to any review comments provided by the Commonwealth Representative.

Policy: Nil

Guidance: Clause 2.4.3 enables the Commonwealth to provide comment on data items that are subject to Review, without taking responsibility for the Contractor's processes or Contract outcomes.

The Contractor is recognised as the 'design authority' and, as such, is required to exercise expert judgement in responding to Commonwealth comments. The Commonwealth, on the other hand, does not proport to be an expert in either:

a. the technical domains pertinent to the Contract; or

b. the application of the Contractor's processes.

Clause 2.4.3 acts to protect the Commonwealth from situations where Review comments could be construed as interference with the Contractor's design process and other activities. Clauses 2.4.3.1a to d reinforce this differentiation.

In general, the Commonwealth should ensure that review comments are consistent with the principles of Clear Accountability In Design (CAID). This philosophy and its rationale are explained in DMH (ENG) 12-2-001, *Materiel System Review Guide*.

As explained by clause 2.4.3.1d, the Contractor is to address the Commonwealth's review comments; however, it does not require immediate action, and comments can be incorporated in the next update to the data item. Otherwise, an explanation could be provided to explain how the Commonwealth's concerns were addressed.

Drafter's Action: Clause 2.4.3 is to be included in the RFT without amendment.

Related Clauses: All other subclauses within clause 2.4

Annex C to the SOW, CDRL

Further Reading: Annex C, Contract Data Requirements List guidance.

DMH (ENG) 12-2-001, *Materiel System Review Guide,* regarding CAID

2.4.4 Data Item Approval

Status: Core, non-tailorable

Purpose: To define:

a. the meaning of data item Approval,

b. the Commonwealth's obligations with respect to data items that are subject to Approval,

c. the Commonwealth's rights with respect to non-Approval, and

d. the Contractor's obligation to respond to the non-Approval of a data item.

Policy: Nil

Guidance: The guidance for clause 2.4.3, in regards to the CDRL and CAID, is equally applicable to this clause.

In brief, Approval means agreeing to a course of action without taking responsibility for the outcome. Approval implements one of the guiding principles for ASDEFCON: to allow the Contractor to apply their best practice rather than the Contract specifying processes. For plans, Approval also enables Commonwealth governance functions with insight into Contractor processes. Even so, the Commonwealth does not take responsibility if following an Approved plan does not produce the required outcomes.

Attention is drawn to clause 2.4.4.4, reasons for non-Approval of a data item. This clause resulted from consultation with industry representatives to address concerns with prior practices, and to ensure that a notice of non-Approval is only given for substantive reasons. The agreed reasons for non-Approval stated in the clause are the full range of possible substantive reasons. For example, minor grammatical or spelling mistakes are not grounds for non-Approval; however, a notice of non-Approval may be given if the grammatical and spelling errors were so significant and widespread that the data item was not 'clearly understandable'. Approval and non-Approval become more important if a data item provides input into Commonwealth activities (eg, a SPO / Project Office schedule). For these reasons the clause explicitly allows for subjective judgement by the Commonwealth Representative as the final arbiter. As with all matters of contention, the Commonwealth Representative should be addressing his/her concerns with the Contractor in parallel to submitting a formal notice.

Drafters should note the example provided in the Schedule of Milestone Entry and Exit Criteria at Annex C to Attachment B. This example includes as entry criteria:

a. Acceptance / Approval (as relevant) of all data items scheduled for delivery prior to or at each Mandated System Review (MSR), for data items subject to Acceptance or Approval in accordance with the CDRL; and

b. Delivery of all data items scheduled for delivery prior to or at each MSR, for data items subject to Review in accordance with the CDRL.

Under this approach, the Commonwealth has the right to not enter a MSR until the requisite data items have been delivered and Approved or Accepted, as applicable. Furthermore, as MSRs are often Stop Payment Milestones, the implications for the Contractor of not entering a MSR (and, therefore, delaying the exit from the review) are significant. An alternative approach (but probably not as clean) would be to include the specific data items within the body of the checklist for the applicable MSR. Refer to clause 7.9 of the COC for Stop Payment Milestones.

Drafter's Action: Clause 2.4.4 is to be included in the RFT without amendment.

Related Clauses: All other subclauses under clause 2.4.

Annex C to the SOW, CDRL

Annex D to the SOW, MSR Checklists

Clause 6.1 of the COC, Delivery

Annex C to Attachment B, Schedule of Milestone Entry and Exit Criteria.

Further Reading: Annex C, Contract Data Requirements List guidance.

2.4.5 Data Item Acceptance

Status: Core, non-tailorable

Purpose: To require the Contractor to process data items that are subject to Acceptance.

Policy: Nil

Guidance: Data items delivered for Acceptance are Supplies and their Acceptance is subject to clause 6.8 of the COC, like all other Supplies. These data items are mostly items of Technical Data that are Support Resources, such as operator and support manuals or the final version of a drawing set. Guidance for clauses 2.4.3 and 2.4.4 is also relevant here, particularly in relation to MSRs.

Drafter's Action: Clause 2.4.5 is to be included in the RFT without amendment.

Related Clauses: All other subclauses under clause 2.4

Annex C to the SOW, CDRL

Annex D to the SOW, MSR Checklists

Clause 6.1 of the COC, Delivery (of Supplies)

Clause 6.8 of the COC, Acceptance

Clause 7.9 of the COC, Stop Payment

Annex C to Attachment B, Schedule of Milestone Entry and Exit Criteria

Further Reading: Annex C, Contract Data Requirements List guidance.

2.4.6 Data Items Delivered Under Contract Change Proposals

Status: Core, non-tailorable

Purpose: To ensure that the CCP procedure in clause 11.1 of the COCis applied to data items identified in the CDRL as being subject to CCP approval.

Policy: Nil

Guidance: Clause 2.4.6 addresses those data items that necessitate a change to the Contract. Examples of these data items include:

a. the System Specification and the Support System Specification (to establish these as the core elements of the Functional Baselines (FBLs) for the Mission System(s) and Support System, respectively); and

b. provisioning lists, which document the range and quantities of Support Resurces (eg, Spares, Packaging, Support and Test Equipment (S&TE), and Training Equipment) that will be procured / supplied under the Contract.

Drafter's Action: Clause 2.4.6 is to be included in the RFT without amendment.

Related Clauses: All other subclauses under clause 2.4.

Annex C to the SOW, CDRL

Clause 11.1 of the COC, Change to the Contract

Further Reading: Annex C, Contract Data Requirements List guidance.

2.4.7 Data Item Updates

Status: Core, non-tailorable

Purpose: To require the Contractor to maintain the accuracy, completeness and currency of all delivered data items.

Policy: Nil

Guidance: Attention is drawn to clauses 2.4.7.3 and 2.4.7.4. The first clause states that any proposed amendments to data items shall be subject to the same Review and Approval processes specified in clause 2.4. This means that the guidance under 2.4.3 and 2.4.4 is equally applicable to the proposed amendment. The second clause states that, until a proposed amendment to an Approved data item is Approved, the original data item remains in effect. This second clause protects the Commonwealth in situations where the Contractor might wish to step away from the agreed position documented in an Approved data item (eg, for reasons of cost). Clause 2.4.7.4 prevents this from occurring without Commonwealth agreement.

Drafter's Action: Clause 2.4.7 is to be included in the RFT without amendment.

Related Clauses: All other subclauses under clause 2.4.

Annex C to the SOW, CDRL

Further Reading: Annex C, Contract Data Requirements List guidance

2.4.8 Actioning of Data Items

Status: Core, non-tailorable

Purpose: To have the Contractor acknowledge that a delay in the delivery of data items may result in a delay in actioning of those data items by the Commonwealth, and that any such delay will not represent a cause for a postponement claim.

Policy: Nil

Guidance: The Commonwealth considers its obligations under the Contract, including the effort needed to Review, Approve and Accept data items, in order to determine its personnel resources needed for the expected workload. If the Contractor is late to deliver some data items but on time for subsequent data items, and the Commonwealth is not resourced for the resulting increase in workload, it may be late in actioning the data items by the times required by the CDRL.

Contractors have claimed in these circumstances that they were absolved from further compliance with obligations that were contingent on the Commonwealth's actions until the Commonwealth had performed its obligations, or that they were entitled to postponement and to claim postponement costs.

Clause 2.4.8 addresses this lesson learned. Commonwealth obligations in such circumstances (when workload is increased due to late deliveries) are to use reasonable endeavours to action the data items under the CDRL timeframes, or where that fails, when sufficient resources become available. Clause 2.4.8.3 specifically precludes the Contractor from claiming that the Commonwealth's inability to action the data item is a circumstance beyond its reasonable control for the purposes of clause 6.3.1 of the COC.

Users should note that this clause is not applicable where the Commonwealth has accepted a change to the delivery baseline in a CCP that also affects the schedule. In these circumstances, despite the Contractor being in delay based upon the original delivery date, the Contractor may be compliant with the new delivery date. The Commonwealth will need to consider how CCPs affecting schedule will impact on its capacity to action data items within the action periods in the CDRL. Where the Commonwealth is unlikely to be able to meet the CDRL requirements, the Commonwealth should consider the consequences for postponement claims, postponement costs, and schedule recovery, when assessing the CCP.

Drafter's Action: Nil

Related Clauses: All other subclauses under clause 2.4.

Clause 6.3 of the COC, Postponement

Annex C to the SOW, CDRL

Further Reading: Annex C Contract Data Requirements List guidance.

2.5 Draft Data Items and Strategies included at Attachment K

Status: Optional. To ensure that, when applicable, Contract data items are developed from the draft data items and Strategies provided in the preferred tender response.

Purpose: To identify the specific draft data items and Strategies that capture the tendered offer, and to identify the actions that will occur as these data items and Strategies are superseded by data items delivered under the Contract.

Policy: Nil

Guidance: Each tenderer delivers draft data items and Strategies in its tender response (eg, planning Strategies, Contract Work Breakdown Structure (CWBS), specifications and initial provisioning lists for Spares and S&TE). Attaching these to the Contract provides the Commonwealth with a mechanism for capturing the tendered offer in the resultant Contract; otherwise the intent of that offer may be lost as only Contract documents define the 'entire agreement' (see clause 1.5 of the COC).

During an Offer Definition and Improvement Activities (ODIA) phase or other pre-contract activity, draft data items may be updated or plans prepared from Strategies by the preferred tenderer (to be Contractor) and reviewed by the Commonwealth. The updated data items, any Commonwealth review comments, and other draft data items that were not updated, may be added to Attachment K. Some draft data items may be fully developed and reviewed ready for Approval by the Effective Date (ED). This is usually limited to a few key plans that will direct work immediately following the ED. These Approved data items should not be included at Attachment K; only those data items that are not yet Approved.

Clause 2.5.2 requires that data items developed under the Contract be based on the draft data items and Strategies in Attachment K, when applicable. This ensures consistency between the tendered offer and the Contract.

Clause 2.5.3 requires the Contractor to acknowledge the treatment of any Commonwealth comments with respect to the draft data items and Strategies at Attachment K, particularly that the comments may not be everything required for the data item to be Approved or, if becoming part of the Contract (eg, a specification in an annex), ready for CCP approval.

Clause 2.5.4 describes how draft data items and Strategies are removed from the Contract. Following Approval or CCP approval of a data item, which was based on a draft data item, the draft data item is considered superseded and withdrawn from Attachment K through a CCP. Strategies are slightly more complex in that one Strategy may inform the development of several Contract plans; hence, a number of data items (ie, plans) need to be Approved before the Strategy can be removed.

Drafter's Action: Drafters are to determine if draft data items and Strategies are appropriate and then include clause 2.5 as appropriate. Drafters may also identify the draft data items and Strategies to be included in Attachment K using notes to tenderers in the draft Attachment K.

Drafters should review the CDRL for consistency, to ensure that data items expected to be included in Attachment K are not Approved by ED.

Related Clauses: Clause 2.4, Deliverable Data Items

Attachment K provides a repository for draft data items, Strategies and comments.

Further Reading: Nil

2.6 Commonwealth-Directed Trade Studies

Status: Optional. To be included where the Commonwealth requires the Contractor to undertake specified trade studies.

Purpose: To require the Contractor to undertake studies into aspects of the proposed Materiel System, typically involving tradeoffs between alternative options.

Policy: Applicable policy requirements will depend upon the nature of the Trade Study.

Guidance: This clause should be included if the Commonwealth Representative wishes to investigate specific aspects of the Contractor's proposed solution for either the Mission System or the Support System. Trade studies assist to determine the viability of design options, such as the use of new technologies versus established processes and products, if commonality with other systems is feasible, the preferred locations for support facilities, or other solution options that may benefit the Commonwealth. Studies are undertaken early in the Contract period so that the conclusions can be used to inform the development of the System Specification, Support System Specification, or hardware and software designs.

If an ODIA phase or pre-contract work is included in the acquisition strategy, then some trade studies may be brought forward and undertaken in this phase (to the extent practicable) to enable cost, schedule and performance issues to be captured in the Contract before ED.(and supersede the studies under clause 2.6).

Of note, this clause should not be used for trade studies that would be a normal part of the Contractor's design process.

To scope the trade study, a trade-study SOW should be developed to define the tasks to be undertaken, the criteria for evaluation, and the reports to be delivered. This SOW (and a specification, if required) should be included in Annex F to the main SOW, in accordance with clause 2.6. Commonwealth-directed trade studies would normally be conducted in accordance with the Contractor's own processes, in keeping with *ASDEFCON* principles to use Contractor processes where suitable. Nevertheless, some trade studies will have specific requirements that the Commonwealth needs to specify in the trade-study SOW. Any deliverable data items should be added to the CDRL for overall efficiency in data item management.

Supportability characteristics of the Mission System and Support System (and potential Supportability improvements) are likely candidates for Commonwealth-directed trade studies. These trade studies are usually applications of the Logistic Support Analysis (LSA) activities into specific Standardisation Opportunities, Technological Opportunities, or Support System Alternatives.

The scope and objectives of each Commonwealth-directed trade study needs to be clearly defined. For example, requesting the "investigation of Standardisation Opportunities" is inadequate and should be a part of the Contractor's normal processes in any case. An explanation of the scope (eg, standardisation with a particular existing system) and the objective (eg, reduction in Life Cycle Cost (LCC) and improved deployability of maintenance support) is required.

A DID for a trade study report is included in the *ASDEFCON (Strategic Materiel)* template as DID-ENG-SOL-TSREP. For Supportability-related trade studies, Annex A to Chapter 6 of Part 3 of the *ADO LSA Manual* provides an outline for a Supportability Trade Study Request, and Annex B has an example Supportability Trade Study Report DID (DID-ILS-DES-SUPTSR). Each trade study should be undertaken in accordance with the Approved ISP and/or SEMP, as applicable.

The schedule for conducting trade studies needs to align with the Contractor's design and development processes, with enough time to allow the Commonwealth to consider the results and recommendations for additions to specifications or design. The schedule should be developed with the Contractor as part of the initial CMS. For example, a trade study into Mission System design Supportability (eg, for a health and usage monitoring system) would need to be delivered at the System Requirements Review (SRR) or the System Definition Review (SDR) for inclusion in System Specifications. Alternatively, an analysis of types of Interactive Electronic

Technical Manuals (IETMs) used for support may not be required until later (eg, at DDR or the Support System DDR (SSDDR)).

Drafter's Action: Drafters need to determine whether there are specific issues that require Commonwealth-directed trade studies. If such studies are required, drafters must develop appropriate trade study SOWs for inclusion in Annex F to the draft SOW.

Related Clauses: Clause 3.6 of the COT refers to the offer ODIA process.

'Mission System', 'Standardisation Opportunity', 'Support System', and 'Technological Opportunity' are defined in the Glossary.

DID-ENG-SOL-TSREP defines content requirements for a Trade Study Report.

Further Reading: *ADO LSA Manual* Part 3 Chapter 6

3. PROJECT MANAGEMENT

3.1 Contractor's Project Management Organisation

Status: Core

Purpose: To require the Contractor to establish and maintain a discrete project-management organisation with suitable capability to perform the Contract.

Policy: Nil

Guidance: The Commonwealth expects that the Contractor will manage the resultant Contract using sound project-management principles and practices, given the likely scope and cost associated with acquisition contracts of this scale. This clause provides the overarching obligation within which other subordinate elements (eg, the SE organisation or the ILS organisation) will operate.

The conditions of this clause apply to the Contractor and the Contractor should flow down all applicable requirements of this clause to Approved Subcontractors.

Drafter's Action: Clause 3.1 is to be included in the RFT without alteration.

Related Clauses: TDR E-1, Annex E to the COT, Project Strategy

Further Reading: Nil

3.2 Project Planning

Status: Core

Purpose: To ensure that the Contractor has realistic plans at all times and to provide assurances to the Commonwealth. This includes activities that are not explicit in the Contract, such as the Contractor's set up of infrastructure to conduct Contract activities.

Policy: Defence requires a sound project-management approach to be adopted by the Contractor for the management of its contractual obligations. Specific policy and guidance for project management is contained in the CASG QMS.

Guidance: The template requires that the Contractor develop and deliver various plans and schedules to be used to manage the Contract. Specific requirements are defined in DIDs but in general terms the Commonwealth uses the plans and schedules to:

a. gain visibility into the Contractor's planning,

b. understand and evaluate the Contractor's approach to managing the scope of work associated with the Contract, and

c. provide input into the Commonwealth's planning.

Drafter's Action: Nil

Related Clauses: Nil

Further Reading: CASG Manual (PM) 002 *CASG Project Management Manual*

3.2.1 Contract Start Up Plan

Status: Core

Purpose: To require the Contractor to develop and deliver a Contract Start Up Plan and to manage Contract start up in accordance with the Approved plan.

Policy: Refer to policy description at clause 3.2 above.

Guidance: A Contract Start Up Plan is required to ensure orderly and timely establishment of the Contractor's team and the necessary infrastructure to perform the Contract. The plan enables the Commonwealth to understand and monitor Contractor progress during this critical phase from ED (or before) until successful completion of the

Integrated Baseline Review (IBR) and Earned Value Management (EVM) implementation workshops.

There are a number of factors that combine to work against an orderly and timely Contract start up within the Contractor's organisation, including the following:

a. due to the associated costs, Contractors do not normally commence start-up activities, such as recruiting and infrastructure development, until after ED;

b. at ED, there are usually only a handful of people working on the Contract;

c. there is usually a significant number of documents to be delivered within the first few months of the Contract, and the Contractor's team will be under great internal pressure to deliver these documents and achieve the payment milestones, to the detriment of other start-up activities; and

d. Subcontracts may not be signed until after the Contract (with Defence), and some will need to be tendered and others negotiated in this period.

It is possible for the Contractor to perform a considerable number of start-up activities, before Contract signature, without expending or committing significant funds. Examples of such activities include:

a. recruiting for key staff, including advertising and interviews but stopping short of formal job offers (once the Contract is signed, job offers can be made and successful applicants arrange to transfer to their new job, after a sufficient notice period);

b. identification of the information technology needed on a cumulative monthly basis during contract start-up (short of placing an order);

c. identification of office accommodation, furniture and fittings, on a cumulative monthly basis, required during contract start-up (short of placing orders); and

d. other potential activities identified in DID-PM-START-CSUP.

Drafter's Action: Clause 3.2.1 is to be included in the RFT without alteration.

Related Clauses: DID-PM-START-CSUP defines requirements for the Contract Start Up Plan.

Further Reading: Nil

3.2.2 Project Management Plan

Status: Core

Purpose: To require the Contractor to submit a Project Management Plan (PMP), for Approval, and to manage the Contract in accordance with the Approved PMP.

Policy: Refer to policy description at clause 3.2 above.

Guidance: The PMP, supplemented by subordinate plans, is used by the Contractor to provide direction to the Contractor's management team responsible for the performance of the work. The PMP is also used by the Commonwealth to gain visibility of the Contractor's planning and provide input into Commonwealth plans.

The PMP should provide an overview of the Contractor's processes and how they fit together to form an integrated management system for the project. As an analogy, it should be like the key map at the front of a street directory and provide an overview showing how all of the detailed processes (maps) fit together.

The PMP identifies the Contractor's Project Management (PM) processes and will become the reference that is used in conducting PM process evaluations at various reviews during the Contract Term.

Note that a distinction is made between the PMP and detailed planning documents. The PMP describes the Contractor's overall approach to the management of the Contract. Detailed planning documents, or 'execution plans', include the CWBS,

Work Breakdown Structure (WBS) dictionary, CMS, Risk Register and budgets. In a typical large-scale Contract, the PMP may be in the order of 100 pages in length.

Drafter's Action: Clause 3.2.2 is to be included in the RFT without alteration.

Depending upon whether or not the Commonwealth Representative intends to obtain a Contract-ready PMP prior to ED (ie, through ODIA or pre-contract work), the CDRL delivery times for the PMP may need to be adjusted.

Related Clauses: Clause 3.6 of the COT refers to the ODIA phase.

TDR E-1 of the COT, Project Strategy

DID-PM-MGT-PMP defines the requirements for the PMP.

Further Reading: Nil

3.2.3 Contract Master Schedule

Status: Core

Purpose: To require the Contractor to submit a CMS for Approval and to use the Approved CMS as the primary schedule for managing the Contract.

Policy: Refer to policy description at clause 3.2 above.

Guidance: The CMS describes the Contractor's planned sequence of activities, milestones and decision points to enable the objectives of the Contract to be met. The CMS provides the current (actual) project schedule status, comparing the current schedule with the (Approved) Contracted schedule. The CMS also compares the current schedule status with any applicable baseline schedule. DID-PM-DEF-CMS provides more detail on the scope of coverage of the CMS.

The CMS and the CWBS are two key deliverables for understanding the Contractor's (and Subcontractors') planned scope of work and for measuring Contract progress. Under *ASDEFCON (Strategic Materiel)*, the Contractor is required to deliver a schedule that integrates the activities and milestones to be achieved by the Contractor's functional disciplines (eg, SE, ILS, production, QA and V&V). DID-PM-DEF-CMS requires the integration of the CMS with other management functions such as the EVMS[5]. The CMS and the CWBS form the foundation of the Performance Measurement Baseline (PMB).

TDR E-4 requests each tenderer to provide a draft CMS in its tender response. The draft CMS would normally provide one of the inputs for determining the payment schedule for the Contract (eg, by defining the dates for Milestone payments and enabling cash-flow assessments); however, its major function for the tender is to assist with the assessment of risk. If pre-contract work is programmed, it is recommended that the CMS be one of the deliverables that is further developed. If not Approved at ED, the draft CMS should be attached to the Contract (refer clause 2.5) for the Contractor to use as a basis for developing the CMS to be delivered under the Contract.

Clause 3.2.3 details the procedure and timeframes that apply for the submission, agreement and amendment of the CMS.

Clause 3.2.3.3 specifies Open Plan Professional as the Commonwealth's preferred scheduling software package. Nevertheless, the clause recognises that there are a great number of scheduling packages and, keeping with the *ASDEFCON* principle of utilising the Contractor's processes where appropriate, drafters should consider if an alternative scheduling package proposed by a tenderer will meet the needs of the project. Advice may be sought from CASG Program Management CoE before an alternative software package is agreed.

[5] The CMS should also include Commonwealth activities that directly impact on the accomplishment of the Contract (eg, document reviews, Commonwealth attendance at testing, and the provision of GFF and GFE).

Specific attention is drawn to clause 3.2.3.5, which allows the Contractor to amend the Approved CMS without first obtaining Commonwealth Approval. This provides the Contractor with the flexibility to manage the Contract as contingencies arise. Nevertheless, this clause also recognises that the Contractor cannot amend the schedule without obtaining the Commonwealth's Approval, if the Commonwealth will be affected. This obligation on the Contractor means that, for projects that run into difficulties, the Commonwealth's rights and obligations are protected when the Contractor wishes to accelerate the schedule and if, for example, this would have significant resource implications for the Commonwealth. Coincident deliveries of multiple data items, for example, could significantly increase the workload for a Commonwealth project office with limited resources. Additionally, parallel testing activities in multiple locations could be problematic. For these reasons, clause 3.2.3.5 has been included to ensure that any changes effecting the Commonwealth can be addressed with the Contractor.

Drafter's Action: Clause 3.2.3.3 is to be amended to include the current version of Open Plan Professional. The clause may be amended, prior to Contract signature, to incorporate a different scheduling software package if agreed by the parties.

Related Clauses: TDR E-4 of the COT requests each tenderer to provide a draft CMS

Clause 2.5, Draft Data Items and Strategies included at Attachment K

Clause 3.2.4, Contract Work Breakdown Structure

Clause 3.2.5, Earned Value Management System

DID-PM-DEF-CMS defines requirements for the CMS.

Further Reading: Nil.

3.2.4 Contract Work Breakdown Structure

Status: Core

Purpose: To require the Contractor to submit a CWBS, and to manage the Contract in accordance with the Approved CWBS. The clause also establishes the conditions under which the CWBS may be amended.

Policy: Refer to policy description at clause 3.2 above.

Guidance: The CWBS provides the mechanism to integrate technical control with cost and schedule control for the Contract. It provides the integration framework for all Contract activities.

Although the Contractor develops the CWBS, the Commonwealth Representative must be able to review the proposed CWBS to ensure that it satisfies the Commonwealth's technical, as well as cost and schedule control objectives.

The CWBS consists of product elements and service elements. The product elements are usually decomposed by other products, as defined by the specification tree. The service elements, such as Project Management and Systems Engineering, are usually decomposed by other lower level service elements, as defined by the SOW, Contractor's plans and QMS. All products and services identified by the SOW must be contained within the CWBS.

To achieve integrated technical, cost and schedule control within a project:

a. the specification tree, which defines the products to be built and their interfaces at all levels within the product breakdown structure, must be traceable to the customer's originating requirements;

b. the kernel of the CWBS must consist of the hierarchy of the products defined by the specification tree;

c. costs and schedules must be associated with the products in the product structure such that each product in the hierarchy has an associated

specification, cost and schedule (thus, each product CWBS element can be considered as either an internal subcontract or an external subcontract to the organisation);

d. each CWBS element must have a corresponding CWBS dictionary entry, describing the total scope of work associated with that WBS element (noting that, for a product, this will include the specification for that product); and

e. the CWBS should be structured such that a single person or organisation can be held responsible for the delivery of any product or system, as defined by the specification tree.

The CWBS may require amendment during the course of the Contract. A proposed amendment of the CWBS at a level above the reporting level will require negotiation with the Commonwealth and a CCP to implement. However, it is important that the Contractor is able to amend the CWBS below the reporting level, without first seeking Commonwealth Approval. Clause 3.2.5.2.1 (EVMS, Reporting) establishes the reporting level of the CWBS. The amendments must be consistent with the Approved CWBS such that the integration of technical control with cost and schedule control, established by the Approved CWBS, is not compromised.

TDR E-3 requests each tenderer to provide a draft CWBS. A draft CWBS is a key deliverable in the tender because it assists to understand the tenderer's proposed scope of work and risk profile. If pre-contract work is planned, it is recommended that the CWBS be one of the deliverables that is developed. If not Approved at ED, drafters should include the draft CWBS in the Contract (refer clause 2.5) as a basis for development of the CWBS to be delivered under the Contract.

Drafter's Action: Clause 3.2.4 is to be included in the RFT without alteration.

Related Clauses: TDR E-3, Contract Work Breakdown Structure and Dictionary

Clause 2.5, Draft Data Items and Strategies included at Attachment K

Clause 3.2.3, Contract Master Schedule

Clause 3.2.5, Earned Value Management System

DID-PM-DEF-CWBS defines the requirements for the CWBS.

Further Reading: DEF(AUST)5664, *Work Breakdown Structure for Defence Materiel Projects*

3.2.5 Earned Value Management System

Status: Core

Purpose: To require the Contractor to manage the Contract in accordance with Earned Value Management (EVM) requirements, and to ensure that its PMB continues to accord with the Contract as changes to the Contract are Approved.

Policy: CASG Policy (PM) 003 *Earned Value Management tiered application to CASG Contracts*

DMH (PROJ) 11-0-005 *Earned Value System Review Handbook*

AS 4817-2006 *Project performance measurement using Earned Value*

Defence Supplement to AS 4817-2006

Guidance: CASG policy requires that an EVMS, complying with AS 4817-2006 and the *Defence Supplement*, be applied to contracts and subcontracts based on an assessment of strategic significance, value, risk and complexity. Contracts using the *ASDEFCON (Strategic Materiel)* template should fit this profile, as the basis for template selection, hence an EVMS is core for the Contract, and may be applicable to specific subcontracts (see clause 3.5.2).

Note that having an EVMS does not require Earned Value Payments to be included in the Contract.

TDR E-8.1 requires each tenderer to provide information that describes their EVMS, how it has been used, and the integration of Subcontractor data.

As per the note to tenderers before TDR E-1, the successful tenderer will be required to develop management plans during an ODIA or other pre-contract work. This would generally include developing a draft EVM Plan, which is informed by participation in an EVM Implementation Workshop with the Commonwealth. The topics discussed at the Implementation Workshop should include:

a. clarification of the EVMS requirements;

b. assessment of risks in the implementation;

c. familiarise the Commonwealth Representative with the proposed EVMS operation; and

d. Earned Value Performance Report (EVPR) reporting levels and variance analysis thresholds.

The draft EVM Plan developed pre-contract should be included at Attachment K (refer clause 2.5), to be updated to a final version shortly after the ED.

System Implementation

The Contractor is required to have a compliant EVMS in accordance with clause 3.2.5.1. The EVMS is to be established within an initial contract period specified by the drafter.

An IBR, held within an initial contract period, also specified by the drafter, is used to review the CWBS, CMS, PMB and to assess the earned-value techniques and measures to be used and reported against in the EVMS. The IBR is a MSR, conducted in accordance with the Approved System Review Plan (SRP), with criteria and review actions identified in MSR-CHECKLIST-IBR.

In order to assess that the EVMS is compliant, the Contractor is required to allow the Commonwealth Representative to review its EVMS, of which the Approved EVM Plan forms part thereof. When the Commonwealth is assessing the Contractor's EVMS, advice is available from Program Project Product Services, CASG Program Management Branch. The first EVMS review is to occur within an initial contract period specified by the drafter, with the Contractor allowing on-going EVMS reviews and System Assurance activities by the Commonwealth Representative. On successful completion of the EVMS review, the Commonwealth Representative issues a statement of Approval that the Contractor's EVMS meets the requirements of the Contract. An EVMS is assessed for an individual contract's needs, meaning that compliance has to be reassessed for each contract (ie, it is not transferable).

Reporting

The Commonwealth Representative should review the reports as the Contract progresses. Provision is made in clause 3.2.5.2.1 to establish the reporting level and in clause 3.2.5.2.3 for variance of the thresholds, which are reviewed and agreed as part of the MSRs.

Change Control

One of the challenging aspects of Contract management is to ensure that the PMB is maintained at the same status as the Contract. If CCPs are Approved without corollary changes to the PMB, the EVMS begins to lose utility. As such, it is imperative that the PMB and the Contract baseline remain aligned. Clause 3.2.5.3 establishes the obligation for the Contractor to maintain the PMB and defines timeframes within which the PMB must be updated after Approval of a CCP.

Drafter's Action: Drafters are required to insert the appropriate timeframes into the relevant clauses for the establishment of the EVMS (clause 3.2.5.1.3), conduct of the IBR (clause 3.2.5.1.4) and the initial EVMS review (clause 3.2.5.1.11).

Drafters need to insert default variance thresholds in the table at clause 3.2.5.2.2a. to specify thresholds for the EVPRs that suit the risk profile of the Contract. These

reporting parameters may be revised as a result of the Implementation Workshop. The CASG Program Management CoE should be consulted for further advice.

Clause 3.2.5.3, Change Control, is to be included in the RFT without alteration.

An Approved SRP is required for the conduct of the IBR. Drafters should consider the timing for the delivery of the SRP in the CDRL and the Commonwealth action period with respect to IBR. For example, a SRP delivered at ED+40, with 20 days for Commonwealth action, may not be Approved prior to the planned entry into an IBR held three months after ED (a minimal schedule).

Note that the MSR-CHECKLIST-IBR includes some checklist items that can be tailored by the Contractor within the Approved SRP.

Related Clauses: TDR E-8, Mandated Systems and Processes, sets out the tender requirements in relation to describing EVM systems and capability.

DID-PM-MGT-EVMP defines the requirements for the EVM Plan.

DID-PM-STAT-EVPR defines the requirements for the EVPR.

MSR-CHECKLIST-IBR details the entry, review and exit criteria for the IBR.

Further Reading: DMH (PROJ) 11-0-002 *Integrated Baseline Review Handbook*

DMH (PROJ) 11-0-004 *Earned Value Data Analysis Guide*

DMH (PROJ) 11-0-005 *Earned Value System Review Handbook*

3.2.6 Measurement and Analysis

Status: Core

Purpose: To require the Contractor to collect, analyse and report objective information using an agreed set of measures regarding issues of joint concern.

Policy: AS/NZS 15939:2013 (ISO/IEC 15939:2007) *Systems and software engineering - Measurement process*

Guidance: Clause 3.2.6 requires the Contractor to submit a Measurement Plan and to conduct the measurement program in accordance with that plan, once Approved.

Project and technical managers need objective information to make day-to-day decisions, correct problems, and manage risks. Measurement based on specific, objective information can address these needs by integrating measurement with existing risk-management and performance-management disciplines such as EVM.

The measurement program is designed to address information needs essential for informed decision-making and the active management of work under the Contract. Software-intensive programs, in particular, should benefit from a measurement program that provides specific information needs. For example, measurement of Software-development activities correlated and integrated with other programs such as EVM, can provide an accurate assessment of progress and status.

The CASG preferred method for implementing a measurement program is in accordance with AS/NZS 15939:2013. This methodology uses requires the parties to identify information needs and agree measures, as well as the techniques for collection, reporting and analysis of the measurement data. Commonwealth access to raw measurement data provides for Contractor-independent analysis to be performed to confirm the Contractor-provided analysis. For this (and other) reasons, Commonwealth Access provisions are included in the COC. These provisions are extended to Approved Subcontractors. Access to Subcontractor measurement data is often required in Software-intensive projects where the Subcontractor is developing the Software. The Commonwealth also needs to allocate sufficient resources (staff, tools and budget) to perform this analysis.

The cost of collecting, reporting and analysing measurement data needs to be defined and agreed prior to finalising the Contract. This can be done with one or

more preferred tenderers (including significant Subcontractors) by conducting measurement workshops, either separately or as part of a risk workshop, during ODIA or other pre-contract work. Additional workshops should be planned at key stages (eg, at MSRs) to revise the measures and to assess the effectiveness of the measurement program. This requirement has been included in the exit criteria of the checklists for relevant MSRs. TDR E-1.3 requires tenderers to describe their intended measurement program as part of the Systems Engineering Strategy.

In accordance with the Approved Measurement Plan, measurement data must be converted into indicators that relate to project information needs, to be useful for effective decision-making. Analysis of data from diverse areas of interest needs to be integrated with risk and financial performance management, to form coherent information from which conclusions can be drawn and decisions made.

Drafter's Action: Clause 3.2.6 is to be included in the RFT without alteration.

Measurement workshops are to be facilitated by a qualified trainer and facilitator. Contact the CASG Engineering and Technical CoE for advice with regard to the planning and conducting of a measurement workshop.

Related Clauses: TDR E-1.3 elicits details from tenderers in relation to Technical Performance Measures and the measurement program for Software development.

Clause 3.2.5, Earned Value Management System

Clause 11.7 of the COC, Commonwealth Access

Annex D to the SOW, MSR Checklists

DID-PM-MEAS-MEASP defines the requirements for the Measurement Plan.

Further Reading: AS/NZS 15939:2013 *Systems and software engineering - Measurement process*

3.2.7 Process Improvement

Status: Optional. To be included when process weaknesses are identified during tender evaluation and a process-improvement program is to be included in the resultant Contract. Note that in recent years this clause has not been used often.

Purpose: To require the Contractor to undertake process improvement activities to address identified process weaknesses.

Policy: Nil

Guidance: Clause 3.2.7 places an obligation on the Contractor to apply process improvements to processes determined to represent risk to Contract success. The activities to be performed are documented in a Process Improvement Plan (PIP).

Predictable product quality is largely dependent on the processes used to produce the product. The Capability Maturity Model Integration (CMMI®) provided a useful benchmark to assess the process capability of Contract consortia (ie, the Commonwealth Representative, Contractor and Subcontractors) and to identify risks to a predictable and successful Contract outcome, particularly for software-intensive projects. However, in recent years has been used less often.

CASG policy requires that process capability be assessed against the needed process capability and that identified weaknesses be addressed through corrective action. Therefore, during development of the Acquisition Strategy and acquisition planning, consideration should be given to employing CMMI appraisals to assess the process capability of tenderer consortia in selecting a preferred tenderer. Where a tenderer consortium is involved, it may be beneficial to conduct appraisals of the various organisations involved in the consortium in the process areas key to their role within the consortium.

The cost of performing CMMI appraisals is high and so the need to apply them on multiple tenderer consortia will be reserved for only very high-value and / or high-risk software-intensive contracts. Where process capability is not a discriminator in

selecting a tenderer consortium, but the Contract is software-intensive, CMMI Appraisals should still be performed prior to Contract signature.

This clause may be deleted where a process assessment (ie, CMMI appraisal or other assessment technique) is not intended, given a low Contract risk / value. It may also be deleted or tailored where no significant process weaknesses are identified during tender evaluation.

As some tenderers may have recently completed CMMI appraisals, another appraisal may not be necessary if their response provides adequate details of the prior assessment. Identifying process weaknesses early allows corrective action to be taken in support of the contract schedule. Where significant weaknesses are identified in a tenderer consortium's capability, either through tender response evaluation or through the conduct of CMMI appraisals during pre-contract work, a process improvement program is defined and agreed with the tenderer to improve these processes before they are applied in earnest under the Contract. The tenderer documents the agreed process improvement program in a PIP, which is then reviewed and agreed prior to ED. The agreed process improvement program is then incorporated into the Contract as part of the Contractor's scope of work through the SOW.

During Contract surveillance, progress against the PIP is monitored and verified in the same way as other Contractor activities. The PIP should provide for follow-up CMMI appraisals to be conducted at set points in the process improvement program to verify the process capability achieved through the PIP activities. Consideration should be given to associating remedies or incentives under the Contract for non-performance against the PIP to ensure the Contractor treats the process improvement program seriously and responsibly.

Given that the success of the project is also dependent on the acquisition processes applied by the Commonwealth Representative, consideration should also be given to including the Commonwealth Representative as part of the preferred tenderer consortium appraisal. This will provide an objective assessment of the ability of the overall project organisation (ie, the Commonwealth Representative, Contractor and Subcontractors) to predictably deliver the project outcomes successfully.

CMMI appraisals require competencies not normally found in a Commonwealth project office and, therefore, their planning and scheduling needs to be done in collaboration with the CASG Chief Systems Engineer Branch.

Drafter's Action: Where the conditions identified in the above guidance are applicable, clause 3.2.7 is to be included in the RFT without alteration. Drafters should also review TDR E-1.3, Systems Engineering Strategy.

Related Clauses: TDR E-1.3, Systems Engineering Strategy.

DID-PM-MGT-PIP defines the requirements for the Process Improvement Plan.

Further Reading: *Carnegie Mellon, Software Engineering Institute website* *http://cmmiinstitute.com/*

3.3 Monitoring and Control

Status: Core

Purpose: To require the Contractor to submit regular status reports.

Policy: Nil

Guidance: Contract progress and status reports provide the primary mechanisms for the Commonwealth to monitor Contractor performance. Contract Start Up Progress Reports (CSUPRs) enable the Commonwealth to monitor the Contractor's progress in the crucial establishment of the Contract team and infrastructure, while Contract Status Reports (CSRs) enable the Commonwealth to monitor the Contractor's progress throughout the duration of the Contract.

Where unsatisfactory progress under the contract is notified to the Contractor by the Commonwealth, the Contractor is obligated to advise corrective measures and results in future progress reports.

Drafter's Action: Clause 3.3 is to be included in the RFT without alteration.

Related Clauses: Clause 3.5.3, Subcontractor Monitoring and Control

DID-PM-START-CSUP defines the requirements for the Contract Start Up Plan and the Contract Start Up Progress Report.

DID-PM-STAT-CSR defines the requirements for the CSR.

DID-PM-STAT-EVPR defines requirements for the EVPR.

Further Reading: Nil

3.4 Key Persons Management

Status: Core

Purpose: To ensure that the Contractor's staff positions that are critical to the success of the Contract are identified, together with the skills and experience required, and that appropriately qualified and experienced Key Persons fill these positions.

Policy: Nil

Guidance: No single factor will affect the outcome of a Contract more than the skills and experience of the people involved. Having people with the appropriate skills and experience will minimise Contract risk.

Key Staff Positions are positions that require highly specialised skills or capabilities that are crucial to the success of the Contract. This includes capabilities for which there is an industry-wide shortage. Key Staff Positions would normally include the Project Manager, Systems Engineering Manager, Software Development Manager (for Contracts with significant Software development), ILS Manager, and key domain experts such as radar design engineers, IT system architects, and safety experts.

As specified in clause 3.4.1, the Contractor will document Key Staff Positions in the PMP. The Contractor should identify:

a. staff positions critical to the success of the Contract (Key Staff Positions);

b. the duties and responsibilities of those staff positions; and

c. the skills and experience needed by the persons filling these staff positions.

Key Persons are the personnel identified in the PMP that fulfil Key Staff Positions. Commonwealth Approval rights over the PMP and acceptance or non-acceptance of replacement Key Persons under clause 3.6 of the COC, provide a measure of influence over the Contractor's selection of Key Persons. Commonwealth project officers should plan to discuss Key Persons and Key Staff Positions during contract negotiations to ensure that the Commonwealth can review the suitability of Key Person candidates prior to Contract signature. Following Approval of the PMP, any change to Key Persons would result in an update to the PMP.

Drafter's Action: Clause 3.4 is to be included in the RFT without alteration.

Related Clauses: TDR E-5 Key Staff Positions

Clause 3.6 of the COC, Key Persons

DID-PM-MGT-PMP defines the requirements for the PMP, including the Key Staff Positions and the Key Persons.

Further Reading: Nil

3.5 Subcontractor Management

Status: Core

Purpose: To ensure that effective Subcontract management practices are implemented.

Policy: Nil

Guidance: Effective Subcontractor management and the provision of insight into Subcontractor activities and management practices is one of the philosophies underpinning the *ASDEFCON* materiel acquisition and support templates. This approach is consistent with international standards.

To enable planning and reporting requirements to be satisfied, which have been placed on the Contractor by other clauses of the SOW, it is necessary that the Contractor flows on similar requirements to Approved Subcontractors.

Additionally, to enable the Contractor to meet its EVM reporting requirements, appropriate planning and reporting requirements need to be flowed down to Approved Subcontractors.

Clauses in the COC also require the flow-down of Commonwealth requirements to Approved Subcontractors, for example: IP rights, Commonwealth access, security and WHS.

Drafter's Action: Refer to subclauses.

Related Clauses: Clause 11.7 of the COC, Commonwealth Access

Clause 11.9 of the COC, Subcontracts

Attachment H, Schedule of Approved Subcontractors

Further Reading: Nil

3.5.1 Subcontractor Planning

Status: Core

Purpose: To require the Contractor to flow down requirements to Approved Subcontractors to develop a PMP, and manage their Subcontracts in accordance with that plan.

Policy: Refer to policy description for clause 3.2.

Guidance: Subcontractor planning is just as important as detailed planning of each WBS element for the Contractor. This planning will generally extend to the development of a Subcontract PMP, a Subcontract Schedule and a Subcontract WBS. In some cases, the Contractor may require a Subcontract Start Up Plan. The Contractor is required to ensure that the Approved Subcontractors execute their Subcontracts in accordance with their own management plans.

Drafter's Action: Clause 3.5.1 is to be included in the RFT without alteration.

Related Clauses: Clause 3.2.5, Earned Value Management System

DID-PM-MGT-PMP includes planning requirements for Subcontracts

Further Reading: Nil

3.5.2 Subcontractor Earned Value Management Requirements

Status: Core

Purpose: To require a Subcontract EVMS to be developed and maintained, where the significance, value, risk and complexity of the Subcontract warrants an EVMS.

Policy: CASG Policy (PM) 003, *Earned Value Management tiered application to CASG Contracts*

AS 4817-2003 *Project performance measurement using Earned Value*

Defence Supplement to AS 4817-2003

Guidance: Where a Subcontractor is required to develop an EVMS, the Contractor is responsible for the review and acceptance of the Subcontract PMB and EVMS. The Contractor is required to ensure that the Subcontractor's PMB remains valid and undertakes regular System Assurance activities to ensure that the Subcontractor's EVMS remains compliant. The Contractor should allow the Commonwealth Representative to participate in these reviews if requested.

For advice regarding the application of EVMS requirements to Subcontracts, contact the CASG Program Management CoE.

Drafter's Action: Clause 3.5.2 is to be included in the RFT without alteration.

Related Clauses: Clause 3.2.5, Earned Value Management System

TDR E-8.1 requires tenderers to describe their EVMS capability, including Subcontractor performance data integration.

Further Reading: DMH (PROJ) 11-0-002 *Integrated Baseline Review Handbook*

DMH (PROJ) 11-0-004 *Earned Value Data Analysis Guide*

DMH (PROJ) 11-0-005 *Earned Value System Review Handbook*

3.5.3 Subcontractor Monitoring and Control

Status: Core

Purpose: To require the Contractor to ensure that Approved Subcontractors perform monitoring and control activities and implement corrective actions if required.

Policy: Nil

Guidance: The Contractor must ensure that Approved Subcontractors have appropriate progress monitoring processes in place so that Approved Subcontractor performance is reported to the Commonwealth. This may include the Approved Subcontractor reporting data identified in the Approved Measurement Plan.

Where Approved Subcontractor performance deviates from plans, the Contractor is required to react and ensure that the Approved Subcontractor implements corrective actions as required.

Drafter's Action: Clause 3.5.3 is to be included in the RFT without alteration.

Related Clauses: Clause 3.3, Monitoring and Control

Further Reading: Nil

3.5.4 Subcontract Status Reporting

Status: Core

Purpose: To require the Contractor to ensure that Approved Subcontractors produce status reports and report that status to the Commonwealth.

Policy: Nil

Guidance: Subcontract status reports provide a mechanism for the Contractor to monitor Approved Subcontractor performance. The Contractor is required to include Subcontractor Status Report information in CSRs, to give the Commonwealth visibility of Approved Subcontractor performance.

Drafter's Action: Clause 3.5.4 is to be included in the RFT without alteration.

Related Clauses: Clause 3.3, Monitoring and Control

DID-PM-STAT-CSR defines the requirements for the CSR

DID-PM-STAT-EVPR defines the requirements for the EVPR

Further Reading: Nil

3.6 Risk Management

Status: Core

Purpose: To require the Contractor to define a risk management process within the PMP, for Approval by the Commonwealth Representative, and to manage the Contract risks in accordance with the Approved PMP.

Policy: DMI (PROJ) 11-0-005, *Project Risk Management*

DMM (PROJ) 11-0-002, *Project Risk Management Manual*, Sections 2, 6 and 7

Guidance: Risk management is defined as 'minimising the uncertainty in any outcome'. For examples of sources of risk during the Contract, see section 7.2 of the *Project Risk Management Manual* (PRMM). For an overview of managing risk in Defence materiel projects, refer to section 2 of the PRMM.

Clause 3.6 requires a formal risk management process to be defined and applied; however, uncertainty and risk are controlled by a number of different processes and factors; for example, MSRs, Key Persons provisions and access provisions. As such, risk management should be considered through a range of mechanisms in the Contract, not just clause 3.6.

The PMP identifies how the Contractor will manage risks and describes the control mechanisms that will be put in place. The risk management process described in the PMP is to be consistent with AS/NZS ISO 31000:2009 *Risk Management – Principles and Guidelines*, The PMP may identify generic risk areas; however, individual risks are to be documented in the Risk Register, not the PMP.

The Risk Register is not delivered as an independent data item. The top risks are reported to the Commonwealth through the CSR and addressed at reviews – the Risk Register is intended as the source for these other reporting and review mechanisms. The Contractor is required to provide the Commonwealth with access to the Risk Register on an on-going basis. Including the Risk Register in the DMS is an effective way of providing this access (refer clause 2.3).

The Contractor's PMP and Risk Register provide input into the Commonwealth's own project risk management process.

Drafter's Action: If a DMS will be required for the Contract, then the optional clause for on-going access to the Risk Register can be deleted, after ensuring that the Risk Register is included in the list of DMS Contract Data under clause 2.3.1. Otherwise, clause 3.6 is to be included in the RFT without alteration.

Related Clauses: TDR E-7, Risk Assessment and Risk Register

Clause 2.3.2, General Requirements, to include the Risk Register on the DMS

DID-PM-MGT-PMP defines requirements for risk management planning, including requirements for the Risk Register.

DID-PM-STAT-CSR required CSRs to report the top risks from the Risk Register.

Further Reading: AS/NZS ISO 31000:2009 *Risk Management – Principles and Guidelines*

DMM (PROJ) 11-0-002 *Project Risk Management Manual*

3.7 Issue Management

Status: Core

Purpose: To require the Contractor to manage Issues in accordance with the Approved PMP.

Policy: Nil

Guidance: As defined in the Glossary, Issues are items whose progress needs to be monitored and managed. Issues are not included in the EVM plans because they are either too short-term or too insignificant, and they do not appear in the Risk Register because they are not risks. Typical Issues include:

a. action items from meetings;

b. corrective actions;

c. issues arising from the metrics collection and analysis;

d. issues arising from deviation of progress against plan;

e. issues arising from reviews of process application; and

f. issues arising from correspondence.

Issues may be raised by the Commonwealth, Contractor, or Subcontractors, and depending on the nature of an Issue a different party may be required to manage or resolve it. For example, an Issue raised in a meeting by the Contractor may be assigned to the Commonwealth to obtain information from a Defence stakeholder.

The Commonwealth Representative does not need visibility of all Contract Issues; however, the Commonwealth Representative will need visibility of Issues that the Commonwealth is involved in resolving and must be confident that there is a process in place to address other Issues in a timely manner.

The PMP will describe the Contractor's processes and tools used for managing Issues, including how the Contractor will track Issues using an Issues Register and how Issues will be allocated for action. Including the Issues Register in the DMS is an effective way of providing access for all parties (refer clause 2.3).

Drafter's Action: If a DMS will be required for the Contract, then the optional clause for on-going access to the Issue Register can be deleted, after ensuring that the Issue Register is included in the list of DMS Contract Data under clause 2.3.1. Otherwise, clause 3.7 is to be included in the RFT without alteration.

Related Clauses: DID-PM-MGT-PMP defines the requirements for documenting a process to manage Issues, including use of the Issue Register.

Clause 2.3.2, General Requirements, to include the Issue Register on the DMS.

Further Reading: Nil

3.8 Maintenance of Contractual Documents

Status: Core

Purpose: To require the Contractor to apply strict configuration control to Contract and Subcontract documents.

Policy: *Complex Procurement Guide*, Chapter 7

Guidance: There is always a need to be able to produce an up-to-date, readable version of 'today's Contract'. There is also a need to be able to produce a clean, readable version of the Contract from any previous time.

There have been instances where it has not been possible to produce a copy of a required version of a contract because the approach to contract amendment was inadequate. Attaching contract change notices to the original contract is inadequate and has led to later changes unknowingly affecting previous changes.

Drafter's Action: Refer to subclauses.

Related Clauses: Nil

Further Reading: Nil

3.8.1 Configuration Management of the Contract

Status: Core

Purpose: To ensure that a clean, complete copy of any version of the Contract, now or at any previous time, can be produced as needed.

Policy: Nil

Guidance: This clause obligates the Contractor to maintain a configured copy of the Contract, which incorporates all approved Contract Change Proposals, and to maintain an archive of all superseded versions of the Contract.

It should be noted that the requirement for the Contractor to maintain the configuration of the Contract does not remove the need for the Commonwealth to do the same.

Drafter's Action: Clause 3.8.1 is to be included in the RFT without alteration.

Related Clauses: Clause 11.1 of the COC, Change to the Contract

Further Reading: Nil

3.8.2 Subcontract Configuration Management

Status: Core

Purpose: To ensure that a clean copy of any version of any Subcontracts, now or at any previous time, can be produced as needed.

Policy: Nil

Guidance: The same reasons for maintaining the configuration of the Contract apply to Subcontracts. This clause ensures that the Contractor maintains Subcontract documents with the same rigour as maintaining Contract documents.

Drafter's Action: Clause 3.8.2 is to be included in the RFT without alteration.

Related Clauses: Clause 11.9 of the COC, Subcontracts

Further Reading: Nil

3.9 Customer Liaison

Status: Core

Purpose: To require the Contractor to conduct regular progress meetings, extraordinary meetings and Contract performance reviews.

Policy: Nil

Guidance: Regular, formal meetings between the Commonwealth and the Contractor enables communication and assists the Commonwealth in monitoring Contractor progress.

Commonwealth project officers attending meetings should be wary of making any commitments that could estop the Commonwealth or that should be Contract variations.

As the Contractor is required to produce agendas for meetings, it is important that any Commonwealth agenda items are advised to the Contractor in advance and be given the necessary time at the meeting.

Similarly, as the Contractor is required to produce the minutes for meetings, it is important that the Commonwealth thoroughly review the minutes before Approval to ensure that the outcomes of the meeting are correctly recorded. This may require Commonwealth staff to take detailed notes during the meetings for subsequent comparison with the draft minutes.

Agenda and minutes should be produced in accordance with the relevant DID.

Drafter's Action: Refer to subclauses.

Related Clauses: DID-PM-MEET-AGENDA defines requirements for meeting agenda

DID-PM-MEET-MINUTES defines requirements for meeting minutes

Further Reading: Nil

3.9.1 Progress Meetings

Status: Core

Purpose: To require the Contractor to conduct regular progress meetings and to establish the process for the conduct of the meetings.

Policy: Nil

Guidance: Regular progress meetings facilitate communication between the parties and enable the Commonwealth to monitor the progress of the Contract. The interval at which meetings are held is a trade-off between the cost of holding the meetings and the risk of delayed reaction to issues that arise between meetings. Progress meetings should be held every three months at a minimum, and more often if considered necessary.

Progress meetings are generally held at the Contractor's premises as this will most likely keep travel costs to a minimum and allow for 'side meetings' with members of the Contractor's team, if required.

Drafter's Action: Clause 3.9.1 is to be included in the RFT without alteration, except to edit the frequency of the progress meetings if required.

Related Clauses: Clause 3.9.2, Extraordinary Meetings

Clause 3.9.3, Contract Performance Reviews

Further Reading: Nil

3.9.2 Extraordinary Meetings

Status: Core

Purpose: To establish the process for the conduct of extraordinary meetings.

Policy: Nil

Guidance: An extraordinary meeting is one that is not scheduled but may be called by the Commonwealth or the Contractor when necessary. The clause details the responsibilities of each party when an extraordinary meeting is called. When agreeing to the location for an extraordinary meeting, the nature of the issue to be discussed, the requirements for preparation and delivery of associated information, and Contractor and Commonwealth travel budgets, all need to be considered.

Drafter's Action: Clause 3.9.2 is to be included in the RFT without alteration.

Related Clauses: Clause 3.9.1, Progress Meetings

Clause 3.9.3, Contract Performance Reviews

Further Reading: Nil

3.9.3 Contract Performance Reviews

Status: Core

Purpose: To require the Contractor to conduct regular Contract Performance Reviews.

Policy: Nil.

Guidance: Contract Performance Reviews provide the opportunity for Commonwealth and Contractor organisations to step back from the day-to-day issues and assess how the Contract is progressing, and how well both parties are performing their roles. The inclusion of this review in the SOW recognises that a successful outcome is dependent on the performance and behaviour of all parties to the Contract. The review should identify the strengths and weakness (ie, what is working well and what could be improved) of the individual parties as well as both parties as a team. It should also address the working relationship between the parties and therefore, may involve senior management from each organisation not involved in the Contract. The discussion should examine areas where changes can be implemented to the benefit of both parties and the desired Contract outcomes.

The review can be used to discuss the proposed Defence Company ScoreCard scoring of the Contractor and to hear any explanations or rebuttals from the Contractor.

Contract Performance Reviews should be conducted with the aim of improving Contract performance. Where poor performance is an issue, attendance by only senior management not directly involved in the Contract may be appropriate, until performance improves.

The CSR reports on Contract status and informs the Contract Performance Review by linking the submission of the CSR to the Contract Performance Review within the CDRL.

Drafter's Action: Clause 3.9.3 is to be included in the RFT without alteration.

SOW Annex C, CDRL, may be tailored to synchronise CSR delivery with Contract performance reviews.

Related Clauses: Clause 3.9.1, Progress Meetings

Clause 3.9.2, Extraordinary Meetings

Further Reading: Nil

3.10 Independent Verification and Validation

Status: Optional. To be included when the Commonwealth requires the services of an IV&V agent to perform specific duties on behalf of the Commonwealth.

Purpose: To require the Contractor to provide support to any IV&V agent appointed by the Commonwealth.

Policy: DMH (ENG) 12-5-001, *Defence Materiel Verification and Validation Guide*

Guidance: IV&V involves the use of an independent party (referred to as an IV&V agent) to perform particular verification activities in addition to, or instead of, the Contractor. The IV&V agent may be a separate Commonwealth agency, such as the intended support agency, or an IV&V Contractor. The IV&V agent is usually engaged to perform activities selected by the Commonwealth Representative based on the nature of the Contract deliverables, the capability of the Contractor, and the required integrity of the system. The IV&V activities may vary from the review of Contractor work products (eg, specifications, designs, analysis, test results) through to, in extreme cases, totally independent testing of the system.

Depending on the complexity of Contract work and the level of involvement of Subcontractors, in order for the IV&V agent to gain access to all of the information needed, it may be necessary for appropriate levels of access to be provided to Approved Subcontractors. For this (and other) reasons, access provisions in the COC (clause 11.7) are extended to Subcontractors, so that the Commonwealth Representative, or a person authorised by the Commonwealth Representative, can have access to the Approved Subcontractors' premises and records relating to the performance of work. Nevertheless, COC clause 11.7 has not been drafted from the perspective of the (often) extensive and intrusive access required to undertake IV&V.

As such, drafters should consider the use of a tripartite deed if significant Subcontractor IV&V is envisaged or, perhaps, should include appropriate flow-down provisions within SOW clause 3.10. Guidance should be sought from CASG ASDEFCON Contracting Initiatives Directorate if either of these options is being considered. Subject matter expertise may be sought to define the scope of IV&V.

IV&V, while expensive, increases confidence in a system's integrity. It should be used for large, complex, software-intensive development programs and those where specific skills or program aspects warrant independent expert attention.

For the Contractor, having to deal with an IV&V agent can result in additional costs although these should not be excessive and largely involve the provision of access to Technical Data and staff for the IV&V agent. In order to accurately cost the support to be provided, the Contractor will need to understand the scope of the IV&V agent's work, where, when and how often access to Contractor data and staff will be required and any other effort or support required by the Contractor, such as the provision of office accommodation and business utilities. It is also very important to define the issue resolution process to be applied when addressing issues raised by the IV&V agent.

Drafter's Action: Drafters are to specify the scope of IV&V activities, either within the SOW or an SOW Annex developed for this purpose. As identified in the SOW note to drafters, if the scope is unknown, then a fixed level of effort for IV&V should be stated in order to establish a cost baseline.

Drafters are to assess the requirement for a tripartite deed (refer to the note to drafters in COC clause 11.7) or for flow-down requirements to be included within clause 3.10.

Related Clauses: Clause 11.7 of the COC, Commonwealth Access

Further Reading: Nil

3.11 Life Cycle Cost

Status: Core

Purpose: To require the Contractor to undertake LCC Analysis (LCCA) and to integrate this with the Contractor's decision-making processes for the development of the Mission System and Support System to improve the likelihood that the Materiel System solution will minimise LCC for the Commonwealth.

Policy: *Commonwealth Procurement Rules*, paragraphs 4.5 and 4.6

DEFLOGMAN Part 2 Volume 10 Chapter 16, *Life Cycle Costing Analysis*

Guidance: Defence policy requires LCCA to be applied throughout the life-cycle of a Materiel System to inform management decisions and achieve value-for-money outcomes. Well-informed decisions during design and development can significantly reduce through life support costs.

The LCC clauses in *ASDEFCON (Strategic Materiel)* (including requirements in the COT, TDR D-9 and TDR E-1.7) acknowledge the complexities associated with applying LCCA, including to scope activities to explore options that reduce LCC.

As many LCC-reduction opportunities only arise during Commonwealth requirements setting and the Contractor's developmental activities, there is limited scope for a tenderer to include an analysis of these opportunities, and to incorporate these opportunities into its tendered proposal (remembering that, under a firm priced contract, the scope is fixed for the agreed price). Therefore, the majority of LCC-reduction opportunities that arise under the Contract are likely to require a change and, therefore, CCP action. The CCP will cover both significant investigative activities and resulting changes to the delivered Supplies (this will almost certainly be the case for significant LCC-reduction opportunities).

Where the Commonwealth has specific requirements or solution options to be considered, which could not be resolved before ED, the Commonwealth can require that the Contractor undertake Commonwealth-directed trade studies where the objective is a reduction in LCC. For other trade studies, the effect that the options considered have on forecast LCC is usually a primary evaluation criterion.

Many costs associated with the operation and support of the Mission System and Support System will not be within the purview of the Contractor. Existing elements of these systems (eg, Government Furnished Equipment (GFE) and Government Furnished Services (GFS)) may also be outside the control of the Contractor (Support) or Subcontractors (Support), and deployed assets (eg, ships at sea) will have operational maintenance performed by ADF personnel. Commonwealth project staff need to ensure that all relevant costs are included in the scope of the Contractor's LCCA (refer definition of LCC in the Glossary), and this will require Commonwealth staff to provide LCC-related cost data to the Contractor when required. These data requirements should be included in the lists of Government Furnished Information (GFI) and Government Furnished Data (GFD) attached to the Contract.

The template recognises that a well-managed LCC program, which is integrated into the Contractor's developmental activities, involves trade-off decisions:

a. between the Mission System and the Support System;

b. between the acquisition Contract and any support Contract(s);

c. between the costs to be borne by the Commonwealth, the Contractor, the Contractors (Support) and the Subcontractors (Support); and

d. spanning the disciplines of Systems Engineering and Integrated Logistics Support.

The level and significance of possible trade-offs means that decisions affecting LCC need to be addressed at the project-management level. For this reason, and because the Total Cost of Ownership (TCO) of a Capability is a program-level responsibility, the LCC clause is located within the project-management clause.

Guidance: See guidance for subclauses.

Drafter's Action: Refer to subclauses.

Related Clauses: TDR D-9, Life Cycle Cost Model

TDR E-1.7, Strategy for Defining and Reducing the Total Cost of Ownership

Clause 2.5, Draft Data Items and Strategies included at Attachment K

Clause 2.6, Commonwealth-Directed Trade Studies

Clause 4.6.1, Growth, Evolution and Obsolescence Program

Clause 5.1.1, ILS Program Objectives

Further Reading: *Defence Cost and Schedule Estimation Manual*

Refer to the Program Management Branch, Cost Estimation Services intranet site for additional references.

3.11.1 Life Cycle Cost Program Management

Status: Core

Purpose: To require the Contractor to plan the LCCA program and enable Commonwealth insight and the coordination of Commonwealth-provided inputs.

Policy: DEFLOGMAN Part 2 Volume 10 Chapter 16 *Life Cycle Costing Analysis*

Guidance: Clause 3.11.1 places an obligation on the Contractor to develop and maintain an LCC Management Plan (LCCMP), and to conduct the LCC program in accordance with the Approved LCCMP.

Note that the preferred tenderer's response to TDR E-1.7, Strategy for Defining and Reducing the Total Cost of Ownership, should be the basis for the LCCMP. If an ODIA or pre-contract work is programmed then the LCCMP may be developed in that phase, so that it can be Approved by ED or placed on Contract and updated using clause 2.5, Draft Data Items and Strategies included at Attachment K.

The DID for the LCCMP (DID-PM-LCC-LCCMP) requires a number of specific elements that are critical to the success of the LCC program, including:

a. the integration of LCCA activities into the SE and ILS programs;

b. integration of Subcontractors into the LCC program (particularly if major elements of ILS and related activities are to be Subcontracted);

c. the LCC tools and models to be used, and Commonwealth access to them;

e. the scope of extant LCC-related data, and the LCC-related data that may have to be provided by the Commonwealth;

f. the scope of LCCA activities that are planned to be undertaken by the Contractor including the scope of, and risks associated with, the development of the LCC model(s); and

g. the planned use of the LCC model(s), and associated analyses, in the design and development process of the Materiel System, aiming to minimise LCC while meeting the other requirements of the Contract.

Specific note should be made of DID-PM-LCC-LCCMP clause 6.2.5, LCC Model Usage, and DID-PM-LCC-LCCRM, the LCC Report and Model (LCCRM), clause 6.2.4, Integration of the LCC Analysis Outcomes into the Developmental Program. These two clauses work together, as required by SOW clauses 3.11.2.2f and 3.11.3.1a, to define the scope of the Contractor's LCCA activities that are additional to the specific activities defined in the SOW.

Minimisation of LCC has the potential to be an unbounded process, where effort can also become subject to the law of diminishing returns. As such, the LCCMP needs to document the agreed bounds within which the Contractor will demonstrate that LCC has been minimised. These bounds could be defined by limiting the scope of the Contractor's activities to only include:

a. the top ten LCC drivers;

b. those LCC drivers that have the potential to reduce LCC by more than $'x'm or 'y'% of the assessed LCC;

c. some combination of the above; or

d. another approach agreed between the Contractor and Commonwealth.

As stated above, the DID for the LCCMP requires the Contractor to document how the results of LCCA will be fed into design-and-development processes for both the Mission System and the Support System. LCCA is not an end in itself, and it has no purpose if the outcomes are not used to influence the design and development of the two systems, including for trade-off analyses between the two systems.

Another challenge with LCCA is to determine those design changes, arising out of LCCA and related activities, that can reasonably be considered to be within the scope of the Contract and those that should be subject to CCP action, as defined in clause 3.11.3.5.

Drafter's Action: Clause 3.11.1 is to be included in the RFT without alteration.

Drafter's should also review COT TDR E-1.7 for tendered strategy requirements.

Related Clauses: All other subclauses within clause 3.11.

DID-PM-LCC-LCCMP defines requirements for the LCC Management Plan.

Further Reading: Refer to Further Reading under the guidance for clause 3.11.

3.11.2 Life Cycle Cost Modelling and Analysis

Status: Core

Purpose: To require the Contractor to undertake LCC modelling and analysis consistent with the Mission System and Support System definition, design and implementation activities.

Policy: DEFLOGMAN Part 2 Volume 10 Chapter 16 *Life Cycle Costing Analysis*

Guidance: Clause 3.11.2 places an obligation on the Contractor to develop an LCC model in accordance with the Approved LCCMP, and use the model to analyse design options for solutions that minimise LCC. The Contractor is required to document both the model and the outcomes of its analyses in the LCCRM (in clause 3.11.3).

COT TDR D-9 requires each tenderer to submit a Tender LCC Model (TLCCM) and, as initial analysis, to describe potential alternatives for either the Mission System or Support System (or both) that reduce LCC. This clause envisages that reasonable alternatives will be investigated further during pre-contract work or under the Contract. If under the Contract, the LCCMP should capture this activity.

Clause 3.11.2.1 requires the Contractor to use a Defence-endorsed LCC tool, or an alternative Approved by the Commonwealth Representative. Attention is drawn to the policy, which provides information regarding Defence-endorsed LCC software packages. If a tenderer proposes an alternative LCC software package, the Commonwealth Representative should liaise with Cost Estimation Services before making a decision.

Clause 3.11.2.2 requires the Commonwealth to provide Commonwealth cost data as GFI if requested by the Contractor for the purpose of populating the LCC model and conducting the analysis activities described under clause 3.11.2.3.

Drafter's Action: Clause 3.11.2.1 requires the drafter to insert a Defence-preferred LCC tool. Alternatively, the note to drafters could be changed into a note to tenderers if the Defence wanted tenderers to proposals the tool. If tenders are received with alternative LCC software packages that are acceptable to the Commonwealth, then the alternative may be incorporated into clause 3.11.2.1 prior to ED.

Drafters must review COT TDR D-9 and TDID-FIN-LCC-TLCCM for the TLCCM.

Related Clauses: All other subclauses within clause 3.11.

Further Reading: Refer to Further Reading under the guidance for clause 3.11.

3.11.3 Life Cycle Cost Program Reviews and Reports

Status: Core

Purpose: To require the Contractor to review and report the progress of the LCC program.

Policy: DEFLOGMAN Part 2 Volume 10 Chapter 16 *Life Cycle Costing Analysis*

Guidance: Clause 3.11.3 places an obligation on the Contractor to use the LCC model to demonstrate that development activities will result in a Materiel System solution that minimises LCC. Clause 3.11.3.1 requires the Contractor to demonstrate their progress at MSRs. The operational and support concepts within the OCD provide a frame of reference within which LCC is to be demonstrated as being minimised. The OCD documents the purpose of the Capability, and LCC needs to be minimised within the context of achieving 'fitness for purpose'.

Clause 3.11.3.2 requires development and delivery of a LCC report that includes LCC model data, in accordance with DID-PM-LCC-LCCRM. This data item has

multiple deliveries, defined in the CDRL, to reflect decisions and provide increasing levels of detail as the designs for the Mission System and Support System mature.

Clause 3.11.3.3 directly interacts with the requirements of clause 6.2.4.2 of DID-PM-LCC-LCCRM and are intended to identify design alternatives that transfer costs between acquisition and support. As many internal Defence support costs may not be within the Contractor's design scope, the Commonwealth needs to be aware of any proposal that results in a cost transfer. Furthermore, the Commonwealth has an obligation to ensure that these 'external' costs are incorporated into the LCC analyses and used in trade-off decisions. These requirements can be quite subtle. For example, a communications solution that does not address full bandwidth requirements is likely to drive costs onto the Commonwealth in areas such as satellite, landline and spectrum-management fees (if the Commonwealth is responsible for these costs).

Clauses 3.11.3.2 – 3.11.3.5 describe the process for reviewing and approving any proposals to minimise LCC. In general, the timeframes for approving any proposal has been aligned with MSRs for a decision during the MSR – this is deliberately tight to prevent schedule slippage due to extended deliberations. Nevertheless, certain proposals could require a significant change in scope and higher committee (or even Government) consideration. In these situations, clause 3.11.3.4b allows parties to agree to an alternative timeframe. Nevertheless, timeframes need to be kept tight to enable cost-effective decision-making without causing delay to the Contractor's design process.

Drafter's Action: Clause 3.11.3 does not normally require tailoring unless Support System needs have been documented separately to the OCD. In this instance, the last sentence of 3.11.3.1 may require amendment (and the additional documents need to be provided with the Contract).

Related Clauses: All other subclauses within clause 3.11.

DID-PM-LCC-LCCRM defines the requirements for the LCC Report and Model.

All MSR Checklists that contain LCC reporting requirements.

Further Reading: Refer to the Further Reading section under the initial guidance for clause 3.11.

3.12 Transition into Operational Service

Status: Core (with optional subclauses)

Purpose: To require the Contractor to manage Transition activities, including co-ordination with the Commonwealth's transition activities, in order to enhance the likelihood that Transition into Operational Service will proceed smoothly and efficiently.

Policy: Nil

Guidance: Transition is a typical area of risk for larger projects and *ASDEFCON (Strategic Materiel)* provides a minimum set of requirements in order to plan and implement the process to Transition from the Contractor to the Commonwealth and Contractor (Support) organisations.

If the draft Contract will be linked to a draft Contract (Support) under the one RFT, drafters should refer to the *ASDEFCON Linkages Module (Strategic)* for further guidance and additional amendment instructions.

The scope of the Contractor's Transition activities will vary depending upon the Contractor's involvement in providing support services to operate and sustain the materiel system. Even if the Contractor will not become the Contractor (Support), the Contractor will have to Transition the Supplies to a support environment, where the Supplies become products supported by the Commonwealth and other parties.

Drafter's Action: Refer to subclauses.

Related Clauses: Refer to subclauses.

Further Reading: Nil

3.12.1 Contractor Transition Plan

Status: Core

Purpose: To have the Contractor prepare a Transition Plan (CTXP), implement the Approved CTXP, and to inform the Transition planning activities of the Commonwealth and the Associated Parties that will provide support.

Policy: Nil

Guidance: Clause 3.12.1 requires the Contractor to develop a CTXP and to conduct Transition activities in accordance with the Approved CTXP. TDR E-1.2 requires tenderers to provide a strategy (linked to the Phase In and Ramp Up of Support System capabilities).

If an ODIA or pre-contract work is programmed, then development of the CTXP, from the tendered Strategy, may be included in that phase. However, giving the time period between ED and the start of Transition, this is a lower priority than other plans and the plan is unlikely to be developed beyond a draft. At ED the tendered Strategy or draft CTXP, as applicable, is typically included in Attachment K until replaced by an Approved CTXP in accordance with clause 2.5.

While most *ASDEFCON* DIDs do not require tailoring, DID-PM-TRANS-CTXP may need to be tailored for the expected roles of the Contractor in future support activities. The OCD includes a support concept, which should document the division of support responsibilities between the Commonwealth and industry. Furthermore, when a draft Contract (Support) is tendered with the draft Contract (Acquisition), then the support concept and draft Contract (Support) define the 'end state' for Transition planning purposes.

The CTXP is also a significant source of information for the Commonwealth's own Transition Plan, providing a description of support responsibilities under each of the Support System Constituent Capabilities (SSCCs).

Of note, DID-PM-TRANS-CTXP includes requirements for a Software Transition Plan. Transition of Software is also included as a requirement of the Software Management Plan (SWMP).

Drafters should also be aware that the LSA activity of Transition Analysis has applicability to clause 5.3, Support System Implementation.

Drafter's Action: Clause 3.12.1 may be included in the RFT without alteration.

Related Clauses: TDR E-1.2, Transition, Phase In and Ramp Up Strategy

Clause 5.3, Support System Implementation

DID-PM-TRANS-CTXP defines requirements for the CTXP.

DID-ENG-SW-SWMP includes requirements to plan for the Transition of Software.

Further Reading: Nil

3.12.2 Transition Requirements and Coordination

Status: Optional. To be included if the scope of Transition is expected to be significant enough to warrant a Transition Requirements Review (TXRR) as a Milestone.

Purpose: To undertake specific Commonwealth, Contractor (Acquisition), Contractor (Support) and Subcontractor meetings to plan and co-ordinate Transition activities.

Policy: Nil

Guidance: Clause 3.12.2 is optional. When included, it places an obligation on the Contractor to conduct a TXRR. The alternative, for a more simple Transition, is to address Transition within routine progress meetings (see clause 3.9.1).

When included, the timeframe for a TXRR is set for 100 Working Days before the Test Readiness Review (TRR) for the first Mission System, or other time to be agreed between the parties. This timeframe represents a balance between the developmental maturity of the Mission System and Support System, and allowing a reasonable time to prepare before Acceptance into Operational Service. Drafters may change timeframe to suit the scale and complexity of anticipated Transition activities.

A location for the TXRR is not specified. Given the nature of many Transition activities, it may be appropriate to conduct the TXRR at the address of the Commonwealth agency having a major responsibility for the provision of in-service support and, therefore, significant Transition activity. The appropriate location(s) should be discussed and identified in the Approved CTXP.

Drafter's Action: The drafter should confirm the need for a TXRR and, therefore, this clause. If not required, clauses under the heading clause 3.12.2 should be replaced with a single 'Not used' and the TXRR checklist should be removed from Annex D.

If required, the drafter needs to determine an appropriate time for the TXRR (noting that the default is 100 Working days) and amend the clause if required.

If the Contract is linked to a Contract (Support), refer to the *ASDEFCON Linkages Module (Strategic)*.

Related Clauses: Annex C to Attachment B, Schedule of Milestone Criteria – Entry and Exit

DID-PM-TRANS-CTXP requires the CTXP to address planning and coordination of Transition-related meetings.

MSR-CHECKLIST-TXRR, Transition Requirements Review

Further Reading: *ASDEFCON Linkages Module (Strategic) Guide*

3.12.3 Transition Register

Status: Core.

Purpose: To require the Contractor to formally track Transition activities, risks, and Issues.

Policy: Nil

Guidance: Clause 3.12.3 places an obligation on the Contractor to develop, deliver and update a Transition Register in accordance with the Approved CTXP. Note that the Transition Register is delivered separately to the CTXP due to the more frequent updates. Transition normally involves a significant number of large and small activities, and a Transition Register provides a mechanism by which these activities can be tracked and managed (without cluttering the CMS and/or the Issue Register).

Of note, the CDRL defines a weekly delivery schedule for the Transition Register after the TXRR; however, live access via a DMS (clause 2.3) may be preferable.

Drafter's Action: Drafters should also review and update CDRL Line Number MGT-1010 for Transition Register delivery requirements.

Related Clauses: DID-PM-TRANS-CTXP includes requirements for the Transition Register.

CDRL MGT-1010 specifies delivery of the Transition Register.

Further Reading: Nil

3.12.4 Transition Working Group

Status: Optional. To be included if the scope of Transition warrants a regular exchange of information between involved parties in the lead up to and during Transition.

Purpose: To require the Contractor to arrange and participate in Transition Working Group (TXWG) meetings in order to plan and coordinate Transition and Contract (Support) Phase In and Ramp Up requirements.

Policy: Nil

Guidance: The notes to drafters and tenderers provide guidance for this clause. Refer also to the *ASDEFCON Linkages Module (Strategic) Guide*.

Drafter's Action: The drafter should confirm the need for a TXWG and, therefore, the need for this clause. If TXWGs are not required, the clauses below the heading can be replaced with a single 'Not used'.

Drafters should provide the expected minimum number of meetings and locations at clause 3.12.4.3. In addition, drafters should provide an estimate of the approximate number of meetings and expected durations in the note to tenderers.

Drafters should tailor clause 3.12.4.7 to list the applicable MSRs, in accordance with the note to drafters.

Related Clauses: DID-PM-TRANS-CTXP includes requirements for the Transition Register, which would record issues from the TXWG.

Clause 3.9.2, Extraordinary Meetings

Further Reading: *ASDEFCON Linkages Module (Strategic) Guide*

3.12.5 Transition Support

Status: Optional

Purpose: To have the Contractor provide personnel to support Commonwealth units, which require direct assistance to undertake Transition-related activities.

Policy: Nil

Guidance: Transition support in this context means the provision of Contractor personnel to enable Commonwealth units to undertake Transition-related activities. These personnel are likely to be embedded within Commonwealth operational or support units for a defined period, or may conduct work off-site in the case of information services. While not limiting, examples are:

a. operators to assist the Defence units or the Capability Manager to develop operational procedures or undertake Validation activities (for acceptance into service rather than Acceptance under the Contract);

b. Maintenance supervisors / instructors to provide on-the-job Training for Commonwealth Personnel;

c. personnel working in the SPO to catalogue items in the Military Integrated Logistics Information System (MILIS) inventory or to assist to develop SPO instructions and quality procedures;

d. suppliers who can assist with managing the project store; and

e. engineers facilitating knowledge transfer to Commonwealth Personnel (and who may become field service representatives under a Contract (Support)).

Drafters need to scope the likely requirements for Transition support. As identified in the note to tenderers, the scope may be revised during negotiations; however, an indicative scope is required so that tenderers can tender an indicative cost.

Clause 3.12.5 prompts the user for 'skill type', 'location' and 'nature of support'. If there are numerous requirements this may be better organised as a table or annex

to the SOW. The 'nature of the support' should indicate expected duties and the duration (eg, "the first 30 Working Days following Mission System Acceptance at each site"). Further detail should be included in the Contractor's CTXP.

Drafters should consider activities of Commonwealth Personnel in relation to Transition support. For example, should we ask the Contractor to provide supplementary Maintenance personnel while Commonwealth Personnel are absent to undergo Training or to provide on-the-job Training when Commonwealth Personnel return from formal Training?

Drafter's Action: The drafter should confirm the need for Transition support and, therefore, the need for this clause. If Transition support is not required, the clause below the heading can be replaced with a single 'Not used'.

If required, drafters need to define the likely scope of Transition support required.

Related Clauses: DID-PM-TRANS-CTXP defines requirements for the CTXP.

Clause 5.3, Support System Implementation

Clause 7.2.4, Acceptance Validation

Further Reading: Nil

3.13 Contractor Managed Commonwealth Assets

Status: Core.

Purpose: To require the Contractor to manage the receipt of, use and care of Contractor Managed Commonwealth Assets (CMCA).

Policy: DEFLOGMAN Part 2 Volume 5 Chapter 17 *Stocktaking of Defence Assets and Inventory*

DEFLOGMAN Part 3 (ESCM) Volume 8 Section 2 Chapter 4 *Issuing Items*

Guidance: CMCA are items owned by the Commonwealth but held by the Contractor (this includes items leased from a third party but treated as Commonwealth-owned for purposes of the Contract). CMCA can include Government Furnished Material (GFM). CMCA may also include items under construction that the Commonwealth 'owns' (eg, paid for but not Accepted). Additionally, Repairable Items (RIs) returned for warranty repair or rework under the Contract, are CMCA but not GFM. Refer to the Glossary for formal definitions.

GFM is any equipment, information or data listed in Attachment E and provided to the Contractor by the Commonwealth to assist in the performance of the Contract.

Subclauses 3.13.1 and 3.13.2, for GFM, are optional but interdependent and must be included or omitted as a set. All CMCA must be accounted for and included in regular stocktaking activities, as required by DEFLOGMAN Part 2, Volume 5, Chapter 17 and SOW clause 3.13.4.

Note that a common error is to transfer acquisition GFM into support contracts as GFM. However, an item provided as GFM and integrated into the Supplies during acquisition is not GFM under a support contract, but it will be CMCA when held by the Contractor (Support) (eg, for repair work).

Drafter's Action: Refer to subclauses.

Related Clauses: Refer to subclauses.

Further Reading: Nil

3.13.1 Provision and Management of Government Furnished Material

Status: Optional. To be included if GFM is to be provided to the Contractor. Clauses 3.13.1 and 3.13.2 are optional but interdependent and included or omitted as a set.

Purpose: To impose contractual obligations on the Contractor for the receipt, inspection and functional testing of GFM.

Policy: See guidance for clause 3.13 above.

CASG WHS Management System (CASSafe)

Guidance: Clause 3.7 of the COC covers the commercial aspects for the provision and management of GFM. SOW clause 3.13.1 covers the associated work, particularly in regards to the initial inspection and test of GFM, and reporting of deficiencies.

The Commonwealth is to provide the Contractor with access to GFM at the places and times stated in Attachment E. If the Commonwealth fails to provide timely access, COC clauses 3.7 and 6.2 allow the Contractor to claim postponement for the delivery of any related Supplies or a Milestone, unless the problem was caused by the Contractor or a Subcontractor (eg, a late change to delivery locations). Hence, it is important that GFM is provided at the times and places specified.

The 'issue voucher' in clause 3.13.1.3 is generated by the MILIS to allow for the tracking and accountability of stores. There are options as to how MILIS can be set up for a particular project and the Commonwealth Representative needs to ensure that correct MILIS accountability processes have been implemented for GFM.

On receipt, and in accordance with clause 3.13.1.4, the Contractor is to inspect the GFM for physical damage, defects and deficiencies (ie, missing items) within the timeframes specified in Attachment E (or the default of 10 Working Days) and report its satisfaction or dissatisfaction to the Commonwealth Representative. Clause 3.13.1.5 reinforces the need for safety by not using any equipment found, on inspection, to be defective.

Clause 3.13.1.6 includes an additional requirement to carry out functional testing of GFE prior to the work that requires it (eg, at least 15 Working Days). It is important that these tests are carried out to ensure that the GFE is serviceable and to avoid any delay to the program if issues with the equipment are discovered at a later date. The words 'to the extent feasible' means that the Contractor is not 'in default' if it is not feasible for the GFE to be functionally tested beforehand (eg, if the GFE operates with other items that are not yet available). If the Contractor claims postponement in relation to GFE under COC clause 6.3, the Contractor's actions would also be taken into account. If the Contractor failed to inspect or carry out functional tests, the Commonwealth's warranty in relation to Commonwealth Mandated GFM may not apply.

GFE provided to the Contractor is to be accompanied by information sufficient to inform safety risk assessments. Refer to the CASSafe requirement 10.2 to 'supply safe plant, substances, structures and radiation sources'. To the extent that safety related information is not contained in existing Technical Data, that information will need to be provided separately as GFI or GFD (as applicable).

Drafter's Action: If required, clause 3.13.1 may be included in the RFT without alteration.

Drafters are include details at draft Attachment E of GFM that will be offered to the Contractor, including the quantity, date required (ie, made available) if known, location, etc. This list should be updated prior to ED with any final details.

Related Clauses: TDR E-11 requests tenderers to identify the GFM they require, including quantity, date required, location and intended purpose. TDR D-2 requests tenderers to identify price increases should any GFM not be made available.

Clause 3.7 of the COC, GFM - Provision and Management

Clause 3.9 of the COC, Commonwealth Property

Clause 6.3 of the COC, Postponement, allows a claim of postponement due to Commonwealth Default (eg, failing to provide GFM).

Attachment E, Government Furnished Material

Further Reading: CASSafe Requirement 10.2 *Supply safe plant, substances, structures and radiation sources*

3.13.2 Use of GFM

Status: Optional. To be included if GFM is to be provided to the Contractor.

Purpose: To outline how the Contractor is to use the GFM in a proper manner.

Policy: See guidance for clause 3.13 above.

Guidance: Under clause 3.13.2 the Contractor is to incorporate GFM into applicable Supplies and use GFM in the production of the Supplies in a skilful manner. This aligns with the standards of work and conformity requirements under clause 3.2 of the COC. Note that clauses 3.13.1 and 3.13.2 are optional but interdependent and included or omitted as a set.

Clause 3.13.2.2 requires the Contractor to return GFM that has not been incorporated into the Supplies or used in the production of the Supplies to the Commonwealth, as directed by the Commonwealth Representative. Detailed requirements for the return of GFM are often co-ordinated as Transition activities.

Drafter's Action: If required, clause 3.13.2 may be included in the RFT without alteration.

Related Clauses: TDR E-12 of the COT requests tenderers to identify the GFM that they require to perform the Contract including the quantity, date required, location and intended purpose.

TDR D-2 requires tenderers to identify price increases should any GFM not be made available.

Clause 3.7 of the COC, GFM - Provision and Management

Clause 3.9 of the COC, Commonwealth Property

Attachment E, Government Furnished Material

Further Reading: Nil

3.13.3 Care of Contractor Managed Commonwealth Assets

Status: Core

Purpose: To require the Contractor to take reasonable care of CMCA.

Policy: See guidance for clause 3.13 above.

Guidance: Clause 3.9 of the COC covers the general care of Commonwealth Property, including CMCA. SOW clause 3.13.3.1 requires the Contractor to provide the resources needed to care for CMCA, including GFM, and covers the work required in order to comply with COC clause 3.9.

In caring for CMCA the Contractor is required, by clause 3.13.3.2, to report any loss or damage. This on-going requirement is in addition to the periodic stocktaking required under clause 3.13.4.

Clause 3.13.3.3 requires the Contractor to calibrate GFE that requires calibration – this is primarily directed at S&TE used for integration activities and the V&V program, but it may also apply to GFE used in the Supplies. Drafters may consider altering this clause if GFE maintenance is covered by a standing offer arrangement managed by the item's Designated Logistics Manager.

Where GFE requires on-going preventive / periodic maintenance then a clause may be added to require the Contractor to undertake such maintenance. Ideally, some reference to the scope of work would be included or referenced (eg, all routine maintenance tasks in the associated technical manuals).

Drafter's Action: Clause 3.13.3 may be expanded to capture the scope of work when the Contractor is required to perform maintenance of GFE.

Related Clauses: Clause 3.7 of the COC, GFM – Provision and Management

Clause 3.9 of the COC, Commonwealth Property

Further Reading: Nil

3.13.4 Assurance and Stocktaking of Contractor Managed Commonwealth Assets

Status: Core

Purpose: To require the Contractor to undertake the necessary stocktaking and accounting for CMCA.

Policy: DEFLOGMAN Part 2 Volume 5 Chapter 17*, Stocktaking of Defence Assets*, includes directions for contract managers and Contractors

ESCM Volume 4, Section 10, *Stocktaking*

Guidance: This clause applies to all contracts. Commonwealth assets held by the Contractor include, as examples, GFM, Supplies that have been Accepted but remain with the Contractor, and Supplies returned to the Contractor for warranty repair.

Clauses 3.13.4.1 to 3.13.4.3 requires the Contractor to develop a Commonwealth Assets Stocktaking Plan (CASP) as part of the PMP, and to perform stocktaking in accordance with the CASP. Clause 3.13.4.4 refers to the identification of periodic stocktaking requirements from the MILIS; depending upon whether the Contractor has access to the MILIS (in some cases for only part of the Contract period). If the items are not included in the MILIS, then clause 3.13.4 requires stocktaking / stock assurance to be undertaken using the methods in DEFLOGMAN.

The Commonwealth Asset Stocktaking Report (CASR) is a part of the CSR, as stated in clause 3.13.4.6. A CASR is required to be delivered every three months; hence, within the CDRL these may be delivered separate to the rest of the CSR.

In clauses 3.13.4.7 to 3.13.4.9, the Commonwealth reviews the CASR and the Contractor is required to investigate any discrepancy. The last of these clauses identifies the thresholds for which the Contractor is to notify the Commonwealth and immediately investigate the deficiency.

Drafter's Action: Clause 3.13.4 is to be included in the RFT without alteration.

Related Clauses: Clauses 3.7 of the COC, GFM - Provision and Management

Clause 3.9 of the COC, Commonwealth Property

Clause 3.13.3, Care of Contractor Managed Commonwealth Assets

DID-PM-MGT-PMP defines the requirements for the CASP.

DID-PM-STAT-CSR defines the requirements for the CASR.

Further Reading: Nil.

3.14 Australian Industry Capability Management

Status: Core

Purpose: To place an obligation on the Contractor to comply with the AIC requirements.

Policy: *2016 Defence and Industry Policy Statement*

2018 Defence Industrial Capability Plan

Guidance: Under Defence's industry policy, the AIC program aims to:

a. generate and sustain indigenous industrial capabilities to meet Australia's military self-reliance needs, in support of ADF operational capability; and

b. create competitive opportunities for local industry to provide goods and services, domestically and internationally, based on best value for money.

To a large extent, these policy aims are achieved through contracts. Refer to the policies listed above for further details. Drafter's should also check for recent changes to the above policies, to confirm that the contract value thresholds, other criteria, and requirements in the template, still apply.

In line with Defence's industry policies, an AIC Plan is required if the expected value of any resultant Contract is A$20 million or more (including all taxes and duties). This threshold is exceeded in the normal use of the *ASDEFCON (Strategic Materiel)* template; for contracts of lower value refer to the AIC clauses in *ASDEFCON (Complex Materiel) Volume 2*.

If the Contract includes an element of Facilities construction or modification, an Australian Industry Participation Construction Schedule is also be required. Facilities work is normally managed by Defence E&IG rather than being part of a 'materiel acquisition' contract; hence this requirement has not been included in *ASDEFCON (Strategic Materiel)* and must be coordinated separately with E&IG.

Clause 3.14 requires the Contractor to:

a. comply with the AIC Plan in Attachment F;

b. enhance the AIC Plan, and amend as necessary as a consequence of Contract Change Proposals;

c. develop and deliver AIC reports as part of the CSRs;

d. assist the Commonwealth to conduct an initial review of AIC Plan implementation, and then conduct subsequent annual reviews; and

e. flow down AIC requirements to relevant Approved Subcontractors.

The AIC Plan defines the Contractor's AIC program responsibilities and its commitments to meeting AIC program requirements. A draft AIC Plan is to be tendered in response to TDR H, and updated by the successful tenderer before being included at Attachment F, at ED. A public version of the AIC Plan (published by the government) needs to be revised six-monthly. Updates, prepared in accordance with DID-PM-AIC-AICP and delivered under clause 3.14.2, require the Contractor to raise a CCP in accordance with COC clause 11.1, to amend Attachment E.

Achievement against the AIC Plan is reported in the AIC, a sub-report of the CSR, in accordance with clause 3.14.3.

Clauses 3.14.4 and 3.14.5 facilitate Commonwealth review of the progress made against the AIC Plan. An initial AIC review may be conducted prior to, or following, the delivery of the first AIC Report. This review seeks to verify that the Contractor has implemented the AIC Plan satisfactorily and has appropriate methodologies for capturing, recording and reporting AIC data.

Subsequent AIC progress reviews are held annually to ensure that:

a. claimed activities have actually been performed;

b. capabilities are in place can be demonstrated; and

c. achievements against the AIC Plan, as reported by the Contractor, can be verified.

AIC progress reviews also aim to promote a working relationship between the Contractor and Commonwealth, to ensure the SICPs are achieved.

Refer to Defence Industry Branch, Defence Industry Policy Division, for advice.

Drafter's Action: Clause 3.14 is to be included in the RFT without alteration.

AIC requirements should be tailored through TDR G and Attachment F. The AIC Plan is to be included at Attachment F prior to Contract signature.

Related Clauses: TDR G requests tenderers to provide their AIC proposals.

Clause 4 of the COC, Australian Industry Capability

Further Reading: Nil

3.15 Technical Data and Software Rights Management

Status: Core

Purpose: To require the Contractor to obtain Technical Data and Software rights, and to manage restrictions, as necessary to perform the Contract and as required for the life of the Materiel System (including providing Technical Data and Software to other parties).

Policy: DEFLOGMAN Part 2 Volume 10 Chapter 5, *Defence Policy on Acquisition and Management of Technical Data*

Defence Intellectual Property Policy 2014

ASDEFCON Technical Data & Intellectual Property Commercial Handbook

DMH (ENG) 12-2-003 *Technical Data Management Handbook*

Guidance: Technical Data and Software rights are the rights to access and use Technical Data and Software, including rights to provide that Technical Data and Software to other parties (ie, sublicensing). Intellectual Property (IP) rights, and rights to Technical Data and Software that are subject to export controls, are two common examples.

The main components of the framework to manage Technical Data and Software rights within the template are:

a. COC clause 5, which sets out the Commonwealth's 'default' rights to use and sublicense Technical Data and Software, and also Contract Material;

b. the Technical Data and Software Rights (TDSR) Schedule (Attachment G), which defines restrictions on the default rights defined by COC clause 5;

c. the Master Technical Data Index (MTDI) and Software List (SWLIST), which cross-reference individual items of Technical Data and Software to the restrictions listed in the TDSR Schedule, and individual licences, when applicable; and

d. SOW clause 3.15, which captures the work requirements necessary to comply with COC clause 5 and to maintain the TDSR Schedule.

Technical Data and Software requirements (eg, who needs what) and associated rights need to be defined for the life cycle, including the Technical Data and Software needed for project activities, in-service operation and support (including contractor support), and disposal. To begin, the Commonwealth should conduct a Technical Data Requirements Analysis during the requirements definition process, in accordance with the *Technical Data Management Handbook*. Rights required for the in-service phase (including contractor support) should reflect the Support Concept (within the OCD) and through-life contracting requirements described in the PES.

Clause 3.15 requires the Contractor to manage Technical Data and Software rights, which includes acquiring IP licences, assigning rights for IP created under the Contract, maintaining the TDSR Schedule, and securing agreements when the products are subject to export controls. Clause 3.15.1 identifies that the required processes and activities are described in the Approved PMP.

Clause 3.15.2 requires the Contractor to update the TDSR Schedule when required. For example, when a design decision is made and a certain subsystem is selected, restrictions from the Subcontractor's license may need to be added to the TDSR Schedule so that all items of Technical Data in the MTDI, and items of Software in the SWLIST, can reference that new licence restriction (note that a complex subsystem may have a number of licensing agreements and restrictions within the

TDSR Schedule). As the TDSR Schedule is an Attachment, updates are subject to 'CCP approval', as identified in the CDRL.

Clause 3.15.3 requires the Contractor to include TDSR reports within the CSR, to report progress made in acquiring and assigning rights, or obtaining the export approvals needed, and any risks or issues associated with rights and restrictions.

Clause 3.15.4 states that the Commonwealth may conduct a review to assess related records and verify the implementation of the necessary Technical Data and Software rights. Commonwealth access is permitted under COC clause 11.7, so the SOW clauses are included largely to highlight use of this existing right. Clause 3.15.5 extends this obligation to Approved Subcontractors (if applicable). Such reviews may be performed annually at Contractor and/or Approved Subcontractors' premises and the Contractor and Approved Subcontractors are to facilitate these reviews.

Drafter's Action: Clause 3.15 is to be included in the RFT without alteration.

The TDSR Schedule in Attachment G needs to be developed before the RFT. This may include identifying requirements for Commonwealth Technical Data and Software. Drafters may also need to add details of the rights (for the contractor) to use and sublicense GFI, GFD and GFE, including any Software provided as GFE.

Prior to Contract signature, the TDSR Schedule will need to be updated with details from the preferred tender and any related outcomes from negotiations.

Related Clauses: TDR C-5 requires each tenderer to submit an updated draft TDSR Schedule.

Clause 5 of the COC, Technical Data, Software and Contract Material

Attachment G, Technical Data and Software Rights Schedule

Clause 4.4.2, Software Development

Clause 5.2.8.5, Technical Data

Clause 5.3.3, Implementation of Technical Data Requirements

DID-ILS-TDATA-MTDI defines requirements for the MTDI.

DID-ENG-SW-SWLIST defines requirements for the Software List.

Further Reading: Nil

3.16 Defence Security Compliance

Status: Core

Purpose: To require the Contractor to ensure that all security procedures, training, facilities and clearance requests are established and maintained to meet the requirements of clause 11.10 of the COC.

Policy: *Defence Security Principles Framework* (DSPF)

Australian Government Information Security Manual (ISM)

Guidance: The security requirements of the Contract are specified in clause 11.10 of the COC, with options for including security requirements for personnel, facilities, information systems and equipment. This clause requires the Contractor to undertake the work required to comply with Defence security requirements at clause 11.10 of the COC.

For information on the DSPF refer to the Program Management CoE and: http://drnet/AssociateSecretary/security/policy/Pages/dspf.aspx

Drafter's Action: Clause 3.16 is to be included in the RFT without alteration.

Related Clauses: TDR E-10, Facility and Information Communications Technology Systems Security Accreditation Clearance Requirement

Clause 11.10 of the COC, Defence Security

Further Reading: Project Security on the CASG Security website:
http://drnet.defence.gov.au/DMO/Security/Pages/Project-Security.aspx

3.17 Resident Personnel

Status: Optional. To be included when Defence project team members are to be located with the Contractor (and/or an Approved Subcontractor).

Purpose: To require the Contractor (and/or an Approved Subcontractor) to provide support to Resident Personnel (RP) located at the Contractor's (or Subcontractor's) premises.

Policy: *Defence Safety Manual* (SafetyMan)

WHS Legislation

Defence Safety Principles Framework

Commonwealth policy prohibits the inclusion of travel or accommodation costs for Commonwealth Personnel within the Contract payments. Such costs must be separately funded by the Commonwealth. This prohibition does not extend to the allocation of facilities at the Contractor's premises.

Guidance: Having RP at the Contractor's premises is strongly recommended for Contracts that involve design and development. RP can assist with activities, such as:

a. requirements interpretation;

b. human engineering issues (particularly issues relating to the human machine interface and human workload analysis);

c. assisting in coordination with stakeholders for the development of interfaces to existing Defence systems;

d. monitoring the Contractor's activities under the Contract;

e. representing the Commonwealth at Contract progress meeting; and

f. representing the Commonwealth at Acceptance Verification and Validation (AV&V) activities.

On occasion, such as when significant design and development is performed by an Approved Subcontractor, RP may be located with the Approved Subcontractor.

In selecting RP, the Commonwealth Representative should ensure that staff have appropriate qualifications, experience, and understanding of project requirements. A minimal team should embrace the core disciplines of PM, SE, ILS and V&V. A larger team may include specialist staff such as Software, Configuration Management and quality assurance specialists, commensurate with Contract risks.

The Commonwealth Representative should ensure that the scope of authority of the RP is clear to all parties, to ensure that requirements of the Contract are not inadvertently compromised (changed) by the RP's actions. This scope of authority should be documented in Attachment L as part of the terms of reference for the RP.

Clauses 3.17.1 and 3.17.2 provide links to Attachment L for both the scope of RP activities and so that the SOW acts to capture associated work (and costs) of the support required for RP.

Under clause 3.17.3 the Contractor is to provide Commonwealth Personnel with facilities of an equal standard to those provided for Contractor's personnel of a similar status. The clause also requires that, as a minimum, working conditions meet WHS requirements in SOW clause 9.3.5, which refers to applicable codes of practice (refer to the guidance for clause 9.3).

Clause 3.17.5 places an obligation on the Commonwealth and Commonwealth officers to comply with safety and security arrangements, regulations and codes of behaviour that apply to the Contractor's premises. Where Commonwealth officers require security clearances to enter the Contractor's premises, clause 3.17.4 places

an obligation on the Contractor to provide assist in arranging such clearances when the Contractor's premises are located outside of Australia.

Clause 3.17.6 requires that the above requirements be included in Approved Subcontracts if RP are to be located with Approved Subcontractors.

Drafter's Action: If required, clause 3.17 is to be included in the RFT without alteration.

Attachment L must be tailored to define the needs for RP, including the numbers of RP, resource requirements, and terms of reference.

Related Clauses: Clause 2.1 of the COC, Representatives, allows a Commonwealth Representative to delegate authority to the RP.

Attachment L, Resident Personnel

Clause 9.3.5, WHS of Commonwealth Personnel on Contractor or Approved Subcontractor Premises

Further Reading: Nil

3.18 Business Resource Planning

Status: Core

Purpose: To require the Contractor to conduct Business Resource Planning in accordance with the Approved PMP, and to allow the Commonwealth to conduct reviews and audits of the Contractor's progress in doing so.

Policy: Nil

Guidance: In seeking information about the Contractor's corporate business plan, the Commonwealth seeks to determine that the tenderer, and then the Contractor, has effective strategies in place to deal with other commitments outside the Contract and to ensure that it can meet current and future Contract work requirements. The Commonwealth is entitled to expect that other work commitments will not impede work under the Contract. Accordingly, the Contractor is to manage an effective business resource balance as described in the PMP, and the Commonwealth is obligated to review the PMP to ensure remaining obligations under the Contract are adequately resourced.

Drafter's Action: Clause 3.18 is to be included in the RFT without alteration.

Related Clauses: TDR C-7 of the COT requests the tenderer to identify how it will manage its financial, physical, organisational and intellectual business resources to meet competing work commitments, and to illustrate their strategies and plans to deal with Subcontractors, other suppliers and human capital impacts on work capacity.

Further Reading: Nil.

3.19 Co-ordination and Co-operation

Status: Core

Purpose: To require the Contractor to co-operate and co-ordinate with Associated Parties who may be involved in the integration of / interfacing with the new Materiel System, installations, V&V, and/or the provision of GFM.

Policy: Nil

Guidance: Clause 3.19 requires the Contractor to acknowledge that it will need to consult, co-operate and co-ordinate with Associated Parties (eg, other organisations in the Commonwealth and other contractors) during the Contract.

Clause 3.19 requires the Contractor to co-operate with all parties that need to interact or interface with the Contractor and/or the Supplies, such as:

a. another Commonwealth agency or contractor supporting Other Capabilities with which the new Materiel System will interface;

b. other Commonwealth agencies involved with regulatory / assurance functions or V&V activities, and/or IV&V contractors;

c. other Commonwealth agencies preparing Facilities or involved with installations (eg, Estate and Infrastructure Group (E&IG), CIOG);

d. Defence operational units, for example, for an installation on a ship, the ship's company will assist with coordinating access and safety; or

e. other Commonwealth agencies, and indirectly other contractors to the Commonwealth, who will provide equipment (ie, GFE) for incorporation into the Supplies or for use in performing work (eg, S&TE used during V&V).

Other Capabilities include other Materiel Systems that the new system will interface or interact with, including common subsystems integrated on multiple platforms. Associated Parties (the other Commonwealth agencies and contractors supporting or introducing Other Capabilities) may need to be involved in installations, and, in some cases require information to modify the Other Capabilities,

These clauses will have general applicability across all projects.

Drafter's Action: Clause 3.19 is to be included in the RFT without alteration.

Related Clauses: Clause 11.4.1 of the COC, Work Health and Safety

Further Reading: Nil.

3.20 Government Furnished Facilities

Status: Optional

Purpose: To define the responsibilities associated with Contractor occupancy and use of Government Furnished Facilities (GFF).

Policy: Nil

Guidance: This clause is applicable when GFF will be offered, or is mandated, for use by the Contractor. If GFF is offered as an option in the tender but following the tender, it is found that GFF is not required, then the clause may be removed before ED.

Note that, in general, installations into Commonwealth Premises are short term and can be performed without the need for a GFF Licence.

The clause is drafted generically to apply the same work-related requirements to all of the GFF detailed in Attachment O, in one or more GFF Licences. Where there is more than one GFF Licenced Area and requirements differ between them, the clauses may be amended (eg, by the addition of 'as per details in the applicable GFF Licence'). A GFF Licenced Area can include buildings, other structures, fittings, plant and equipment, and surrounding grounds, as described in the licence.

Clause 3.20.1 addresses handing over GFF to the Contractor. GFF and the Licensed Fittings are to be inspected and/or functionally tested before use. The condition of the GFF is compared to Commonwealth Facilities Condition Reports, provided by E&IG, with any differences noted and issues resolved. The need for functional testing is similar to that for GFE, and mostly applies to embedded plant and equipment (eg, air conditioning, hoists, cranes, etc).

Clause 3.20.2 requires the Contractor to take care of the GFF. Depending on the nature and location of GFF, the level of responsibility can change and these are identified through the options under this clause, and as follows.

Option A requires the Contractor to maintain all aspects of the GFF Licensed Area, including all plant and equipment. This option is unusual as E&IG often look after some, if not all, of the GFF.

Option B requires the Contractor to maintain the Licensed Fittings in Attachment O. This does not need to include all Licensed Fittings; those listed in Attachment O may be only specialised equipment that cannot be maintained by regular building trades under the asset management services provided by E&IG.

If option A or B is required, the additional optional clause requiring the Contractor to comply with all applicable laws and maintenance procedures is to be included.

Clause 3.20.3 requires the Contractor to facilitate inspections of the GFF by the Commonwealth (usually a facilities management contractor assigned by E&IG). These inspections, typically annual, provide an assessment of the condition of the GFF and may highlight any damage considered more than 'fair wear and tear'.

Drafter's Action: If GFF is required, or likely to be required, clause 3.20 should be included in the RFT. Options within clause 3.20.2 need to be selected based on the maintenance responsibilities to be given to the Contractor.

For GFF, most of the tailoring effort will be in developing Attachment O. Glossary terms also require update for specific GFF requirements.

Related Clauses: Clause 3.8 of the COC, Government Furnished Facilities

Attachment O, GFF Licence

Clause 9 includes WHS and environmental requirements that apply to GFF.

SOW Annex E is used to advise the Contractor of WHS hazards at Commonwealth premises.

Further Reading: Nil

4. SYSTEMS ENGINEERING

4.1 Systems Engineering Management

Status: Core (with optional subclauses)

Purpose: To require the Contractor to undertake adequate and effective SE processes in the management of engineering development work under the Contract and to allow the Commonwealth appropriate insight into these processes.

Policy: CASG policy requires SE be applied to requirements definition, system development, and design and engineering processes for developmental systems. This is underpinned in the *Interim Capability Life Cycle Manual* requirements for the 'Risk mitigation and Requirement Setting' phase and Functional Handbook (ENG) 12-3-003, *Capability Definition Documents Guide*. Specific policy for SE is included on the CASG QMS 'Engineering and Technical' Function webpages.

CASG uses EIA-632 *Processes for Engineering a System* as its SE standard. The requirements in this standard are built into the SE and V&V clauses and reflected in the ILS clause.

In the ensuing subclauses, where no specific policy is identified, the above-mentioned overarching policies are relevant.

Guidance: See guidance on subclauses.

For additional guidance, refer to the CASG, Technical and Engineering Function.

Drafter's Action: Nil

Related Clauses: Refer to subclauses.

Further Reading: Nil

4.1.1 Engineering Organisation and Planning

Status: Core

Purpose: To require the Contractor to develop, deliver, maintain and implement a Systems Engineering Management Plan (SEMP).

Policy: See guidance for clause 4.1 above.

Guidance: Clause 4.1.1 ensures that the Contractor adequately plans engineering activities and conducts activities in accordance with the Approved SEMP. This should include adequate planning and oversight of Subcontractor activities.

The engineering aspects of the draft SOW have been aligned with EIA-632, which specifies 33 high-level process requirements in generic / abstract terms and does not mandate particular methods to satisfy them. As such, the SEMP is expected to capture the Contractor's tailoring of EIA-632, or similar, as applicable for the Contract and the Contractor's internal procedures. Note that there is no clause that calls up EIA-632 as a mandatory requirement, other standards may be acceptable.

The requirements of this clause should apply to the design and development of the Mission System and significant Support System Components. These elements should be clearly defined in SOW clause 2.1, Scope of Work.

The SEMP is the highest-level engineering plan. Other plans such as the System Safety Program Plan (SSPP), Software Management Plan (SWMP), Human Engineering Program Plan (HEPP), Integrated RM&T Plan (IRMTP), Process Improvement Plan (PIP), SRP, and Growth Plan are subordinate to it. The SEMP describes the interrelationships of subordinate plans. The SEMP and Integrated Support Plan (ISP) should be coordinated as a number of Contractor activities (eg, RM&T, Mission System Supportability analysis) will involve and inform both the SE and ILS programs.

TDR E-1.3 requires tenderers to deliver a Systems Engineering Strategy, which may be developed into a draft or final SEMP during pre-contract work. The SEMP may be Approved 'by ED' (refer CDRL) or developed after ED from the Systems Engineering Strategy or draft SEMP in accordance with clause 2.5, Draft Data Items and Strategies included at Attachment K.

Drafter's Action: Clause 4.1.1 is to be included in the RFT without alteration.

Depending upon whether a Contract-ready SEMP is obtained prior to the Contract (ie, during ODIA or pre-contract work), the CDRL may need to be adjusted.

Related Clauses: Clause 3.6 of the COT refers to the ODIA process.

TDR E-1.3 Systems Engineering Strategy

Clause 2.1, Scope of Work

Clause 3.2.3, Contract Master Schedule

Clause 3.2.5, Earned Value Management System, requires detailed planning, scheduling and review of engineering work packages.

DID-ENG-MGT-SEMP defines requirements for the SEMP.

Further Reading: Nil

4.1.2 Engineering Schedule

Status: Core

Purpose: To require the Contractor to include a time-based schedule of engineering activities and milestones, System Reviews and key dependencies in the CMS.

Policy: Refer to guidance for clause 4.1.

Guidance: Clause 4.1.2 aims to ensure that the Contract schedule adequately reflects the engineering activities and reflects the key program technical events.

There are two types of relevant engineering schedule, known in earlier standards as the systems engineering master schedule (SEMS) and the system engineering detailed schedule (SEDS). The SEMS was intended to reflect the required program sequence of activities and milestones and their inter-relationships, providing the logical basis for a time-based schedule. This time-based schedule, or SEDS, showed durations of activities and could include 'artificial' dependencies generated by limited resources (ie, activities that would therefore need to be conducted as a series rather than in parallel).

The *ASDEFCON (Strategic Materiel)* RFT template does not use these terms but captures the time-based engineering schedule in the CMS required under clause 3.2.3 and captures the relevant events and relationships in the System Review Plan required under clause 4.1.5.

Drafter's Action: Clause 4.1.2.2 may need elaboration to identify project-specific milestones of interest that should be addressed in the CMS.

Drafters are to include program-specific Milestones in Attachment C.

Related Clauses: Clause 3.2.3, Contract Master Schedule

Clause 3.2.5, Earned Value Management System, includes requirements for planning, scheduling and review of engineering work packages.

Clause 4.1.5, Conduct of System Reviews

Further Reading: Nil

4.1.3 Engineering Organisation and System Compliance

Status: Optional (required if ADF regulatory / assurance framework requirements apply to the engineering design, development and/or production program)

Purpose: To require the Contractor to have the systems, processes and personnel with the skills to meet the ADF regulatory / assurance requirements associated with the engineering and production activities under the Contract.

Policy: AAP 8000.011, *Defence Aviation Safety Regulation* (DASR)

ANP3411-0101, *Naval Materiel Assurance Publication*

Technical Regulation of ADF Materiel Manual - Land (TRAMM-L) or *Land Materiel Safety Manual* (LMSM, when released)

DEFLOGMAN Part 2 Volume 9, *Defence Explosive Ordnance Manual*

Defence Explosive Ordnance Publications (DEOP) 100 Volume 2 Part 2 Chapter 3 *Explosive Ordnance Materiel Safety Regulations*

Guidance: Where engineering design and development has the potential to affect the safety and integrity of the Materiel System, then ADF regulatory / assurance framework requirements for the applicable environment may need to be applied.

For advice specific to the requirements in each environment, drafters should contact the applicable ADF authority:

- Defence Aviation Safety Authority (DASA) (Aerospace)
- Director Technical Regulation - Army (DTR-A) (Land)
- Navy Materiel Seaworthiness Assurance Agency (NMSwAA) (Maritime)
- Directorate of Ordnance Safety (DOS) (Explosive Ordnance)

If no ADF regulatory / assurance framework applies to the engineering and production programs, then the clauses under clause 4.1.3 can be replaced with a single 'Not used'. If an ADF regulatory / assurance framework does apply, drafters should seek advice from the relevant ADF authority to ensure that the Contract can be drafted with the most up-to-date requirements.

Aerospace: For aerospace systems, the Contractor may need to seek 'Military Design Organisation Approval' and 'Military Production Organisation Approval' or be recognised as having equivalent approvals. The information requirements for organisational approval change depending on the scope of the program (ie, aircraft, versus subsystems / aircraft components).

Land: The objective of this clause is to ensure an appropriate engineering framework is in place to ensure the technical and operational mission-worthiness of nominated systems. Contracts for the nominated systems may require the Contractor to demonstrate compliance with the TRAMM-L.

Note: At the time of template release, the Land regulatory environment was transitioning from the TRAMM-L to a new regulatory / assurance framework based on the LMSM. Advice should be sought for the latest requirements to be included in the draft Contract.

Maritime: The objective of this clause is to ensure an appropriate engineering framework is in place to ensure the design and development of safe and seaworthy vessels. The Contractors engineering organisation and systems may need to be assessed to demonstrate compliance with Naval Materiel Assurance requirements.

Note: The transition from the Naval Regulatory System to the Defence Seaworthiness Management System is ongoing, and advice should be sought as to the latest requirements to be included in the draft Contract.

Electronic: Requirements for electronic systems may depend on the platform on which they are fitted. When fitted to various platforms these systems may be subjected to more than one set of requirements, and clause 4.1.3.1 should be

amended to explain the application of the various ADF regulatory / assurance frameworks.

Explosive Ordnance: Explosive Ordnance Safety Program (EOSP) requirements often need to be adapted for the platform on which the EO is used. Advice should be sought from the Directorate of Ordnance Safety (DOS), which provides advice on behalf of the Explosive Ordnance Safety Regulator.

Drafter's Action: Drafters are to consult with the relevant ADF authority to determine if an ADF regulatory / assurance framework should apply to the Contractor. If not applicable, then the clauses under clause 4.1.3 should be replaced with a single 'Not used'.

If ADF regulatory / assurance requirements are applicable, drafters should seek advice from the relevant ADF regulatory / assurance authority to ensure that the draft SOW and associated DIDs represent the most up-to-date requirements.

Related Clauses: Clause 4.1.1, Engineering Organisation and Planning

Clause 4.6.6, System Safety Program

Clause 4.6.8, System Certification

DID-ENG-AEOA (from *ASDEFCON (Support)*) defines the requirements for an application for engineering organisation approval applicable to each environment.

Further Reading: Nil

4.1.4 Maintenance Organisation and System Compliance

Status: Optional (required if an ADF regulatory / assurance framework requirements apply to maintenance performed on GFE and/or Supplies during the Contract)

Purpose: To ensure that, when applicable, maintenance is performed in accordance with ADF regulatory / assurance framework requirements.

Policy: DEFLOGMAN Part 2 Volume 10 Chapter 2, *Materiel Maintenance Policy*

ANP3411-0101, *Naval Materiel Assurance Publication*

DASR

TRAMM-L (or LMSM when released)

DEOP 100 Volume 2 Part 2 Chapter 3, *Explosive Ordnance Materiel Safety Regulations*

Guidance: Where the Contractor may be required to perform maintenance on Materiel System components (eg, GFE and Supplies) during the Contract, the ADF regulatory / assurance framework requirements for the applicable environment may need to be applied. For example, maintenance may need to be performed on GFE or Supplies during an extended AV&V program (ie, field tests and trials). It is important that maintenance is performed by capable maintenance organisations to ensure on-going safety, to assist in the capture of failure data to identify defects and plan regression testing, and to ensure that an accurate maintenance history is available (to be transferred) when the system / component is Accepted.

If regulation / assurance of the Maintenance organisations is not required, or is addressed through the authorisation / accreditation of the production organisation, then the clauses may be replaced with a single 'Not used'.

Aerospace: The objective of this clause is to ensure an appropriate maintenance-management framework is in place to ensure the continuing airworthiness of aircraft, and aerospace products, that are subject to maintenance during the Contract.

An organisation may need to be approved as a DASR 145 Maintenance Organisation, or maintenance activities may be conducted by an organisation approved as a production organisation; hence; individual contract requirements may vary for the Contractor-Subcontractor work allocation. The DASA should be

consulted for advice regarding the applicability of the DASR 145 regulations to maintenance under a project.

Note: At the time of template release, aerospace was transitioning to the DASR. Drafters should seek advice from the DASA for the clarification of requirements during the implementation / change-over period.

Land: The objective of this clause is to ensure an appropriate maintenance-management framework is in place to enable the continued mission worthiness of nominated systems. The Contractor for the nominated systems may be required to comply with applicable requirements of the TRAMM-L. Commonwealth review of documented maintenance processes and record-keeping may be required, as well as audits to ensure compliance with the TRAMM-L. Advice from DTR-A should be sought when applying these clauses.

Note: At the time of template release, the Land regulatory environment was transitioning to a new framework based on the LMSM. Drafters should seek advice from the DTR-A for clarification of requirements during the implementation period.

Maritime: The objective of this clause is to ensure an appropriate maintenance-management framework is in place to enable the continued seaworthiness of vessels. The Contractor may be required to comply with the applicable requirements of ANP3411-0101. Commonwealth review of documented Maintenance processes and record-keeping may be required, as well as audits to ensure compliance with ANP3411-0101 requirements.

Note: At the time of template release, Navy technical regulations were transitioning to the Materiel Seaworthiness Assurance Framework. Drafters should seek advice from the NMSwAA for clarification of requirements during the implementation period.

Electronic: Requirements for electronic systems may be dependent on a host platform or specific interfaces with aerospace, land and maritime systems. Advice should be sought from the relevant authority for the applicable environment(s).

Explosive Ordnance: The template does not include clauses for EO regulations. In cases where maintenance of EO is applicable, drafters should refer to DEOP 100 Volume 2 Part 2 Chapter 3, *EO Materiel Safety Regulations*. DOS should be consulted regarding regulatory requirements that apply to individual programs.

Drafter's Action: If regulatory / assurance requirements for maintenance are not applicable, or are already addressed through production organisation approvals / accreditation, then the clauses in the SOW template should be replaced with a single 'Not used'.

If regulatory / assurance requirements are applicable to maintenance, drafters should seek advice from the relevant authority to ensure that the SOW clauses, and associated DIDs represent the most up to date requirements.

Related Clauses: Clause 4.1.1, Engineering Organisation and Planning

Clause 7.1.8, Regression Testing, requires maintenance actions during the V&V program to be recorded.

DID-ENG-AMOA (from *ASDEFCON (Support)*) defines requirements for an application for Maintenance organisation approval.

Further Reading: Nil

4.1.5 Conduct of System Reviews

Status: Core

Purpose: To require the Contractor to conduct MSRs and Internal System Reviews in accordance with an Approved SRP.

Policy: Refer to guidance for clause 4.1 above.

DMH (ENG) 12-2-001, *Materiel System Review Guide*

Guidance: Clause 4.1.5 defines the procedural requirements for System Reviews.

In accordance with the Glossary:

a. A *System Review* is 'an event at which the progress of the technical effort (including that of engineering and integrated logistics support) is assessed relative to its governing plans and technical and contractual requirements'.

b. A *Mandated System Review* means 'a System Review that is mandated in the Contract'.

c. An *Internal System Review* means 'a System Review, other than a MSR, that the Contractor or Subcontractor conducts as part of the program of activities for the Contract'.

The term 'System Review' replaces historical terms such as 'technical review' and the SRP replaces the Technical Review Plan or Technical Review and Audit Plan. The intent is to encourage progressive development and Commonwealth review of products for a particular development phase. The System Review meeting should be a checkpoint that ensures all activities for a phase have been addressed. Commonwealth Representative participation is essential for MSRs. If optional clauses are included in the SOW, then the Commonwealth Representative may also attend Internal System Reviews.

The SRP describes the Contractor's organisation, responsibilities and procedures for the conduct of the System Review program. The SRP also describes the reviews to be carried out; the scheduling, sequencing and interrelationships between these reviews and key milestones of the engineering program.

System Reviews include SE reviews, the IBR, Configuration Audits, and ILS reviews. Accordingly, project office personnel from each of the relevant disciplines should review of the SRP.

Checklists define the objectives and entry and exit criteria for each MSR. They help to ensure that both parties have a clear understanding of review requirements and achievement of review milestones. The *ASDEFCON (Strategic Materiel)* template includes 18 checklists covering the MSRs listed below. Where additional MSRs are required, new checklists should be prepared using the existing checklists as a template. MIL-STD-1521B, although cancelled, may also provide useful information to help develop checklists for any additional reviews.

Most template checklists can be included in the RFT without amendment. These are tailored by the Contractor through the preparation of their SRP. A status column in each checklist identifies which review items are mandatory and which are highly desirable and, therefore, more open to change by the Contractor. The main exception is the SAA checklist, which must be tailored by the drafter and not tailored by the Contractor's SRP – in this instance the status column informs the drafter of which criteria may, or should, be tailored. If the objectives, entry and exit criteria for more than one review can be met at the same time (eg, DDR and SSDDR) then those reviews may be conducted simultaneously.

The SOW template identifies the following MSRs:

a. IBR – Integrated Baseline Review (applicable to all Contract activities);

b. SRR – System Requirements Review (for the Mission System and Support System);

c. SDR – System Definition Review (for the Mission System and Support System);

d. PDR – Preliminary Design Review;

e. DDR – Detailed Design Review;

f. SSDDR - Support System Detailed Design Review;

g. TARR – Task Analysis Requirements Review;

h. LLTIR – Long Lead Time Items Review;

i. PPR – Provisioning Preparedness Reviews for Spares, S&TE, and Training Equipment;

j. FACRR – Facilities Readiness Review;

k. TNGRR – Training Readiness Review;

l. TXRR – Transition Requirements Review;

m. TRR – Test Readiness Review;

n. FCA – Functional Configuration Audit (for the Mission System and Support System Components);

o. PCA – Physical Configuration Audit (for the Mission and Support System Components); and

p. SAA – System Acceptance Audit.

ILS participation at SE MSRs ensures coordination between ILS and SE programs. Supportability characteristics of the Mission System design are addressed at MSRs, and the impact of the Mission System's design on the Support System can be evaluated on whole-of-system terms. LCC, under clause 3.11, also assesses the Mission System and Support System for total LCC, which is one of the Contractor's primary obligations at the MSRs.

If included, optional clauses 4.1.5.12 to 4.1.5.14 ensure that the Commonwealth is invited to the Contractor's Internal System Reviews and/or is provided with documented outcomes from Internal System Reviews. These options should be considered based on program risk and the value to the Commonwealth of added insight. These clauses can be relevant where the Contractor conducts additional reviews, such as formal requirements reviews with major subcontractors or reviews for each build of a multiple-build development strategy. These clauses are not intended to be used for lower level review processes, such as individual document reviews, but they may have applicability in low-level development processes, for example, in respect of a design walkthrough for a critical software element. The clause allows Commonwealth involvement to be optional - the Commonwealth is invited but attendance would be determined on a criticality / risk basis.

Depending on the particular program, some reviews will be held a number of times (eg, a TRR may be held before each AV&V phase) and other reviews may be added. For example, a Production Readiness Review may be held for a program with a significant production-line process, particularly if following individually built prototypes. Some projects have also included a Training Needs Review, to review all new Training requirements before starting Training Materials development.

The Commonwealth needs to determine a set of MSRs that provide sufficient insight into the Contractor's program. MSRs should occur often enough to provide that insight, before the Contractor commits significant effort 'at risk' (eg, working on unconfirmed requirements). This needs to be balanced by intervals between MSRs that are long enough to enable the Contractor to make useful progress.

A number of MSRs would normally be identified as Stop Payment Milestones in the Schedule of Milestone Entry and Exit Criteria, in Annex C to Attachment B, and subject to the provisions in clause 7.9 of the COC.

Drafter's Action: If Contract work will be undertaken at a number of locations, consideration should be given to the most suitable location to meet the objectives of the MSRs (eg, Contractor or Subcontractor premises). This should be reflected by tailoring SOW clause 4.1.5.3. The location should consider the best setting for access to the appropriate people and equipment, to ensure the success of the review at acceptable cost to the Commonwealth.

Drafters are to ensure that MSR checklists are included in Annex D. While most checklists may be included without amendment, MSR-CHECKLIST-SAA needs to be tailored and new checklists may need to be developed for any additional reviews where no checklist is currently available from the template.

Drafters are to identify which MSRs will be Stop Payment Milestones and include the entry and exit criteria in Annex C to Attachment B (by referencing the checklists).

The drafter also needs to consider the options for attendance and visibility of Internal System Reviews (ie, as reflected in clauses 4.1.5.12 to 4.1.5.14).

Related Clauses: Clause 3.2.5, Earned Value Management System, includes the IBR.

Clause 4.2.4, System Requirements Review

Clause 4.2.5, System Definition Review

Clause 4.3.1, Preliminary Design Review

Clause 4.3.2, Detailed Design Review

Clause 5.1.2.2, Mandated System Reviews (for the ILS program)

Clause 6.7, Configuration Audits

Clause 7.1.5, Test Readiness Reviews

Clause 8.5, System Acceptance Audit

Clause 7.9 of the draft COC, Stop Payment

Annex C to Attachment B, Schedule of Milestone Entry and Exit Criteria

Annex D, List of MSR Checklists

Checklists (MSR-CHECKLIST-XXX) for each MSR.

DID-ENG-RVW-SRP defines the requirements for the SRP.

DID-ENG-RVW-PACKAGE specifies delivery requirements for the information considered at System Reviews.

Further Reading:

DMH (PROJ) 11-0-002 *Integrated Baseline Review Handbook*

DMH (ENG) 12-2-001 *Defence Materiel System Review Guide*

EIA-632 Requirement 11, Technical Reviews, and Annex E, *System Technical Reviews*

MIL-STD-1521B *Technical Reviews and Audits for Systems, Equipments, and Computer Software*

4.1.6 Independent Review Team

Status: Optional. To be included if the Commonwealth requires the Contractor to appoint an independent review team.

Purpose: To require the Contractor to appoint an independent review team of appropriately qualified subject matter experts, who have not contributed to the elements under review, to participate in each MSR.

Policy: Refer to clause 4.1 above.

Guidance: Clause 4.1.6 ensures an independent level of review for Contracts with a high-risk profile. The use of an in-house peer review team enhances company-level visibility and encourages the Contractor to make use of other expertise in the company. This approach may be warranted when, for example:

a. the Contract's risk profile is high;

b. the Contract needs a particularly broad range of expertise or requires teams that are difficult to assemble and maintain; or

c. the system has safety or mission criticality coupled to significant complexity, or the specialist domain areas are exceptionally narrow.

Of course, the Contractor's organisation must have the ability to support an independent review for this approach to be viable.

This approach may be used in conjunction with, or independently from, the IV&V program under SOW 3.10, and may be less expensive than an IV&V program, although perhaps not as effective.

Drafter's Action: The drafter needs to decide if these clauses are warranted based on the risk profile of the Contract, as discussed above. If not required, the clauses can be replaced with a single 'Not used'.

Related Clauses: Clause 3.10, Independent Verification and Validation

Further Reading: Nil

4.1.7 Technical Performance Measures

Status: Core

Purpose: To require the Contractor to establish a set of Technical Performance Measures (TPMs) to ensure that user needs are traceable to measurable design criteria through the System Specification.

Policy: Refer to clause 4.1 above.

Guidance: TPMs provides an early warning of the adequacy of a design in terms of its ability to satisfy selected critical performance parameter requirements of a system end product. Use of TPMs provides an analysis and control technique that is used to:

a. project the probable performance of a selected technical parameter over a period of time;

b. record the actual performance observed of the selected parameter; and

c. through comparison of actual versus projected performance, assist the manager in decision making.

A well thought-out program of TPMs provides an early warning of technical problems. It also supports assessments of the extent to which operational requirements will be met, as well as assessments of the impacts of proposed changes in system performance.

Parameters to be tracked are typically based on the combined needs of the Commonwealth and Contractor. The Commonwealth will need a set of TPMs that:

a. provides visibility into the technical performance of key elements of the product breakdown structure, especially those that are cost drivers;

b. lie on the critical path; and/or

c. represent high risk items.

The TPMs selected for delivery to the Commonwealth are expected to be traceable to the needs of the operational user through the Critical Operational Issues (COIs), Measures Of Effectiveness (MOEs), Measures Of Suitability (MOSs) and Measures Of Performance (MOPs), which could be documented in the OCD, Function and Performance Specification (FPS), SS, SSSPEC and/or the Design Documents.

A typical TPM profile will take a form somewhat like that shown in Figure 1. The actual form of the projected performance profile and whether or not tolerance bands are employed will be a function of the parameter selected and the needs of the project office.

TPMs should include parameters that relate to both the Mission System and Support System, and may typically include items such as Mean Time Between Failure (MTBF) and Mean Time To Repair (MTTR). In general, TPMs should not merely reiterate SS requirements with which the Contractor is compliant, unless there is significant risk in the Contractor meeting that requirement and the requirement is critical to operational performance.

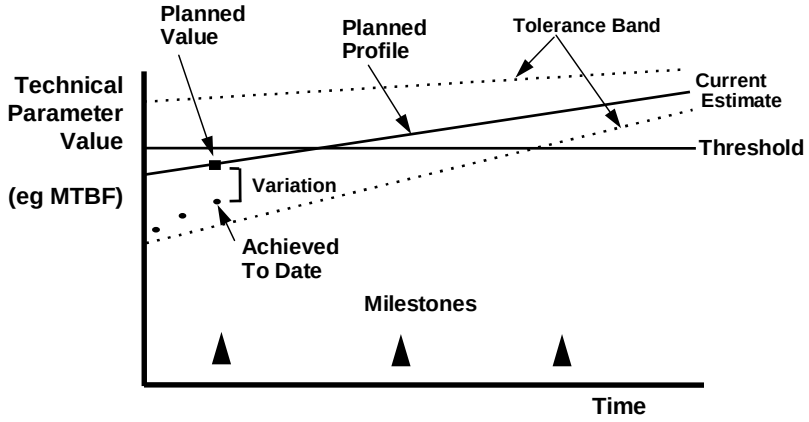


Figure 1: Conceptual Technical Performance Measure

TPMs may often reflect design goals and may be linked to incentive payments (refer COC clause 7.11). In this case, they should be precisely defined, directly related to specific measurable criteria (as opposed to estimates), and be of direct operational benefit to the ADF. Any assumptions or estimated values, such as those in a model to relate parameters to operational measures, should be agreed in the Contract.

TPMs can also be useful to track when they address aggregated measures that can be estimated or accrued from a number of sub-measures. This could be true, for example, when SS parameters have been derived through the use of models and assumptions. A Contractor may meet or exceed each of these derived parameters, but the aggregated measure could be significantly better. For example, with low-level measures of vehicle speed and carrying capacity, the aggregated MOE may be the time taken to deliver 100 m^3 of equipment to a site 10 km distant. This time would depend on both speed and carrying capacity and may more accurately reflect the operational need (time to deliver a given volume). Trade-offs in the lower level specifications may be easier to consider in this 'operational space' rather than in the 'design space'.

Management of TPMs are documented in the Measurement Plan along with all other measures relevant to the Contract.

Drafter's Action: This clause needs to be tailored, depending upon the previous work conducted by the Commonwealth (eg, relating to COIs and MOPs documented in the OCD).

Particular TPMs may be mandated by the Commonwealth or developed in conjunction with the Contractor, usually based on an evaluation of risk. Where TPMs are mandated, they should be specified here in an additional clause.

TPMs may also need to be monitored more frequently than at each design-related MSR – this need should be tailored to suit the requirements of the Contract's objectives and defined in additional sub-clauses.

Related Clauses: Clause 7.11 of the draft COC, Incentive Payments

Clause 3.2.6, Measurement and Analysis

Further Reading: DMH (ENG) 12-2-002 *Capability Definition Documents Guide*

4.2 System Definition

Status: Core

Purpose: To establish Contractor requirements for undertaking system-level requirements-related analysis activities and system definition activities during the system definition phase. This includes review of the OCD, Validation of system requirements, and requirements for the MSRs in this phase.

Policy: Refer to guidance for clause 4.1.

Guidance: Refer to guidance for subclauses.

Drafter's Action: Nil

Related Clauses: Nil

Further Reading: Nil

4.2.1 Operational Concept Document

Status: Core

Purpose: To define the Contractor's responsibilities with respect to the management of the OCD and maintaining consistency with the SS.

Policy: Functional Policy (ENG) 12-3-001, *Requirements Engineering*

Guidance: Clause 4.2.1 defines the management of the OCD in the Contract. The project will have an existing OCD that has been developed during the capability-development / requirements setting phase. This OCD is placed on Contract and can only be changed through CCP action and with the agreement of the project sponsor / end user. Changes may need to occur as implementation details require clarification (eg, limitations in dimensional system parameter space – if it is likely that not all parameters can simultaneously be at their extreme values, and an appropriate operational region within this space needs to be defined).

These clauses, and their equivalent for the Support System in clause 5.2.2, highlight that the OCD, the SS and the SSSPEC are to remain in lockstep over the life of the Contract. This approach has been adopted because the OCD is a significant determinant of the fitness for purpose of the resulting Mission System and Support System. While the SS and SSSPEC define the specification requirements against which Mission System and Support System Acceptance Verification is conducted, the OCD remains the basis against which Acceptance Validation is conducted, which leads to System Acceptance.

Drafter's Action: Clause 4.2.1 is to be included in the RFT without alteration.

Related Clauses: Clause 5.2.2, Support System Definition

Clause 7.2.3, Acceptance Verification

Clause 7.2.4, Acceptance Validation

Clause 8.5, System Acceptance Audit

DID-ENG-DEF-OCD defines the content requirements for the OCD.

Further Reading: DMH (ENG) 12-2-002, *Capability Definition Documents Guide*

Defence Capability Development Handbook

DI(G) OPS 45-02, *Capability Acceptance Into Operational Service*

4.2.2 System Requirements Validation

Status: Core

Purpose: To require the Contractor to develop and Validate the SS for the Mission System, with traceability to the OCD and FPS, and to establish the SS as the basis for the Mission System FBL.

Policy: Functional Policy (ENG) 12-3-001, *Requirements Engineering*

Guidance: Clause 4.2.2 requires the Contractor to develop an SS, which encapsulates a clear, unambiguous set of requirements that define the Mission System and that can be used as a basis for further development and Verification.

The Contractor is expected to develop and Validate a set of requirements for the Mission System (ie, the SS) and the Support System (ie, the SSSPEC) based on the FPS and the OCD at Annexes A and B to the SOW. Requirements development and requirements validation activities are described in EIA-632.

Drafters using the *ASDEFCON (Strategic Materiel)* template are advised to review the requirements-validation sections of EIA-632, including Sections 4.3 and 4.5.2 and the sub-elements of Annex C to clarify the relevant requirements in that standard (ie, Requirements 14, 15, 16, 19, 25, 26, 27 and 28). The requirements-validation processes for the Mission System will be conducted in accordance with the Approved SEMP and those for the Support System in accordance with the Approved ISP (refer to guidance for clause 5.2.2). Commonwealth SE and ILS staff should liaise with each other when reviewing the Contractor's SEMP and ISP to ensure that a viable and integrated requirements-validation program is planned.

The requirements-validation process is one of the most significant elements of the design process for a Mission System. Inadequate requirements definition is a well-known cause of project failure and the requirements-validation process is intended to ensure that individual requirements and the full set of requirements are valid and understood by all parties. There are likely to be new and modified requirements arising out of the requirements-validation phase, as well as requirements that need to be deleted. These changes could result in changes to the Contract Price (requiring a CCP), and the Commonwealth project team should review any such changes with diligence. There is likely to be considerable benefit in conducting requirements-validation in an ODIA phase or other pre-contract work and it is recommended that Commonwealth project teams consider this approach.

In developing the SS and SSSPEC, the Contractor is required to maintain traceability to the input documents (refer Figure 2, below). Every requirement in the FPS must trace to either the SS or the SSSPEC ('downward traceability') with accompanying rationale for any changes or refinements. The SS and SSSPEC should contain more detail then the FPS, much of which may come from interpretation of the OCD. Hence, the SS and the SSSPEC traceability should be to either the FPS or OCD or both (upward traceability), again with appropriate rationale for any interpretations. This traceability is expected to be captured in the Requirements Traceability Matrix (RTM) of SOW clause 4.5.2.

The FPS and OCD represent CASG's agreement with the Capability Manager on the capabilities of the Materiel System to be delivered, and may be referred to as the 'Acquisition Baseline'. As such, they are not expected to change over the life of the Contract. However, during the Contractor's development activities, it may be necessary for the Contractor to propose SS or SSSPEC requirements that would conflict with, or limit the generality of, the FPS (or OCD), typically due to the feasibility of implementation. This is ideally resolved during pre-contract activities. In all cases the Commonwealth Representative needs to gain internal Defence approval for a change. Under contract, the SOW allows for this process through clause 4.2.2.4, which asks the Contractor to submit an Application for a Deviation for Approval. The Deviation process allows the Contractor to continue developing the SS when FPS changes would be protracted.

As part of the requirements-validation process, the Contractor will be updating, and providing more detail in, the VCRM that accompanies the SS (refer clause 7.1.3). Commonwealth project staff should ensure that the updated VCRM:

a. is consistent with the VCRM that was placed on Contract; and

b. will result in adequate Verification of the Mission System.

For further information on V&V, refer to clause 7 in this Guide.

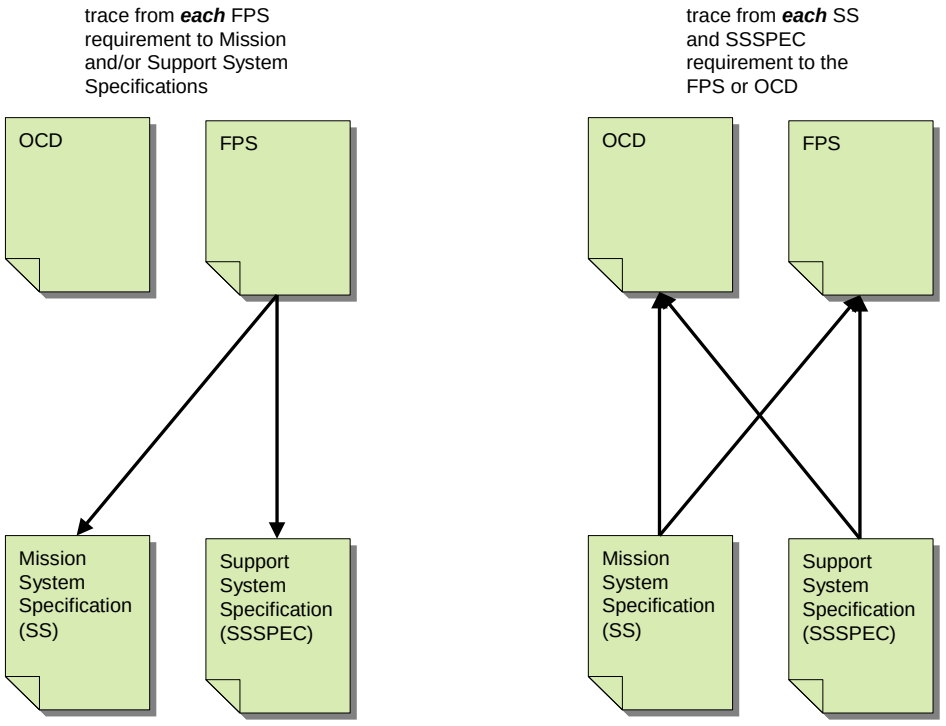


Figure 2 – Traceability from FPS and OCD to SS and SSSPEC

The Contractor is required to raise a CCP in accordance with clause 11.1 of the COC to establish the SS as the basis for the Mission System FBL and the basis for the future development and Verification of the Mission System.

Through the requirements-validation process, deficiencies may be identified in the FPS, even though the FPS is not normally expected to change during the Contract. Clause 4.2.2.4 specifies that any proposed requirements in the SS or SSSPEC that conflict with the FPS need to be managed as a Deviation (through clause 8.4). Approved Deviations record the rationale and traceability required by clause 4.2.2.3. A similar process is defined for the SSSPEC in clause 5.2.2.1.

Drafter's Action: The drafter is to define the expected time-frame for CCP approval of the SS and SSSPEC in the CDRL. Clause 4.2.2 is to be included in the RFT without alteration.

Related Clauses: Clause 4.5.2, Design Traceability

Clause 5.2.2.1, Support System Requirements Validation

Clause 7.1.3, Verification Cross Reference Matrix

Clause 8.4, Non-Conforming Supplies (re: Application for a Deviation)

Clause 11.1 of the COC, Change to the Contract (for processing of CCPs)

Further Reading: Functional Handbook (ENG) 12-3-001 *Requirements Management Guide*

Functional Handbook (ENG) 12-3-002 *Requirements Analysis Guide*

DMH (ENG) 12-2-003 *Capability Definition Documents Guide*

EIA-632 *Processes for Engineering a System*

4.2.3 Mission System Logical Solution Representations

Status: Core

Purpose: To require Contractor to define and document a validated set of Logical Solution Representations for the Mission System.

Policy: Refer to guidance for clause 4.1.

Guidance: All complex developmental designs should have defined Logical Solution Representations. Logical Solution Representation is a generic term, from EIA-632, for process diagrams, functional flow diagrams, product / functional hierarchies, logic maps, timing diagrams and any other representation used to illustrate the function of a system. These are often included in specifications and design documents; hence, clause 4.2.3 covers the work activity to develop Logical Solution Representations while the results are included in specifications and design documents delivered in accordance with subsequent clauses.

Drafter's Action: This clause may be included in the RFT without alteration.

Related Clauses: SOW clause 4.2.2, System Requirements Validation

SOW clause 4.5.1, Technical Documentation Tree

SOW clause 4.5.5, System Models

Further Reading: EIA-632 *Processes for Engineering a System*

4.2.4 System Requirements Review

Status: Core

Purpose: To require the Contractor to undertake a SRR as a MSR.

Policy: Refer to guidance for clause 4.1.

Guidance: The SRR is intended to Validate that the set of system requirements is complete, consistent with the Commonwealth's intent, and understood by the supplier / developer of the system. The SRR should address requirements the Mission System, in the draft SS, and the Support System, in the draft SSSPEC (refer clause 5.1.2.2).

For each review, the Commonwealth is to (from EIA-632):

a. ensure that the review objectives and requirements are adequately defined (noting that these should be captured in the standard MSR checklists);

b. determine progress against the event-based plan and CMS, noting that:

   (i) relevant events and interdependencies should be captured in the SRP; and

   (ii) clause 4.1.5 requires all entry criteria to be met before the review may be held;

c. establish the technical review board, agenda and speakers, which are captured in the review agenda, as defined in SOW clause 4.1.5;

d. prepare technical review package and presentation material, which is captured in the review package as defined in SOW clause 4.1.5;

e. facilitate resolution of emerging issues, noting that Commonwealth insight through regular progress meetings (SOW clause 3.9.1) should provide visibility of issues and allow appropriate preparatory work before the review;

f. conduct the review as per SOW clause 4.1.5; and

g. close out the review in accordance with SOW clause 4.1.5, in particular ensuring that all exit criteria as defined in the SRP have been met (noting that the SRP contains the exit criteria from the relevant checklist).

Refer to the guidance for clause 4.1.5 regarding the general conduct of reviews.

Drafter's Action: This clause may be included in the RFT without alteration. Drafters are to ensure that MSR-CHECKLIST-SRR meets the requirements of the Contract, and is included in Annex D. In general, this checklist should not be amended.

Related Clauses: Clause 3.11, Life Cycle Cost

Clause 4.1.5, Conduct of System Reviews

Clause 5.1.2.2, Mandated System Reviews (for the ILS program)

Annex D, List of MSR Checklists

MSR-CHECKLIST-SRR includes entry, review and exit criteria for the SRR.

DID-ENG-RVW-SRP defines requirements for the SRP.

Further Reading: DMH (ENG) 12-2-001, *Defence Materiel System Review Guide*

EIA-632, *Processes for Engineering a System*

4.2.5 System Definition Review

Status: Core

Purpose: To require the Contractor to undertake an SDR as a MSR.

Policy: Refer to guidance for clause 4.1.

Guidance: The purpose of the SDR is to evaluate the optimisation, traceability, correlation, completeness, and the risk of the allocated requirements in fulfilling the system / subsystem requirements (the FBLs) for the Mission System and the Support System (refer clause 5.1.2.2).

The review encompasses the total system requirements (ie, operations / maintenance / test / Training hardware, Software, Facilities, Personnel, and preliminary logistics-support considerations). Also included is a summary review of the SE management activities (eg, mission and requirements analysis, functional analysis, requirements allocation, manufacturing methods / process selection, program risk analysis, system / cost effectiveness analysis, logistics support analysis, trade studies, intra- and inter-system interface studies, integrated test planning, specialty discipline studies, and Configuration Management) which produced the system definition products. A technical understanding shall be reached on the validity and the degree of completeness of the following:

a. the operational concept in the OCD, including consideration of any proposed changes or inconsistencies identified through the Contractor's activities;

b. the Mission System Specification;

c. all external interfaces to the system;

d. the engineering design / cost of the system; and

e. requirements for component subsystems and developmental items (defined in hardware, interface and software specifications, as applicable).

Although the SS and SSSPEC may be agreed at the SDR, they are not formally incorporated into the Contract until the relevant CCP is Approved by the Commonwealth Representative.

Refer to the guidance for clause 4.1.5 regarding the general conduct of reviews.

Drafter's Action: This clause may be included in the RFT without alteration. Drafters are to ensure that MSR-CHECKLIST-SDR meets the requirements of the Contract, and is included in Annex D. In general, this checklist should not be amended.

Related Clauses: Clause 3.11, Life Cycle Cost

Clause 4.1.5, Conduct of System Reviews

Clause 5.1.2.2, Mandated System Reviews (for the ILS program)

Annex D, List of MSR Checklists.

MSR-CHECKLIST-SDR includes entry, review and exit criteria for the SDR.

Further Reading: DMH (ENG) 12-2-001, *Defence Materiel System Review Guide*

EIA-632, *Processes for Engineering a System*

4.2.6 Requirements Working Groups

Status: Optional

Purpose: To require the Contractor to coordinate and participate in Requirements Working Groups during the system definition phase.

Policy: Refer to guidance for clause 4.1.

Guidance: The purpose of the Requirements Working Group is to ensure that the parties have a consistent understanding of the requirements and to agree an adequate and appropriate preliminary allocation of requirements.

The most effective working groups will be as inclusive as possible. Note that clause 4.2.6.6 obliges the Contractor to ensure that, where possible and where relevant, Approved Subcontractors, the Contractor (Support) and Approved Subcontractors (Support) participate.

Drafter's Action: Drafters are to review the minimum number of meetings required at clause 4.2.6.3 and tailor as required.

Related Clauses: Nil

Further Reading: Nil

4.3 System Design

Status: Core

Purpose: To ensure that the Contractor undertakes appropriate design reviews during the system design phase and that the entry and exit criteria for these MSRs meet agreed Defence objectives.

Policy: Refer to guidance for clause 4.1.

Guidance: Refer to guidance for subclauses.

Drafter's Action: Nil

Related Clauses: Nil

Further Reading: Nil

4.3.1 Preliminary Design Review

Status: Core

Purpose: To require the Contractor to conduct a PDR as a MSR.

Policy: Refer to guidance for clause 4.1.

Guidance: The PDR is focused at the Configuration Item (CI) level and is conducted to evaluate the basic design approach for a CI or for a functionally related group of CIs. The PDR is used to ensure that all sub-system and enabling product building blocks have been defined appropriately and that all sub-system building block designs satisfy their parent requirements. It also ensures that approaches to the next level of design have been appropriately planned and that risks are identified with appropriate mitigation strategies in place.

For a CI, the PDR may be accomplished as a single event, or separate reviews spread over several events, depending on the nature and the extent of the development of the CI, and the requirements in the SOW. A collective PDR for a group of CIs, treating each CI individually, may be held when such an approach is

advantageous to the Commonwealth Representative; such a collective PDR may also be spread over several events. The overall technical program risks associated with each CI shall also be reviewed on a technical, cost, and schedule basis. For Software, a technical understanding needs to be reached on the validity and completeness of the Software architecture, Software test approach, and the proposed Software support and Transition plans.

PDRs may be held for selected Support System Components (eg, developmental S&TE and Training Equipment) but a PDR is not conducted for the whole Support System. However, the PDR for the Mission System has significant implications for the Support System (eg, reliability and maintainability of the Mission System dictates the type and frequency of maintenance required). Trade-off between the Mission System and Support System (eg, built-in versus stand-alone S&TE) and Mission System interface requirements for Support System Components should also be addressed. Additionally, the PDR must address the design of the Mission System in the context of the LCC requirements under clause 3.11.

Refer to the guidance for clause 4.1.5 regarding the general conduct of reviews.

Drafter's Action: The template clause implies a single PDR. Drafters may define how the PDR will be conducted (eg, a single PDR at system level or a PDR for relevant system elements) and amend the clauses as appropriate, or leave this for the Contractor to define in the SRP. Regardless of how the reviews are defined, at least one element of the PDR should address the entire Mission System and Support System in a holistic sense.

Drafters are to ensure that MSR-CHECKLIST-PDR meets the requirements of the Contract and is included in Annex D. In general, this checklist should not be amended.

Related Clauses: Clause 3.11, Life Cycle Cost

Clause 4.1.5, Conduct of System Reviews

Clause 5.1.2.2, Mandated System Reviews (for the ILS program)

Annex D, List of MSR Checklists

MSR-CHECKLIST-PDR includes entry, review and exit criteria for the PDR.

Further Reading: DMH (ENG) 12-2-001 *Materiel System Review Guide*

EIA-632 *Processes for Engineering a System*

4.3.2 Detailed Design Review

Status: Core

Purpose: To require the Contractor to conduct a DDR as a MSR.

Policy: Refer to guidance for clause 4.1.

Guidance: The DDR is focused on the 'detailed design' at the CI level and is conducted to ensure that specifications, drawings, and Software development documentation are appropriately defined; that building block end product designs satisfy parent requirements; and that the building blocks are either ready for further development, adequately defined for procurement, or adequately defined for fabrication.

The DDR is conducted on each CI prior to fabrication / production / coding release, to ensure that the detailed design solutions, as reflected in the draft hardware product specification, detailed design section of the Software Design Description (SDD), Data Base Design Document(s) (DBDD(s)), Interface Design Document(s) (IDD(s)), and engineering drawings satisfy the requirements established by the hardware development specification and architectural design section of the SDD, as applicable. For complex CIs the DDR may be conducted on an incremental basis (ie, progressive reviews are conducted versus a single DDR). The overall technical program risks associated with each CI shall be reviewed on a technical (design and

manufacturing), cost, and schedule basis. For Software, a technical understanding needs to be reached on the validity and the degree of completeness of the Software architecture, the Software test approach, and plans for Transition and Software support.

Additional in-progress reviews may be scheduled post-DDR to:

a. respond to outstanding action items;

b. address modifications necessitated by approved ECPs or design / program errors;

c. update sizing and timing data;

d. update design information, as applicable; and

e. address results obtained during developmental testing, including problems encountered and the solutions implemented or proposed.

DDR may address selected Support System Components to be developed but the Support System is not explicitly addressed at the Mission System DDR; instead a separate Support System DDR (clause 5.1.2.3) is held but may be combined with DDR if agreed by both parties. However, DDR covers issues that have significant implications for the Support System (eg, reliability and maintainability of the Mission System, the need for operating support and external test equipment (as opposed to built-in) and, if specified in the SOW, updates to the LSAR). The DDR must also demonstrate the achievement of global LCC requirements (clause 3.11) in that, with respect to Mission System design, all of the implications for the Support System have been addressed so that a minimised LCC solution will be provided.

Refer to the guidance for clause 4.1.5 regarding the general conduct of reviews.

Drafter's Action: The template implies a single DDR; however, drafters may define how the DDR will be conducted (eg, a single DDR at system level or a DDR for each relevant system element) and amend the clauses as appropriate, or leave this for the Contractor to define in the SRP. Regardless of how the reviews are defined, at least one element of the DDR should address the entire Mission System, and implications for the Support System, in a holistic sense.

Drafters are to ensure that MSR-CHECKLIST-DDR meets the requirements of the Contract, and is included in Annex D. In general, this checklist should not be amended.

Related Clauses: Clause 3.11, Life Cycle Cost

Clause 4.1.5, Conduct of System Reviews

Clause 5.1.2.2, Mandated System Reviews (for the ILS program)

Clause 5.1.2.3, Support System Detailed Design Review

Annex D, List of MSR Checklists.

MSR-CHECKLIST-DDR includes entry, review and exit criteria for the DDR.

Further Reading: DMH (ENG) 12-2-001, *Materiel System Review Guide*

EIA-632, *Processes for Engineering a System*

4.4 System Implementation

Status: Core (with optional subclauses)

Purpose: To require that the Contractor conforms to specific requirements during the implementation and integration of the design solution. These requirements relate to software and hardware development and project-specific activities such as the site-installation activities and interaction with the Commonwealth during the integration or use with GFE.

Policy: Refer to guidance for clause 4.1.

Guidance: Refer to guidance for subclauses.

Drafter's Action: Refer to subclauses.

Related Clauses: Nil

Further Reading: Nil

4.4.1 General

Status: Core

Purpose: To require the Contractor to address any Contract-specific requirements relating to system implementation and integration.

Policy: Refer to guidance for clause 4.1.

Guidance: This clause is to be tailored to address Contract-specific requirements relating to system implementation and integration, including for interfaces with specific Commonwealth or Contractor (Support) Facilities, GFM, and for Software.

This clause will often require significant tailoring and be the subject of significant negotiations pre-contract. Judgements are required about what information is included in these 'implementation' clauses versus what is included at clause 2.1, Scope, and the Contractor's plans (eg, the Site Installation Plan).

Many major projects involve the integration of a new Mission System with existing or modified infrastructure. Existing system elements may include Facilities and resources controlled by the Commonwealth or other parties, such as military bases, docking facilities, airfields, test ranges, equipment and Personnel. In this situation the Contractor is highly dependent on the Commonwealth for information and access, which can present a challenge if the Facilities, equipment and Personnel are not under the control of the Commonwealth Representative. Examples, of dependence, when systems are being installed at military bases, include the documentation needed for access, physical and electrical interfaces, noise being unsuitable, or site plans being incorrect. In some cases, it may be useful to include Contractor site survey visits to inform planning.

These situations can give rise to claims for excusable delay and/or additional costs due to deficiencies in Commonwealth data, equipment, or Facilities. Items within Facilities, such as Licenced Fittings, may not be listed as GFE/GFD/GFI/GFF under the Contract and yet, they can have similar impact on the Contractor's progress.

Care is required to plan the availability of resources and for the Commonwealth Representative to verify the adequacy and accuracy of data describing the Facilities and equipment, prior to providing it to the Contractor for use.

Challenges can also arise if multiple requirements are placed on one resource, such as when an integration and test Facility is also a Training Facility. Careful consideration is needed, such as how to address an increase in integration and test (to resolve problems) while maintaining a Training program. Careful planning and coordination with the Contractor and stakeholders is required to quickly resolve issues and minimise the potential for adverse claims or excusable delay.

Clause 2.1, Scope, may include an optional clause for 'System Implementation Precedence Requirements and Constraints' that outlines planning requirements, such as the Commonwealth's preferred sequence of rolling out systems across Defence sites. This clause may need to further address the relationship of site installation activities and access, access for test phases, needs for associated planning, and the ability of the Commonwealth to coordinate these with existing site activities (eg, to maintain operational capability during the installation period).

Given the duration between ED and installation, there needs to be a way to capture the detailed interactions that will develop in conjunction with the Contractor's design. One way of doing this is through a Site Installation Plan (SIP) to define

Commonwealth-Contractor agreements for later in the program, when the specifics of installation may be better defined. Clause 4.4.1.1 includes an optional clause to prepare a SIP and to follow the Approved SIP. For a Contract with only minor interactions, this plan could be combined into the Facilities Plan (FACP) under clause 5.2.8.7. However, the FACP is more static in nature and specifies the Facilities rather than detailing interactions during integration / installation.

Drafter's Action: Drafters should consider the most effective way to describe issues related to:

a. the interaction of the Contractor with Commonwealth Facilities and the need to carefully manage such interaction;

b. the relationship of program phases, including V&V phases, and Contractor access to Commonwealth Facilities; and

c. issues relating to Commonwealth property, other than that discussed in clause 3.13 for CMCA.

Once the above issues are considered, clause 4.4.1.1 should be tailored consistent with clause 2.1; the Scope clause outlining schedule and implementation issues.

The optional clauses under clause 4.4.1 allow for the delivery of a SIP. However, the drafter may need to provide a significant amount of supporting information and arrange site visits and/or specify more detailed Contractor conducted site surveys. Additional clauses may be needed to be developed to refer to these.

Drafters will need to determine what can be described and captured in this clause pre-contract, and what can be reasonably developed in the SIP. This may lead to a requirement to tailor DID-ENG-MGT-SIP.

Related Clauses: Clause 2.1.6, System Implementation Precedence Requirements and Constraints

Clause 3.13, Contractor Managed Commonwealth Assets

Clause 5.2.8.7, Facilities

Clause 5.3.6, Implementation of Facilities Requirements

Clause 7, Verification and Validation

Clause 3.7 of the COC, GFM – Provision and Management

Clause 3.9 of the COC, Commonwealth Property

Attachment E, Government Furnished Material

DID-ENG-MGT-SIP defines the content requirements for a SIP.

DID-ILS-FAC-FACP defines the content requirements for a FACP.

Further Reading: Nil

4.4.2 Software Development

Status: Core

Purpose: To require the Contractor to plan and manage the acquisition, supply, development, and implementation of Software.

Policy: Refer to guidance for clause 4.1.

Guidance: Clause 4.4.2 sets out the minimum standards for the management of the Software development and implementation program under the Contract.

The development and acquisition of Software-intensive systems involves a level of complexity that is inherently risky, and requires considerable planning and management effort to address. The complexity also makes estimating the effort and time to construct Software difficult, and the functions to be performed are not directly relatable to how much Software must be written. In the past, this complexity has been the cause of many project overruns and shortfalls.

CASG (and its predecessors) adopted a number of reforms to improve success when acquiring software-intensive systems. These reforms apply to the whole software life-cycle process starting with the acquirer defining requirements and including the tender process, the acquisition contract, and the support contract. Where applicable, reforms have been incorporated in the *ASDEFCON* templates.

Large Software-intensive systems require a full Software engineering, or 'software systems engineering', practices to be applied. They require the application of mature processes and sound planning to manage the complexity involved, and this begins with the acquirer. While *ASDEFCON (Strategic Materiel)* was born out of the need to better deliver software-intensive systems projects, there appears very little that is software specific from a casual review of the SOW. *ASDEFCON (Strategic Materiel)* relies on extensive planning and much more work and thought by the Commonwealth to develop system requirements, and then to monitor the Contractor's design, development and implementation program.

AS/NZS ISO/IEC 12207, *Software Life Cycle Processes* was selected as the default software standard for the *ASDEFCON* templates because it is covers the entire life cycle. *ASDEFCON (Strategic Materiel)* looks for the tailoring of 12207 to be reflected in the Contractor's Software Management Plan (SWMP).

Where additional standards, such as Radio Technical Commission for Aeronautics (RTCA)/DO-178B, are required by the applicable regulatory authority, the drafter should tailor these requirements into the SOW and/or FPS, as appropriate.

AS/NZS ISO/IEC 12207 identifies a large number of potential data products but does not specify requirements for data items. Accordingly, DID-ENG-SW-SWMP, which defines the requirements for a SWMP, is based on the industry accepted DI-IPSC-81427A with a tailoring instruction designed to gain visibility into the management capability and intentions of the tenderers / Contractor. DI-IPSC-81427A refers to a 'Software Development Plan' but the DID was re-titled to emphasise the 'management' of Software as it applies both to a contractor who performs Software development activities and to a contractor that will primarily manage the development and acquisition of Software through Subcontractors.

Following ASDEFCON principles, much of the software program work is defined through the Contractor's SWMP. DID-ENG-SW-SWMP covers the general requirements for an SWMP but, if required, it can be tailored for Contract-specific needs by adding tailoring instructions that modify the interpretation of the baseline DI-IPSC-81427A.

Note that tenderers are asked to submit a 'software engineering strategy' as part of the Systems Engineering Strategy, TDR E-1.3, and a draft Software List. Depending on the inclusion of pre-contract work, the Strategy may be developed into a complete SWMP, and Approved by ED, or retained on-contract and later replaced by the SWMP in accordance with clause 2.5.

Clause 4.4.2 requires the Contractor to develop and deliver both a SWMP and a SWLIST. Work is then conducted in accordance with the Approved SWMP, including the Software-related activities of Subcontractors.

The Software List (SWLIST, defined by DID-ENG-SW-SWLIST) requires the Contractor to perform some Software profiling, describing Software by type, size and expected development requirements. A draft SWLIST is also required in the tender response (TDR F-5). The SWLIST greatly assists in planning and will serve as a tracking mechanism for Contractor progress.

The integration of large complex software-intensive systems is a difficult activity and problems should be expected. The Commonwealth Representative should consider mechanisms for gaining visibility into the nature of the problems encountered and how they are to be analysed and resolved. One avenue for visibility is ensuring that appropriate measures are reported under the Measurement and Analysis program (see clause 3.2.6). The information can provide insight into the maturity of both the Mission System and Support System before it moves into a formal Verification phase.

The benefits of *ASDEFCON (Strategic Materiel)* for Software come from the integration of Software with other areas within the SOW. Not all of these links are visible but they include:

a. EVMS (clause 3.2.5), when reporting levels ensure that software items of interest will provide visibility into software progress;

b. Process Improvement (clause 3.2.6), when applied to specific areas of Software capability;

c. Measurement and analysis (clause3.2.7), provides insight into Software development and the information needed to make informed decisions; and

d. IV&V (clause 3.10)), which can be a highly effective surveillance technique for software-intensive projects.

While safety has its own plan (ie, the SSPP), the SWMP defines the additional process rigour required for safety critical Software, and the integration of safety critical Software development into the system safety program (see clause 4.6.6).

Software support planning also needs be co-ordinated with ILS planning for the Software environments and processes that will be required to support the Software in service (see the Engineering Support processes within the ILS clause).

Key Persons management, clause 3.4, is also important for the management and development of Software, as at least the software manager and systems architect are typically considered to be Key Persons.

Drafter's Action: Clause 4.4.2.2 may be tailored to the Software requirements of the draft Contract, otherwise clause 4.4.2 is to be included in the RFT without alteration.

Related Clauses: TDR E-1.3 elicits details from tenderers in relation to the Software development Strategy, including measurement and analysis.

TDR E-2.8 and 2.9 elicits details from tenderers in relation to systems and software experience and capability.

TDR E-2.10 elicits details from tenders in relation to system safety experience.

TDR F-5 of the COT requests each tenderer to provide a draft Software List.

Clause 3.2.5, Earned Value Management SystemMeasurement and Analysis

Clause 3.2.6, Measurement and Analysis

Clause 3.2.7, Process Improvement

Clause 3.10, Independent Verification and Validation

Clause 4.6.6, System Safety Program

Clause 5.2.4, Engineering Support Design (which includes software support)

DID-ENG-SW-SWMP defines the requirements for the SWMP.

DID-ENG-SW-SWLIST defines the requirements for the Software List.

Further Reading: AS/NZS ISO/IEC 12207: *Software Life Cycle Processes*

4.4.3 Hardware Development

Status: Optional. To be included when hardware development is likely to be a risk driver or a significant part of the work required under the Contract.

Purpose: To require the Contractor to plan, develop, document, update and implement hardware development processes and procedures.

Policy: Refer to guidance for clause 4.1.

Guidance: This clause 4.4.3 sets out the minimum requirements for hardware development, whereby the Contractor documents its hardware development processes and

procedures in the SEMP and then manages work in accordance with the Approved SEMP. In most cases, the Contractor will refer out to standards and company processes and procedures rather than duplicate this information within the SEMP.

Specifying hardware development techniques and standards should be avoided unless absolutely necessary, because mandating process may require the Contractor to deviate from their own proven processes, thus adding cost and risk. The preferred approach is to review, understand, and align hardware development requirements with the Contractor's proven processes and practices. Where necessary, a separate Hardware Engineering Plan, or equivalent, could be used to document practices and standards. Clause 4.4.3 would need to be modified to reflect this approach.

Drafter's Action: The drafter should rarely need to tailor clause 4.4.3 as most hardware-specific aspects should be addressed as constraints in the System Specification. Tailoring may be necessary if the Commonwealth specifically needs to meet some hardware process requirements (eg, use of a common development tool or format).

Related Clauses: DID-ENG-MGT-SEMP defines the content requirements for the SEMP.

Further Reading: Nil

4.4.4 System Integration

Status: Optional. To be included when additional visibility is required for the integration of particularly complex systems, and/or for systems that require significant integration with GFE, higher-level systems (eg, existing host platforms), or external systems.

Purpose: To provide the Commonwealth with greater visibility of the Contractor's system integration program, for the 'bottom-up' development of hardware and Software.

Policy: DMH (ENG) 12-5-003 *Defence Materiel Integration Guide*

Guidance: Clause 4.4.4 describes system integration in context, defines objectives, and then requires the Contractor to develop a System Integration Plan (SINTP) in order to manage the systems integration activities in accordance with the Approved SINTP.

Without clause 4.4.4, the Contractor would undertake system integration in accordance with the Approved SEMP and internal procedures. Primarily the clause provides greater insight into high-risk integration activities or greater involvement of the Commonwealth for the integration of GFE and with Commonwealth systems such as platforms or networks, or external systems belonging to a third party.

For further information, drafters should seek advice from CASG Chief Systems Engineer Branch (CSEB).

Drafter's Action: Drafters need to determine if the System Integration clause should be included or, if not, replace the clauses under the heading with a single 'Not used'.

Related Clauses: TDR E-1.5, Integration, Verification and Validation Strategy

Clause 7, Verification and Validation

DID-ENG-MGT-SINTP defines the content requirements for the SINTP.

Further Reading: Nil

Optional clauses: The following clauses may be inserted at the end of clause 4.4.4.

Note to drafters: Adapt the following clause to suit individual Contract needs.

4.4.4.1 In addition to any other requirements under the Contract, the Contractor shall assist the Commonwealth to achieve the integration of the Mission System and Support System Components into the wider Defence […and external…] Systems-of-Systems (SoS) context by undertaking the following activities:

a. plan and conduct specific activities to characterise and report on the achieved levels of interoperability between the Mission System and external systems;

b. participate in the joint development (with Associated Parties) of interoperable interfaces (noting that this is included in clause 4.7, interface development, and not an additional Contract requirement);

c. define engineering change requirements to rectify interoperability and SoS integration issues that are outside of the Mission System FBL;

d. participate in SoS integration and test and evaluation activities at one or more intermediate points in the implementation;

e. provide shared facilities, simulations or system models (as a specific delivery) to enable or de-risk SoS integration, or to allow greater decoupling of interdependent systems;

f. develop test equipment / stubs and associated Technical Data that represent key aspects of Mission System behaviours, at a required level of fidelity, as specific product(s) to be delivered to the Commonwealth and used by other parties in SoS testing (ie, to mitigate Commonwealth SoS integration risks);

g. assess complete or partial Mission System or SoS performance in integrated SoS simulation models (eg, human-machine interface alignment / integration across systems);

h. participate in information sharing fora that inform all stakeholders in the SoS;

i. participate in joint SoS operational V&V (test and evaluation) activities; and

j. provide access to and cooperate with Associated Parties to verify interfaces and mitigate interoperability risks, prior to fielding.

4.5 System Analysis, Design and Development

Status: Core (with optional subclauses)

Purpose: To require the Contractor to establish a suitable technical infrastructure for their development program, with visibility to the Commonwealth. This includes establishment of a suitable design documentation strategy, design traceability, a system of engineering drawings, and an engineering information system.

Policy: Refer to guidance for clause 4.1.

Guidance: Refer to guidance for subclauses.

Drafter's Action: Refer to guidance for subclauses.

Related Clauses: Nil

Further Reading: Nil

4.5.1 Technical Documentation Tree

Status: Core

Purpose: To require the Contractor to develop and maintain a Mission System Technical Documentation Tree (MSTDT), defining the hierarchy of specifications and design documentation, which reflect the hierarchy of Mission System design products, and identifying the documentation that will be delivered to the Commonwealth.

Policy: Refer to guidance for clause 4.1.

Guidance: The MSTDT defines the structure and content of the Contractor's design documentation and provides:

a. assurance to the Commonwealth that the Contractor is undertaking the design process in a manner that will ensure the integrity of the design; and

b. a means to communicate the design within the Contractor's organisation and with the Commonwealth during the development of the system.

The MSTDT shows the specification and design documentation produced at each level of the design hierarchy, the standards to which they will be produced, their schedule for production or amendment, and the Commonwealth visibility and Approval rights. Note that the MSTDT should also contain reference to the key top-level technical documents (ie, the OCD, FPS, SS and SSSPEC).

A draft MSTDT is developed for the tender response (TDR F-4) and will be used in tender evaluation to assess the tenderer's development capability. The draft MSTDT may be further developed during pre-contract work and Approved by ED, or included at Attachment K and replaced in accordance with clause 2.5.

In reviewing the MSTDT, the Commonwealth should ensure that it has appropriate rights of Approval or Review over the documents identified. DID-ILS-TDATA-MTDI specifies, for the MSTDT, that the Commonwealth is to be given Approval rights over particular design documents, such as those related to the Functional Baseline and interfaces. Refer to guidance for clause 2.4 for Review and Approval.

In addressing the content of the MSTDT, the principle of CAID is important. The CAID approach (discussed in DMH (ENG) 12-2-001, *Materiel System Review Guide*) is based on two key elements:

a. the Commonwealth controls requirements at the highest practicable level (ie, the FPS, Mission and Support System Specifications) to manage risk and ensure that all needed Verifications (in accordance with the VCRM and test program) have been accomplished; and

b. the Contractor controls lower-level requirements and the design in order to implement cost, schedule, performance, and risk-based business decisions, unless the Commonwealth has a specific need to control them (eg, an interface).

Clause 4.5.1 requires that the MSTDT be delivered, and then that the specifications and design documentation listed in the MSTDT be delivered as a package of Design Documentation under DID-ENG-SOL-DOC. Effectively the MSTDT is a 'CDRL within the CDRL', while it is listed in the CDRL, it performs a similar function to the CDRL by defining delivery details and Commonwealth actions for the Design Documentation, similar. However, unlike a CDRL the MSTDT is revised as the design solution is refined. By example, if lower-level configuration items change, the MSTDT should be modified to reflect the change to the product breakdown structure.

All data listed in the MSTDT is Technical Data and the final versions, to be used in-service, should be considered as part of clause 5.2.8 and 5.3.3 (Support System Synthesis and Implementation of Technical Data Requirements, respectively).

Drafter's Action: Clause 4.5.1 is to be included in the RFT without alteration.

Related Clauses: TDR F-4, Mission System Technical Documentation Tree

Attachment K, Draft Data Items and Strategies

Clause 2.4, Deliverable Data Items

Clause 2.5, Draft Data Items and Strategies included at Attachment K

Clause 3.15, Technical Data and Software Rights Management

Clause 4.5.4, Engineering Drawings

Clause 5.2.8.5, Technical Data

Clause 5.3.3, Implementation of Technical Data Requirements

DID-ILS-TDATA-MTDI defines the content requirements for the MSTDT.

DID-ENG-SOL-DOC is used to deliver Design Documentation listed in the MSTDT.

Further Reading: Relevant documentation standards and DIDs for MSTDT data are listed in DID-ILS-TDATA-MTDI.

4.5.2 Design Traceability

Status: Core

Purpose: To require the Contractor to capture and maintain traceability of all specifications in the design hierarchy for the system.

Policy: Refer to guidance for clause 4.1.

Guidance: Clause 4.5.2 requires the Contractor to develop a Requirements Traceability Matrix (RTM) as a mechanism that documents, and also allows the Commonwealth visibility of, the Contractor's design traceability demonstrating that the design is traceable to the specifications and end-user requirements in the OCD.

As an RTM information is dynamic, clause 4.5.2 requires the Contractor to provide the Commonwealth with reasonable access to the RTM between CDRL deliveries.

Design traceability is normally captured within a Requirements Management and Traceability System (RMTS) using a tool such as the *Dynamic Object Orientated Requirements System* or DOORS™ used by CASG. While it is possible to view the traceability in static reports, ideally this should be accessible on-line via the DMS, or delivery of regular snapshots of the native database. Optional clauses under clause 4.5.2 allow the Commonwealth to specify a RMTS and, if DMS access is not practical, updates to the RMTS database.

Specifying a particular RMTS tool may incur additional costs (if different to the Contractor's existing tools) and the viability of on-line access may not be known until negotiations. Accordingly, the optional clauses may be included with a note to tenderers identifying that the RMTS will be discussed at negotiations.

Note that the MSTDT references the top-level requirements documents (ie, the OCD, FPS, SS and SSSPEC) and the RTM shows traceability to and from the SS and SSSPEC to higher and lower level documents. It is essential that the Commonwealth review this traceability to assess its integrity and justify any Deviations before accepting the SS and SSSPEC as the basis for the Mission System and Support System FBLs.

Drafter's Action: Clause 4.5.2 may be amended to include the optional clause for the RMTS, as described above. In other cases, the clause may need to be amended to clearly define access to the RTM (eg, day-to-day access by the RP or on-line access). Otherwise, clause 4.5.2 may be included in the RFT without alteration.

Related Clauses: Clause 4.2.2, System Requirements Validation

Clause 7.1.3, Verification Cross Reference Matrix

DID-ENG-TRACE-RTM defines the content requirements for the RTM.

Further Reading: Nil

4.5.3 Engineering Information System

Status: Core

Purpose: To require the Contractor to establish an Engineering Information System (EIS) to maintain and control relevant technical information, including digital repositories.

Policy: Refer to clause 4.1.

Guidance: Clause 4.5.3 ensures that the Commonwealth has a means of obtaining insight into the development processes at a finer level of detail than that provide by the formal review program. CORE™ and the IBM Rational® suite are examples of software tools that could form part of the EIS.

The intent of the EIS is to maintain ready access for the Commonwealth to relevant technical information and digital databases that include data from inputs and outputs of process tasks, and the rationale for decisions and assumptions. Access to

relevant technical information produced by Subcontractors should also be considered. The SEMP is to describe the EIS for the Contract.

The EIS should include logistic engineering data (eg, reliability block diagrams or FMECA) and would, accordingly, be related to the LSAR. As such, the EIS would be used by both development and logistic engineers. As a key support resource needed to provide engineering support, the EIS data is ultimately expected to transition and become an element of the Support System.

Drafter's Action: Clause 4.5.3 should be included in the RFT without alteration.

The EIS is usually accessed via the DMS required under clause 2.3. The drafter needs to ensure that these two clauses are tailored to define requirements in a consistent manner. These clauses may be updated during pre-contract work or negotiations to ensure that all components of the EIS are properly defined.

Related Clauses: Clause 2.3, Data Management System

Clause 4.6, Specialty Engineering

Clause 5.2.4, Engineering Support Design, addresses the (in-service) Engineering Support Constituent Capability, to which EIS data would transfer.

Clause 5.3.3, Implementation of Technical Data Requirements, includes an optional requirement for an LSAR.

DID-ENG-MGT-SEMP includes requirements relating to the EIS.

Further Reading: Nil

4.5.4 Engineering Drawings

Status: Core

Purpose: To require the Contractor to develop, deliver, and keep updated, a complete set of Engineering Drawings at the appropriate level of detail.

Policy: DMI (ENG) 12-2-003, *Acquisition and Management of Technical Data*

DEF(AUST)CMTD-5085C, *Engineering Design Data for Defence Materiel*

Guidance: Clause 4.5.4 defines the expected scope and standards for engineering drawings to be delivered under the Contract.

DEF(AUST)CMTD-5085C sets requirements for the acquisition of drawings and associated lists (henceforth referred to as drawings) for Defence materiel. The requirements are applicable to drawings regardless of the method of preparation. Drawings will be acquired in one or more of the following levels:

a. Level 1, Conceptual and Developmental. These drawings disclose information sufficient to evaluate a conceptual design and, potentially, to manufacture hardware for experimental test and evaluation. Drawings shall be legible and include types most amenable to the mode of presentation.

b. Level 2, Production Prototype and Limited Production. These drawings disclose a design that approaches final form, employs standard parts (or non-standard parts approved by the authority concerned), and takes into account full requirements with respect to performance. These drawings may support manufacture of prototypes or limited production models for field test. Drawings include, as applicable, parts lists, detail and assembly drawings, interface control data, diagrams, performance characteristics, critical manufacturing limits and details of new materials and processes. Special inspection and test requirements for the item may also be defined.

c. Level 3, Production. These drawings provide engineering definition sufficiently complete to enable manufacture and to maintain quality control of items. These drawings reflect the end product, provide the engineering data for the support of quantity production; and, in conjunction with other related

re-procurement data, provide the necessary data to permit competitive procurement of items substantially identical to the original items.

Levels 1, 2 and 3 provide for natural progression of design from its inception to production. Combinations of levels may be specified in the Contract.

The Contractor is to develop a Drawings List (as records in the MTDI that is defined by DID-ILS-TDATA-MTDI). The listed Engineering Drawings are delivered in accordance with DID-ENG-HW-DWGS, and the CDRL. DID-ENG-HW-DWGS defines the generic requirements as a 'complete set of Level 2 drawings as defined by DEF(AUST)CMTD-5085C Part 1', unless otherwise specified in the SOW. Hence, the SOW may be tailored to require more detail for different parts of the Mission System and Support System.

Drawings are Technical Data as addressed by clause 5.2.8.5, and the governing plan for the management of drawings is the Technical Data Plan (TDP). The TDP also establishes the agreed electronic formats for drawings to be delivered to the Commonwealth.

Drafter's Action: Drafters are to tailor clause 4.5.4 to identify the level(s) of drawings to be acquired including, when applicable, levels for each group of items for which a requirement varies. Requirements may also address the scope (eg, installation, wiring and rack layout) of the engineering drawings. Refer to DEF(AUST)CMTD-5085C for additional information.

Related Clauses: TDR F-8.7 requests each tenderer to provide a draft MTDI.

Clause 5 of the draft COC, Technical Data, Software and Contract Material

Clause 5.2.8.5, Technical Data

Clause 5.3.3, Implementation of Technical Data Requirements

DID-ENG-HW-DWGS defines the requirements for engineering drawings.

DID-ILS-TDATA-MTDI defines the requirements for the Drawing List.

DID-ILS-TDATA-TDP defines the content requirements for the TDP.

Further Reading: DEF(AUST)CMTD-5085C, *Engineering Design Data for Defence Materiel*

4.5.5 System Models

Status: Optional. To be included when engineering models are relevant to the V&V of the system and/or necessary for the ongoing Supportability of the system.

Purpose: To require the Contractor to provide the Commonwealth with access to engineering models, which are either proposed for use in formal system V&V or necessary for Supportability over the LOT of the system.

Guidance: Clause 4.5.5 may be modified to identify particular models of interest to the Commonwealth, which are expected to be delivered under the Contract.

There are likely to be many system and lower-level models developed at various levels of abstraction and fidelity for a program. These may include functional models, performance models, interaction models, architecture models, environment models, and operational scenarios. Most models should be documented in the EIS; however, the models here are those of special significance to the Commonwealth. For example, the Commonwealth may wish to retain models for:

a. detection performance for a radar surveillance system;

b. the weight and balance of a submarine or aircraft;

c. flight dynamics for an aircraft or hydro-dynamic performance for a ship;

d. propagation and predicted quality of service for radio communications links;

e. the transport and transfer of deployment cargo loads between vehicles being acquired and existing modes of transport; or

f. load and latency factors for a command and control system.

This clause may specify the access required by the Commonwealth to particular models developed for the program. These models would normally be relevant to significant V&V activities or offer benefit during the system's operational life (ie, to predict critical Mission System or Support System performance in a future scenario). The models may be of use to the operational user or benefit research activities (eg, by DSTG). As a deliverable, Technical Data and Software rights are important to enable future use and any restrictions should be addressed through the Technical Data and Software Rights Schedule.

As part of the V&V program the Contractor has to demonstrate that the system will meet the Functional Baseline and this may require the use of specific models for analysis. Even though the onus of proof is on the supplier, the Commonwealth may expend significant effort to validate these models. If significant effort is expected, then these models may be candidates for identification in this clause.

This clause is *not* intended to replace other models that are part of the Contractor's standard processes or otherwise required by the Contract, such as analysis models (eg, SASD, OOAD, UML models), reliability prediction models and reliability block diagrams, and failure models (eg, from FMECA).

Drafter's Action: The drafter needs to determine if the Commonwealth will need to access and use specific models. If there are no such models, or such use is unlikely, then the clauses under the heading may be replacing with a single 'Not used'.

If models are required, then the drafter needs to define what is meant by "access" and, where possible, reword the clause to be more specific, as discussed above. If the models are significant, clause 2.1, Scope of Work, may identify them and reference further details in this clause.

Related Clauses: Technical Data and Software Rights Schedule

Clause 2.1, Scope of Work

Clause 7, Verification and Validation

Further Reading: Rechtin E & Maier M, *The Art of Systems Architecting*, 1997, CRC Press

Rechtin E, *Systems Architecting*, 1991, Prentice Hall

INCOSE, *Systems Engineering Handbook, A Guide for System Lifecycle Processes and Activities*, Fourth Edition, 2015, Wiley

SEBoK, *System Engineering Body of Knowledge, Types of Models*, http://sebokwiki.org/wiki/Types_of_Models, last accessed 19 Nov 15

4.6 Specialty Engineering

Status: Core (with optional subclauses)

Purpose: To require the Contractor to plan and implement a range of Specialty Engineering activities and programs, as defined by the subclauses.

Policy: Refer to guidance for clause 4.1.

Guidance: Refer to guidance on subclauses.

Drafter's Action: Refer to subclauses.

Related Clauses: Nil

Further Reading: Nil

4.6.1 Growth, Evolution and Obsolescence Program

Status: Core

Purpose: To require the Contractor to undertake a growth, evolution and Obsolescence program for the reasons described by clause 4.6.1.1.

Policy: Refer to guidance for clause 4.1.

DEFLOGMAN Part 2 Volume 5 Chapter 7, *Defence Policy on Obsolescence Management*

Guidance: Defence's ability to take advantage of commercial product development cycles in dynamic industries is hindered by lengthy acquisition processes. For instance, the commercial computer and electronics sectors introduce 'next generation' products every few years while Defence can take five to ten years to develop and upgrade to a 'new' system. As a result, military technology in fielded systems often lags behind the commercial leading edge.

'Growth' recognises the need for increasing capacity over time, such as for Software upgrades that expand in features and size or increased data flows. 'Evolution' acknowledges that many technologies progress, such as the next model engine, computer, etc, is more powerful / efficient / capable. Managing 'Obsolescence' means planning for when the production of items will cease and when replacement parts will eventually become unobtainable. All of these factors create risks that are detrimental to the long-term capability of a Materiel System. Note that clauses for the management of Obsolescence are mandatory in all Mission System acquisition contracts: paragraph 7.9 of DEFLOGMAN Part 2 Volume 5 Chapter 7 refers.

Clause 4.6.1 requires the Contractor to acknowledge these factors as risks to the long-term capability of the Materiel System, and to plan for methods that will enhance the design of the Materiel System to address these factors. Clause 4.6.1 is inter-related with clause 4.6.3, Logistics Engineering, which includes analyses of these factors as they relate to Supportability.

Recognising these issues, the concept of technology insertion is built into CASG policy. Technology insertion includes the ability to replace Commercial Off-The-Shelf (COTS) hardware and Software in a Defence system as that COTS component is updated.

Designing for growth, evolution and obsolescence issues encompasses a number of concepts such as commonality and standardisation of parts, the use of fewer bespoke parts, modularity, flexibility, adaptability, in-built spare capacity, and open architecture. A significant percentage of a product's LCC is established during initial design. Therefore, Defence needs to perform early, integrated assessments of design options and LCC, enabling these issues to be addressed in the most cost-effective manner.

Drafter's Action: Clause 4.6.1 should be included in the RFT without alteration.

Drafters should review the OCD and DSTG Technical Risk Assessment (if available) to ensure that any expected areas of system growth and evolution are identified, particularly from the operational viewpoint. When appropriate, requirements (usually 'highly desirable' requirements) may be included for factors such as spare capacity within ICT subsystems, or modularity, standardisation or other features that enhance upgradeability.

Related Clauses: TDR E-1.4, Specialty Engineering Strategy

TDR F-3, System Evolution and Growth

Clause 3.11, Life Cycle Cost

Clause 4.6.3, Logistics Engineering

DID-ENG-MGT-GP defines the content requirements for the Growth Plan.

Further Reading: Nil

4.6.2 Integrated Reliability, Maintainability and Testability Engineering Program

Status: Core

Purpose: To require the Contractor to implement an Integrated Reliability, Maintainability and Testability (IRMT) engineering program for the reasons identified in clause 4.6.2.1.

Policy: DEFLOGMAN Part 2 Volume 10 Chapter 14, *Defence Policy on Reliability, Availability and Maintainability*

Guidance: IRMT program objectives listed in the SOW are generic and aim to achieve an optimal balance between preparedness, support, and LCC. Some programs will have specific and overriding requirements not covered by the generic objectives; in such instances the subclauses should be amended to suit the project's needs.

The IRMT objectives should influence the Contractor's IRMT Plan and provide a frame of reference within which the 'fitness for purpose' of the program can be assessed by the Commonwealth Representative.

As a significant driver of Support Resource requirements and LCC, and essential for analysing Materiel Safety, the IRMT Plan should identify strong links between the IRMT program and related activities. The plan is also expected to detail the tailoring of relevant standards, internal Contractor procedures, and tools to be used in the Contractor's efforts.

IRMT program activities are to be conducted in accordance with the Approved IRMT Plan. As the IRMT program provides information for other programs, drafters may identify these other programs to ensure that they will be addressed in the IRMT engineering program. As an example of the interaction between IRMT and LSA programs, consider the following:

a. the FMECA process conducted by the IRMT Engineering program is used by the LSA program to identify maintenance tasks;

b. reliability and maintainability predictions are used in the LSA program to determine rates of use of Support Resources and in LCC calculations; and

c. Maintainability accounting tests (proving that the system meets the specified maintainability performance requirements) is normally conducted as part of Maintenance Support Effectiveness Demonstrations under the V&V clause.

Drafter's Action: Drafters need to consider whether any project-specific objectives are to be included in clause 4.6.2.1. If not, clauses 4.6.2.1 and 4.6.2.2 are to be included in the RFT without alteration. Clause 4.6.2.3 may be further developed to include any project-specific activities.

Related Clauses: TDR E-1.4, Specialty Engineering Strategy

Clause 5.2.5, Maintenance Support Design

Clause 7.1.7, Failure Reporting and Analysis

Clause 7.2.4.3, Maintenance Support Effectiveness Demonstration

DID-ENG-MGT-IRMTP defines the content requirements for the IRMTP.

Further Reading: *ADO RAM Manual*

4.6.3 Logistics Engineering

Status: Core

Purpose: To require the Contractor to implement a Logistics Engineering / Supportability Engineering program to ensure that Supportability is considered in the design of the Mission System and, if applicable, new Support System Components.

Policy: DEFLOGMAN Part 2 Volume 10 Chapter 3, *Integrated Logistic Support*, and Chapter 15, *Supportability Analysis*

Guidance: Logistics Engineering is applied to ensure that Supportability factors influence the design of the Mission System and, if applicable, Support System Components, by:

a. conducting, and applying the results of, Standardisation Opportunities and Technological Opportunities analyses to the components of a system; and

b. specifying Supportability-related design factors in the SS (some of which are identified from Standardisation and Technological Opportunities).

Note that analyses of the Mission System often requires trade-offs with the Support System (refer clause 5.2.2). Additionally, to specify a particular analysis activity, Commonwealth-directed trade studies may be required (refer clause 2.6).

Drafters should note that Logistics Engineering is managed under the Integrated Support Plan (ISP) because it is part of the broader LSA process to address Supportability of the Materiel System. For additional guidance on LSA refer to the *FPS Development Guide*, *DEF(AUST)5691* and the *ADO LSA Manual*.

Mission System Standardisation Opportunities:

Standardisation enables the use of existing components and Support Resources and may offer various benefits including:

a. the use of existing items can avoid development costs;

b. common items can be supported through existing maintenance and supply chains, and enable life-cycle savings through economies of scale;

c. the availability of common Support Resources may be greater in a deployed situation, particularly when operating with allied and coalition forces;

d. commonality of Support Resources between end items requires fewer items to be deployed, improving operational readiness and reducing cost; and

e. personnel proficiencies may be increased and training decreased for personnel working on similar equipment and using similar procedures.

Standardisation may be a requirement in the FPS for resources like common fuels, the IT operating environment, or transport via standard shipping containers. If not mandatory, these should be listed as 'desirable' requirements in the RFT. Analysis under the Contract may determine the extent to which further benefits may be obtained. If the Commonwealth will set a detailed scope for analysis, then refer to clause 2.6, Commonwealth-Directed Trade Studies. If the Commonwealth has topics for investigating potential Standardisation Opportunities, a clause can be added under clause 4.6.3.1 to list those topics; otherwise the analysis will be un-scoped unless identified in the tenderers ILS Strategy / Contractor's ISP.

Standardisation can also have cause risks because:

a. the Contractor may have to develop new interfaces to incorporate the standardised item into its design;

b. it becomes difficult to hold a Contractor accountable for system performance if standardised components are mandated and/or provided as GFE; and

c. there may be Obsolescence issues if standardising on dated technologies.

Results of analyses should be presented to the Commonwealth at MSRs, and applicable review items are included in MSR Checklists. Agreed Standardisation Opportunities should be incorporated into Contractor specifications through clause 4.6.3.3, Mission System Supportability and Supportability Related Design Factors.

Mission System Technological Opportunities:

Technological Opportunities identify and analyse technological advancements or the new application of existing technologies to reduce maintenance effort, reduce Support Resource requirements, reduce LCC, or enhance system readiness.

Technological Opportunities often improve RAM characteristics of the Mission System and/or enable alternative and more efficicent support concepts. Reliability can be improved by new materials (eg, stronger alloys or composites) or advanced components (eg, advances from transistor to integrated circuit technology improved reliability and performance). Automated redundancy can improve mission reliability but increase the total number of failures (eg, by tripling the number of components), as a result mission and logistics reliability may need to be traded off.

Maintainability and testability may be improved by advanced diagnostics, health and usage monitoring systems (HUMS), computer-aided system management and provision of on-board maintenance support (eg, on-system, on-line maintenance data). The opportunities can result in substantial cost savings by reducing the required numbers of maintenance personnel and deployed maintenance.

In some case, a value judgment needs to be made based on the risk of state-of-practice technology versus state-of-art technology. Leading edge technology can have associated risks, such as adopting an orphaned technology (through higher costs of being a sole user). This should be a normal part of the risk evaluation. If technology is considered immature at the time, the analysis may still identify areas for future upgrades and technology insertion.

The implementation of specific technologies (eg, HUMS) may be requirements in the FPS; listed as 'desirable' requirements in the RFT when appropriate. If the Commonwealth will set a detailed scope for analysis, then refer to clause 2.6, Commonwealth-Directed Trade Studies. If the Commonwealth has topics for investigating potential Technological Opportunities, a clause can be added under clause 4.6.3.2 to list those topics; otherwise the analysis will be un-scoped unless identified in the tenderers ILS Strategy / Contractor's ISP.

Results of analyses should be presented to the Commonwealth MSRs, and applicable review items are included in MSR Checklists. Agreed Technological Opportunities should be incorporated into Contractor specifications under clause 4.6.3.3, Mission System Supportability-Related Design Factors.

Mission System Supportability-Related Design Factors:

Once analysed and agreed, Supportability-related design factors become requirements to be incorporated in specifications for the Mission System and components. This activity is undertaken when:

a. relevant Supportability-related design factors have not yet been specified in the Mission System specification (or the FPS);

b. specified Supportability requirements must be devolved down to lower levels of the Mission System's design; or

c. Supportability-related design factors resulting from IRMT analyses (clause 4.6.2), Standardisation Opportunities, Technological Opportunities and/or other related requirements / constraints need to be documented.

Clause 4.6.3.3, Mission System Supportability-related design factors, is core.

From MIL-HDK-502:

> "Integrating supportability requirements into system and equipment design requires that designers be oriented toward supportability objectives from the outset. Technical information generated during the design process must be disseminated among designers and members of the supportability disciplines to surface interface problems. Technical design information—diagnostic features, electromechanical interfaces, reliability estimates, item functions, adjustment requirements, and connector and pin assignments—that determines supportability should be an integral part of design documentation."

Supportability factors for the Mission System can include:

a. accessibility for maintenance and replenishment;

b. component partitioning (for simpler item replacement), minimal need for special tools, parts minimisation;

c. functional partitioning to improve testability, in-built diagnostics, condition reporting systems;

d. standardisation of parts, including consumables and system interfaces; and

e. those associated with support (often a trade-off to Mission System design), such as minimised need for complex or bespoke skills and related Training.

Where Supportability-related design factors are included in the specification (at SOW Annex A) by the Commonwealth, the Contractor's specification of these requirements (in accordance with DID-ENG-DEF-SS) will normally be developed to a deeper level and include more specific, measureable requirements from IRMT and LSA program results.. Some examples of measurable system Supportability requirements are (not an exhaustive list):

a. System Reliability – Mean Time Between Failure;

b. System Maintainability – Mean Time To Repair;

c. Maintenance burden – Maintenance Man-hours per Operating Hour;

d. Built in Fault Isolation – percent successful isolation; and

e. Transportability Requirements – method of transportation (eg, palletisation).

Although Reliability and Maintainability characteristics of a design are significant to Mission System Supportability they can be difficult for the Commonwealth to define., More often, requirements need to be established at a higher level, such as system availability, and then developed and allocated by the Contractor to more specific parameters. (Refer to the *ADO RAM Manual* for further guidance.)

The Supportability-related design factors, and associated requirements, should be incorporated into the SS for the Mission System (refer clause 4.2.2).

Logistic Support Analysis Record:

A Logistic Support Analysis Record (LSAR) is used to support the analysis and review of supportability and logistics data during acquisition, and to update configuration, maintenance and logistics data in-service. Where the Contract requires a LSAR, the Supportability characteristics related to the predicted and measured RMT figures are recorded in the 'B Tables'. This information is used to conduct and review of FMECA and RCM analyses and the calculation of logistics resource requirements for maintenance. For existing systems, measured values would be used in resource calculations as part of the LSA program.

Drafter's Action: If specific Standardisation Opportunities or Technological Opportunities are to be pursued, and not included as Commonwealth-directed trade studies under clause 2.6, these may be listed under clauses 4.6.3.1 and 4.6.3.2, respectively. Otherwise the clauses should be included in the RFT without alteration.

Clause 4.6.3.3 is to be included in the RFT without alteration.

Clause 4.6.3.4 should be included if an LSAR is required under the Contract.

Related Clauses: TDR F-1.6, Integrated Logistic Support Strategy

Clause 2.6, Commonwealth-Directed Trade Studies

Clause 4.2.2, System Requirements Validation

Clause 4.6.1, Growth, Evolution and Obsolescence Program

Clause 4.6.2, Integrated Reliability, Maintainability and Testability Engineering Program

Clause 5.1.2.1, Planning

Clause 5.3.3, Logistics Support Analysis Record (Optional)

DID-ILS-TDATA-LSAR defines the requirements for data population of the LSAR.

Further Reading: *ADO LSA Manual*

DEF(AUST)5691*, Logistic Support Analysis*

DEF(AUST)5692*, Logistic Support Analysis Record Requirements for the Australian Defence Organisation*

ADO RAM Manual

MIL-HDBK-502*, Acquisition Logistics*

4.6.4 Human Engineering

Status: Core

Purpose: To ensure that the human - system interfaces are appropriately addressed during design, and to ensure that the Commonwealth has appropriate mechanisms to allow the end-system user community to influence the design of those interfaces.

Policy: Refer to guidance for clause 4.1.

Guidance: The objectives of the Human Engineering (HE) program are given in clause 4.6.4.1. If project-unique objectives are applicable; for example, to implement common symbology with existing systems, these may be added to the clause but should be supported by specified requirements in the FPS.

Tenderers are requested to provide an approach to the HE program in response to TDR E-1.4, Specialty Engineering Strategy. This Strategy will be included at Attachment K and inform the HE Program Plan (HEPP) developed under clause 4.6.4.2. This clause may also mandate or recommend particular HE standards, such as MIL-HDBK-46855A, *Human Engineering Program Process and Procedures* and MIL-STD-1472F, *Human Engineering*. These two standards are included by default in DID-ENG-MGT-HEPP, and will be the basis of HE program planning unless changed by these clauses. In the case of aircraft projects, AAP7001.054 also provides guidance. During negotiations, consideration should be given to aligning the choice of standards with the Contractor's work practices.

Note that HE issues are relevant to both the design of the Mission System and the design of Support System Components, when applicable

Clause 4.6.4.3 requires the Contractor to undertake activities in accordance with the Approved HEPP. Outcomes are reported in a HE Program Report (HEPR) and incorporated into specifications and design documents.

The MSTDT is to assign the Commonwealth Representative with Approval rights over the ‘specifications and design documentation for the human-system interfaces’ because these interfaces are external interfaces and often where the success or failure of a system is judged.

Often, the high-risk nature of HE, particularly human-computer interaction, warrants greater Commonwealth involvement and this clause may be expanded to address:

a. how the HE requirements may be specified (ie, what documentation may need to be developed), noting that this may also be achieved when the proposed MSTDT is considered for Approval; and

b. Commonwealth visibility of intermediate stages of developing HE solutions, to enable end-user involvement through a HE Working Group (HEWG).

Clause 4.6.4.4 contains optional clauses for a HEWG. HEWG meetings are usually held at Defence locations to enable access to operational Defence Personnel. Drafters should identify locations for HEWGs that will achieve the objectives of the working group and tailor clause 4.6.4.4.4 accordingly.

Clause 4.6.4.4.5 requires the Contractor to ensure that, when relevant, Approved Subcontractors participate in the HEWG. This would include Subcontractors

involved in design and development of the Mission System and/or Support System Components. The clause may be extended to include the Contractor (Support) if relevant to Contract (Support) Services (eg, Operating Support Services).

The HE program is inter-related with the System Safety Program (clause 4.6.6) where human-machine interactions and fatigue are relevant to safety. Workload and HE issues for operators support personnel should be considered as part of operator task analysis under SOW clause 5.2.3. HE also has implications for Maintenance Support and Supply Support tasks analysed under clauses 5.2.5 and 5.2.6.

Drafter's Action: Drafters should amend clause 4.6.4.1, if required, to include any project-unique objectives. Otherwise, it should be included in the RFT without alteration.

Clause 4.6.4.2 may be expanded to identify specifications / standards relevant to planning the HEPP, to take precedence over the default standards within DID-ENG-MGT-HEPP. Otherwise, it should be included in the RFT without alteration.

Clause 4.6.4.3 should be amended to reflect any Contract-specific requirements in accordance with the preceding guidance.

Clause 4.6.4.4 may be included, and tailored, or deleted based on the need for a HEWG to address the development of complex human-system interfaces.

Related Clauses: TDR E-1.4, Specialty Engineering Strategy

Clause 4.6.6, System Safety Program

Clause 5.1.2, Mandated System Reviews, includes the requirements for a TARR.

Clause 5.2.3, Operating Support Design

Clause 5.2.5, Maintenance Support Design

Clause 5.2.6, Supply Support Design

DID-ENG-MGT-HEPP defines the content requirements for the HEPP.

DID-ENG-DES-HEPR defines the content requirements for the HEPR.

DID-ILS-TDATA-MTDI defines the content requirements for the MSTDT.

Further Reading: *Human Systems Integration is worth the money and effort!*, Burgess-Limerick, Robin, ISBN 9780642297327.

4.6.5 Electromagnetic Environmental Effects

Status: Core

Purpose: To ensure that the system impact on the Electromagnetic Environment and effects of the Electromagnetic Environment on the system are appropriately addressed.

Policy: DI(G) CIS 6-6-001, *Management of the Defence Use of the Radiofrequency Spectrum*

DEFLOGMAN Part2 Volume 10 Chapter 22, *The Management of Electromagnetic Environmental Effects*

Guidance: Personnel health, electrical and electronic equipment, explosive ordnance and flammable atmospheres may be adversely affected by Electromagnetic radiation. These effects are known collectively as Electromagnetic Environmental Effects (E3). DI(G) CIS 6-6-001 states Defence policy for adherence to the Australian Communications and Media Authority (ACMA) Electromagnetic Compatibility (EMC) compliance framework and this policy should be read prior to tailoring this clause. There are various authorities throughout Defence that can provide further advice and guidance and these authorities are listed in the policy.

E3 effects should be considered in relation to the Mission System and Support System Components (eg, S&TE and Training Equipment). E3 has significant safety

implications in airborne systems and Explosive Ordnance, and further advice in this area should be sought from the applicable ADF authority.

This clause interrelates with clause 4.6.9, Access to the Radio Frequency Spectrum, to ensure that Defence use of the radiofrequency spectrum is without harmful interference.

Clause 4.6.5 outlines the objectives for E3 and addresses planning and working in accordance with an Approved plan. These clauses need further development, and also the development of a Data Item Description to specify the contents of the plan.

Note that this clause should not call up specific equipment requirements related to E3 because these should be captured in the FPS. This clause should be concerned with the Contractor's process and work activities related to E3 (to achieve the requirements) and the Contractor's interaction with the Commonwealth and Associated Parties in these areas.

Drafter's Action: This clause needs to be developed to address any specific work requirements to conduct electromagnetic surveys or to conduct particular studies, such as those related to interoperability or estimation of potential interference impact.

There is no standard DID in *ASDEFCON (Strategic Materiel)* for an E3 Plan. As such, drafters will need to develop a DID for this plan with the appropriate experts, or expand DID-ENG-MGT-SEMP in order for the SEMP to address E3.

Related Clauses: TDR E-1.4, Specialty Engineering Strategy

Clause 4.6.9, Access to the Radio Frequency Spectrum

Further Reading: ADFP 6.0.4, *Radiofrequency Spectrum Management*

4.6.6 System Safety Program

Status: Core

Purpose: To implement a system safety program in order to minimise the risks to the health and safety from the Supplies for the in-service and disposal phases of the life-cycle, and to facilitate compliance with the WHS Legislation.

Policy: WHS Legislation

CASG Policy (ENG) 12-8-001 *Materiel System Safety*

Defence Radiation Safety Manual

Defence WHS Manual

DEFLOGMAN Part 3 Volume 4 Section 13, *Identification and Management of Problematic Items in MILIS* (http://escmweb/65904.htm)

DMI (ENG) 12-8-004, *Hazardous Chemicals in Materiel Systems*

DMSP (ENG) 12-3-005, *Developing Function and Performance Specifications*

APN3411-0101, *Navy Materiel Assurance Publication*

DASR Basic Regulations (BR) 10 and DASR 21

TRAMM-L Section 2 Chapter 4, *Safety Assurance of Land Materiel*

Guidance: The system safety program is core as it enables Defence to ensure the Materiel Safety of persons using, supporting, involved with, or in the vicinity of, the Supplies during the V&V program and in the in-service and disposal phases of the life-cycle. Results from the system safety program inform safety certification activities (eg, for design registration and ADF regulatory / assurance requirements), and provides information to manage the on-going Materiel Safety of the Supplies in-service.

CASG adopts the approach taken by ADF regulatory / assurance authorities in treating all new systems as safety critical, or a potential hazard to health and safety, until proven otherwise. Therefore, the system safety program aims to ensure that all

safety hazards and risks are addressed. The program also allows Defence to meet legal obligations (under WHS Legislation) to provide safe plant / equipment and safe workplaces, so far as is reasonably practicable.

The System Safety Program Process

The system safety program should be conducted in accordance with a suitable standard (such as MIL-STD-882E) tailored to enable the program to address the specified requirements, Materiel Safety in general, WHS Legislation, and any other applicable regulations. A safety management group, including Defence project staff, the ADF regulatory / assurance authority, and other stakeholders should develop the specified requirements for the FPS and the system safety program. The scope of the system safety program will depend on the Materiel System, the level of design and development, and the suitability of existing safety data, given the intended configuration, role and environment.

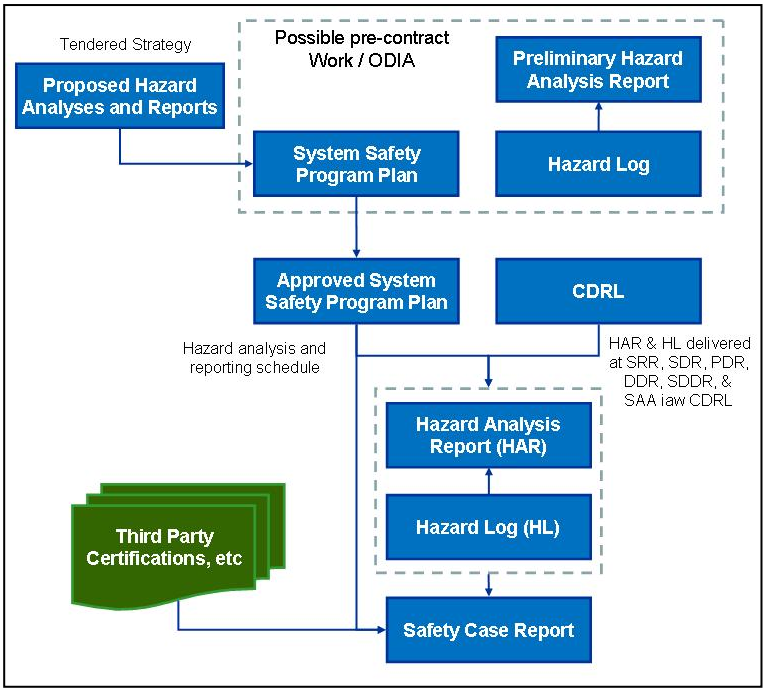


Figure 3 – System Safety Data Item Relationships

In response to the RFT, Tenderers describe their Strategy for the system safety program. Under Contract, a number of data items are used to manage the program and provide visibility to the Commonwealth. Figure 3 shows their relationship, which can be interpreted as follows:

- Tenderers will propose the tailoring of standards, hazard analysis activities and the proposed reporting in their tendered Strategy (TDR E-1.4). Certain Problemation Substances and Problematic Sources are also identified (TDR F-7).
- During pre-contract work or shortly after ED, the SSPP is drafted, from the tendered Strategy, for Approval. A preliminary hazard analysis may also be performed, with hazard and risk data entered into the Hazard Log (HL).
- The Approved SSPP and CDRL together identify the delivery of Hazard Analysis Reports (HARs), which are supported by details in the HL. The HL is a database developed for this purpose The HARs and HL updates are delivered for consideration at applicable MSRs.
- The Safety Case Report (SCR) summarises a body of evidence ('objective quality evidence') that demonstrates that a system is safe - the 'safety case'.

Specified Requirements

Clause 4.6.6 defines the requirements for the system safety program but specified requirements for Materiel Safety are included in section 3.13 of the FPS (when prepared in accordance with DMSP (ENG) 12-3-005, Annex A).

Requirements (often constraints) are primarily system specific and may include certification (eg, by road, aviation or maritime safety boards) or design registration. As a Contractor's design organisation is not always located in Australia, it can be helpful to identify requirements that differ to overseas laws. As examples:

a. Asbestos Containing Material (ACM). Subregulation 5(1) of the *Work Health and Safety Regulations 2011* (Cth) bans all new ACM. In other countries materials with less than 1% Asbestos may not be classified as ACM and would not meet our requirements. Requirements in the FPS should make it clear that the Australian meaning of ACM applies.

b. Australian Design Registration. Registration is required for medium and high risk plant (refer CASsafe, Element 10.1). When required, the FPS should specify (without having to identify individual items) that Mission Systems, subsystems (eg, ship's boilers) and Support System Components (eg, forklifts and cranes) that are medium or high risk plant will require Australian design registration in accordance with Part 5.3 of the *Work Health and Safety Regulations 2011* (Cth)[6]. Furthermore, the FPS may specify that a data plate be affixed to or near the relevant items with the design registration details (also in accordance with WHS Regulations).

Details of the Australian design registration will be included in the SCR and, where relevant, provided within the safety-related information for the Configuration Item when delivered (see SOW clauses 4.6.6.3.4 and 4.6.6.3.5).

Program Objectives. Clause 4.6.6.1 includes generic program objectives. Once specified requirements have been drafted for Materiel System safety, the objectives may be updated to include project-unique objectives.

Planning. Clause 4.6.6.2.1 requires the Contractor to have an Approved SSPP for managing the system safety program.

Optional clause 4.6.6.2.2 allows drafters to specify standards, regulatory manuals, and other references for planning the system safety program (ie, separate to design standards for the Materiel System within the FPS). Template DIDs refer to MIL-STD-882E as an appropriate standard but the note allows tenderers to propose alternatives. A standard listed here would become the basis for the system safety program; however, the project office should expect existing system safety data, for mature components, to have been prepared using other standards. References added for ADF regulations should be to the regulation or section, rather than whole manuals.

Program Activities. Under clause 4.6.6.3, program activities are to be performed in accordance with the Approved SSPP. DID-ENG-SOL-HAR specifies reports for eight different types of hazard analyses (seven safety and one environmental-related) performed in accordance with the Approved SSPP (and an Environmental Engineering Plan, if required by clause 4.6.10). The template is designed so that the HAR contains a summary of the analysis results with detailed data provided in a simultaneous delivery / update of the HL.

The HL (a 'hazard tracking system' in MIL-STD-882E) is prepared in accordance with DID-ENG-SOL-HL. This database provides detailed data for the HARs and evidence for the SCR. The HL should be available from the EIS, via the DMS (SOW clause 2.3) to enable Commonwealth access to evolving safety data. The HL is delivered to be maintained in-service.

[6] Applications for design registration are made to a Commonwealth, State or Territory regulator, particularly if the plant is not unique to Defence. However, design registration by Defence is allowed by WHS Legislation, refer to DMSP (LOG) 04-0-003.

DEFLOGMAN Part 3 Volume 4 Section 13 defines policy for 'Problematic Items Of Supplies' that are or that contain Problematic Substances, Problematic Sources or which are classified, and medium or high risk plant to be registered. Details from the HL will inform categorisation of the Supplies in MILIS.

The HL records solutions to eliminate hazards and minimise risks in order to achieve Safety Outcomes. Solutions may include alternative designs or changes to processes that avoid or limit associated risk. The HL records 'risk acceptance' by the Contractor and the Commonwealth. The term 'risk acceptance' **DOES NOT** mean Acceptance under the Contract; this would undermine the principle of CAID and could result in the Acceptance of Supplies that do not meet other specified requirements. Risk acceptance, by the Commonwealth, related to a Problematic Substance or a Problematic Source provides Approval for that item within that element of the Supplies. Problematic Substances and Problematic Sources brought onto Commonwealth Premises temporarily are addressed by clause 9.3.

The SCR collates and summarises the 'safety case', a large body of evidence including the HL, HARs, the SSPP, and any other information needed to prove Materiel Safety. The SCR may also refer to FMECA reports, design documentation, Acceptance Test Reports and other Contract data items. Where Australian design registration, certifications from third parties (eg, by civil aviation or maritime authorities) or foreign regulatory authorities are required, this should be included in the FPS; the registration / certification is then presented as safety case evidence. DID-ENG-SOL-SCR contains detailed requirements; however, drafters should consult the applicable regulatory authority for any additional requirements.

An SCR requires details of the SSPP and how it was followed, but such information is often not available for off-the-shelf items. A Materiel Safety Assessment (MSA) is similar to the SCR but without the SSPP component. It may be used for Support System Components or for off-the-shelf subsystems, to support the SCR. DID-ENG-SOL-MSA, for the MSA, may be copied from the *ASDEFCON (Complex Materiel) Volume 2* template and new clauses drafted to use the MSA for specific items, subject to pre-contract work and negotiations.

Clause 4.6.6.3.5 requires safety information to be delivered for each Configuration Item offered for Acceptance (eg, individual quality inspection and test results). Clause 12.4.12 of the COC identifies the information to be provided with each item in accordance with the WHS Legislation.

System Safety Working Group (SSWG). Clause 4.6.6.4 is an optional clause to establish a SSWG for complex programs, where significant coordination and Commonwealth stakeholder input will be required. SSWG objectives are generic but may be amended to highlight specific areas of safety for the program (eg, flight safety). Drafters should insert the location of the SSWG meetings where indicated, or amend the clause if necessary.

Drafter's Action: An important aspect to defining the system safety program is to first review the Materiel Safety requirements for the Materiel System in the FPS.

If required, drafters can amend clause 4.6.6.1 to include project-unique objectives; otherwise the clause should be included in the RFT without alteration.

Clause 4.6.6.2.1, for an SSPP, should be included in the RFT without alteration. If required, optional clause 4.6.6.2.2 should be included and tailored to identify the relevant references (in addition or as an alternative to MIL-STD-882E).

Drafters should review clause 4.6.6.3 but, in many cases, the clause will be included without amendment. If applicable, clauses may be added for MSAs for off-the-shelf Support System Components, as described above.

Drafters need to determine if an SSWG will be required and included and amend the optional clause 4.6.6.4 as applicable.

Drafters should also review the CDRL for the associated data item deliveries.

Related Clauses: TDR E-1.4 Specialty Engineering Strategy, includes requirements relating to the system safety program.

Clause 2.3, Data Management System

Annex A, for Materiel System safety requirements specified in the FPS.

DID-ENG-MGT-SSPP, which specifies requirements for the SSPP.

DID-ENG-SOL-HAR, which specifies requirements for the HAR.

DID-ENG-SOL-HL, which specifies requirements for the HL.

DID-ENG-SOL-SCR, which specifies requirements for the SCR.

DID-ENG-SOL-DCERT, which specifies requirements for a Design Certificate.

DID-ENG-MGT-SEMP, for the integration of all specialty engineering programs, including the system safety program.

DID-V&V-MGT-V&VP, for the V&V of safety in the design of the Materiel System.

Further Reading: DID-ENG-SOL-MSA from *ASDEFCON (Complex Materiel) Volume 2*

MIL-STD-882E *Standard Practice for System Safety*

4.6.7 System Security

Status: Core

Purpose: To ensure adequate processes are in place to address the security requirements of the technical design.

Policy: *Australian Government Information and Communications Technology Security Manual* (ISM)

Defence Security Principles Framework (DSPF)

DI(G) CIS 6-2-002, *High Grade Cryptographic Equipment Provision*

Guidance: This clause is intended to address the design of appropriate security features of the Mission System and Support System. Note that the Contractor's facility and personnel clearance issues are addressed separately in SOW clause 3.16.

A contract should include a security program in accordance with the DSPF, suited to the system. Section 3.16 of the FPS (refer FPS Guide) should be used to document system security (and privacy) requirements. Implementing security requirements may require the development of a system security plan and other plans, such as a security architecture plan and a security accreditation plan. Visibility of the Contractor's plans can be essential for coordinating issues of timing for Commonwealth involvement and the engagement of applicable authorities.

If High Grade Cryptographic Equipment (HGCE) is part of the procurement, the HGCE provision process must be followed in accordance with DI(G) CIS 6-2-002 and tailoring support will be required from the Information Assurance Systems Program Office (IA SPO).

Maintenance and support issues related to security also need to be carefully considered for the Support System (eg, the need to appropriately sanitise / de-classify storage media in classified equipment, such as cryptographic equipment and electronic warfare equipment, before a failed item can be sent for repair).

Refer to the agency Security Adviser and/or Defence Security Authority (DSA) for advice regarding program requirements and, therefore, requirements for tailoring.

Drafter's Action: Drafters should note the default program objectives and amend to include project specific objectives, if required. Details of required plans and activities must be added to the clauses where indicated.

ASDEFCON (Strategic Materiel) does not include a DID for a Security Plan. If required, drafters may need to develop a DID, which would refer sections of the DSPF and ISM as appropriate.

Related Clauses: TDR E-1.4, Specialty Engineering Strategy, includes requirements for the system security program.

Clause 11.10 of the draft COC, Defence Security

Clause 3.16, Defence Security Compliance

Further Reading: FPS Guide

4.6.8 System Certification

Status: Optional. To be included when system certification activities need to be undertaken by the Contractor.

Purpose: To ensure that airworthiness / seaworthiness / mission-worthiness and related regulatory / assurance requirements for certification are met.

Policy: Refer to the applicable ADF regulatory / assurance framework manual:

ANP3411-0101 Chapter 5 *Navy's First Line of Defence Assurance Basis*

DASR 21 *Aircraft Design, Production and Certification*

TRAMM-L Section 2 Chapter 7 *Technical Certification*

Guidance: This clause provides an outline for drafters to define needs for the Certification program, and the associated plans and activities. Requirements are dependent upon the type of system and the regulatory / assurance regime(s) that apply to it. High-level requirements, such as the Mission System is to achieve a particular certification standard, should be identified in the FPS. Note that third party certifications may be pre-requisite for ADF system certification, including systems or subsystems that require Australian Design Registration – these should also be identified in the FPS.

A Certification Plan and a body of evidence, such as a Certification Basis Description (CBD), are typical requirements for the System Certification program, to allow certification risk to be assessed. Additional requirements may apply to the Defence operator / user in terms of procedures before full certification is granted (as procedures may be applicable to the management of certain safety risks). Certification often inter-relates with other parts of the Contract and interaction with the following areas should be considered:

a. the V&V program, including Validation activities in particular;

b. the system safety program and the SCR;

c. the CM program and the CSA system records; and

d. the environmental engineering program.

Drafter's Action: Refer to the applicable ADF regulatory / assurance authority for advice.

Related Clauses: Clause 4.1.3, Engineering Organisation and System Compliance

Clause 4.6.6, System Safety Program

Clause 4.6.10, Environmental Engineering Program

Clause 6.6, Configuration Status Accounting

Clause 7, Verification and Validation

Further Reading: Refer to the applicable ADF regulatory / assurance framework manuals.

4.6.9 Access to the Radio Frequency Spectrum

Status: Core

Purpose: To ensure that the Materiel System is compliant with the *Radiocommunications Act 1992* and that in-service spectrum use will meet operational needs.

Policy: DI(G) CIS 6-6-001, *Management of Defence Use of the Radiofrequency Spectrum*

Guidance: This clause provides for the management of Defence use of the Radiofrequency Spectrum to ensure that all who require access to this spectrum can do so without harmful interference. The clause requires the submission of an Equipment Certification to Access Radiofrequency Spectrum (ECARS) form, to be evaluated by the Defence Spectrum Office (DSO) to ensure that, when delivered, systems and equipment will:

a. comply with Australian regulatory and Defence-specific requirements; and

b. meet operational requirements.

An initial delivery of the ECARS for systems and subsystems is optional, but when appropriate should be included in the tender response for TDR F-6. Under the Contract, the CDRL specifies multiple deliveries of the ECARS, using either an online form AA763 or the form embedded in DID-ENG-SOL-ECARS, to align with the development of the systems and equipment. RF spectrum issues are discussed at relevant MSRs to ensure that these issues are addressed at the earliest possible time in the development process.

DSO must be advised when projects, systems or equipment require access to the RF spectrum. This includes advice on:

a. compliance with current 'Australian Radiofrequency Spectrum Plan';

b. compliance with any relevant band and channel plans;

c. compliance with future planned regulatory changes;

d. operational restrictions that may apply due to equipment using an inappropriate frequency band;

e. cost implications of equipment not operating in Defence bands;

f. interoperability issues with other In-Service Defence systems; and

g. compliance with Australian or International radio frequency bands to either establish or maintain interoperability with allied systems.

DSO should be contacted for guidance regarding of these requirements.

For the ECARS process to be effective, RF spectrum requirements must be included in requirements for the Mission System and Support System, including:

a. the FPS must include the specified requirements for access to the RF spectrum, including interoperability requirements;

b. the VCRM must include associated Verification requirements;

c. the OCD must capture the operational (and support) concepts and scenarios associated with access to the RF spectrum, including the identification of the systems and equipment with which the new systems and equipment must be able to interoperate (eg, work together and/or not interfere with); and

d. the Commonwealth's Test and Evaluation Master Plan should include the Verification requirements, particularly when these are likely to be significant cost and schedule drivers.

Guidance should be sought from DSO to assist with the development of Contract-specific requirements associated with access to the RF spectrum.

Additional work requirements, such as RF site surveys by the Contractor, may be included in the SOW if RF spectrum issues are likely to be significant.

Drafter's Action: Drafters need to determine if this clause is required and if TDR F-6 needs to be included in the tender requirements (eg, if spectrum requirements have the potential to vary between tenderers), or deleted. The requirement for submission of the ECARS under the Contract is to be reflected in the CDRL.

Consideration should be given to developing additional requirements for site surveys and associated survey reports, when applicable, to be added the description of program activities.

Related Clauses: TDR F-6, Equipment Certification to Access Radiofrequency Spectrum

Clause 4.6.5, Electromagnetic Environmental Effects

Further Reading: ADFP 6.0.4, *Radiofrequency Spectrum Management* (specifically chapter 3, *Certifying Spectrum-Dependent Equipment*)

4.6.10 Environmental Engineering Program

Status: Optional, to be included if there are significant environmental considerations for the design of the Materiel System.

Purpose: To ensure that environmental considerations, including compliance with legislation, are included in the design and development of the Materiel System.

Policy: CASG Policy (E&T) 12-8-002, *Materiel System Environmental Management*

Guidance: Clause 4.6.10 is to be included when environmental considerations for the design of the Mission System and/or new Support System Components is significant and exceed the issues addressed by other clauses. Drafters should note that environmental considerations that also affect health and safety are considered by clause 4.6.6, System Safety Program and Disposal Requirements are addressed under clause 5.2.6, Supply Support Design. Environmental issues related to work under the Contract (ie, not the Supplies themselves) are addressed by clauses for Health, Safety and Environment (clause 9) and, if applicable, the GFF Licence.

Clause 4.6.10 requires development activities to address specific requirements and constraints for the Materiel System. This clause follows a standard approach, defining objectives, planning requirements, and activities conducted in accordance with the Approved plan. Clause 4.6.10.1 identifies generic objectives. Clause 4.6.10.2 begins with planning and drafters need to determine if a standalone plan is required or if the program can be managed under the SEMP, and select the appropriate clause from the options. If a standalone plan is required then a DID must be developed; if included within the SEMP the environmental engineering clauses should be added to DID-ENG-MGT-SEMP, clause 6.3.

Planning and implementation should consider the existing mechanisms within the System Safety Program. MIL-STD-882E defines requirements for hazard analyses and requirements for an environmental HAR are included in DID-ENG-SOL-HAR. The HAR is supported by detailed analysis results in the Hazard Log, prepared in accordance with DID-ENG-SOL-HL.

Where specific studies are to be requested (and won't be an automatic result of specified requirements) clauses 4.6.10.2.7 – 8 provide an outline template for the analysis and a report.

Drafter's Action: Drafters need to determine if clause 4.6.10 is required. If not required, the clauses under the heading should be replaced with a single 'Not used'.

Drafters need to determine if a standalone plan is required or if the SEMP will be sufficient, and develop or modify the applicable DID. Consideration should be given to the existing analysis and reporting mechanisms in clause 4.6.6.

Drafters should define the need for any specific studies or delete the outline for the study clauses.

Related Clauses: Clause 4.6.5, Electromagnetic Environmental Effects

Clause 4.6.6, System Safety Program

Clause 5.2.6, Disposal Requirements

DID-ENG-SOL-HAR, which includes requirements for an environmental HAR.

DID-ENG-SOL-HL, which can capture details results of environmental analyses.

Further Reading: MIL-STD-882E *Standard Practice for System Safety*, Appendix B, Task 207.

4.7 Interface Management

Status: Optional, to be included where the complexity of system interfaces, including to integrate with external systems, warrants a specific working group.

Purpose: To ensure that risks and issues associated with developing and implementing system interfaces are identified and managed effectively.

Policy: DMI (ENG) 12-5-002 *CASG Policy on System Interface Management*

Guidance: This clause provides for the management of the development and implementation of external system interfaces; however, the clause may be adapted for complex internal interfaces, such as those required to integrate GFE. Drafters should consider the complexity of system interfaces when deciding to include this clause.

Drafters should consider the CASG policy and associated procedure and handbook when making this determination. The policy states:

"To determine which interfaces need to be managed and controlled by Defence during acquisition and sustainment of a product, Defence Project teams must identify:

a. those elements of the products being acquired that may need to be changed over the life-of-type (eg, due to obsolescence or product evolution); and

b. each interface that may be used by another party for Defence purposes."

If not required, the clauses under the heading can be deleted and the heading replaced with 'Not used'.

When this clause is required, the drafter / project team should identify significant interfaces within the OCD and FPS; usually by the need to integrate with existing Defence or other external systems, or to integrate GFE. Further interfaces will be identified leading up to SDR, see clause 4.2.5. When interfaces are considered to be complex, or due to the number of interfaces, this clause 4.7 should be used to address interface management and provide the Commonwealth with visibility.

An ICWG is one mechanism for the Contractor, Commonwealth and Associated Parties to manage interface risks. Clause 4.7 uses ICWGs to resolve interface issues that may arise across project, contractor and government boundaries. In particular, interfaces between the Mission System and other systems under development (eg, under System-of-Systems projects) may have interfaces that change as their designs develop, but the separate systems need to integrate for the Capability to be provided.

Given that one of the primary functions of ICWGs is to resolve interface issues, multi-system / cross-contract forums may drive design changes onto the project that affect the scope of work under the Contract. Accordingly, there is benefit in specifying interface requirements pre-contract, as far as possible, in order to minimise unnecessary scope changes later on. Nevertheless, the Commonwealth Representative should consider the reasonableness of any change when issues of scope arise under the Contract (ie, was it reasonable for the Contractor to known about this issue when tendering?). Furthermore, V&V involving interfacing systems developed under separate contracts can represent further risk, which explains why the Commonwealth might wish to avoid being the prime system integrator for a project. Accordingly, it is sound practice in a project that involves complex or multiple

interfaces for schedule and cost contingency to be targeted at the resolution of interface issues.

Problems obtaining and providing interface data (eg, specifications) is one reason for minimising the use of GFE, as limited Commonwealth's IP rights often makes it difficult to provide the IP sublicenses required by different contractors. Drafters should review the IP clauses and the 'default rights' under clause 5 of the COC, any additions to those rights for interfacing systems, and specifying IP requirements through the TDSR Schedule (see clause 3.15), This should also be undertaken for the related contracts. Additionally, interface data for GFE and Government-Furnished Software applicable to interfaces should be identified as GFD under the Contract at Attachment E, which includes requirements to reference IP and export control restrictions. Guidance should be sought from CASG PCPP on both of these matters when drafting the RFT.

Clause 4.7.1 requires the Contractor to design, develop and implement external interfaces in accordance with the SEMP, and to document design information for both internal and external interfaces (internal interface documentation can be critical for through-life system modifications and upgrades).

Clause 4.7.2 outlines requirements for ICWGs, with the Contractor to add detail in the SEMP. Significant interfaces with new and existing systems, which the Commonwealth considers warrant an ICWG, may be identified in the note to tenderers. In such cases, the Commonwealth seeks to establish a direct relationship between the two design teams via an ICWG, without the Commonwealth needing to 'get in between' the designers. Note that tenderers may identify a different set of ICWGs if they supply any of the interfacing systems.

Drafters should identify high-risk interfaces at clause 4.7.3 where it is considered appropriate for prototyping, in order to reduce risks. These prototyping requirements would often be discussed during ODIA or other pre-contract work.

Drafter's Action: Drafters need to consider the need for ICWGs and whether to include this clause. When applicable, consideration should also be given to the timing of the delivery of related GFE and GFD to be listed in Attachment E.

Drafters are to ensure that the Commonwealth's IP rights will enable ICWGs to function. For cross-project ICWGs, drafters should ensure that equivalent requirements are included in the contracts with other parties.

Drafters are to identify external developmental interfaces in the note to drafters and identify high-risk interfaces in clause 4.7.3.

Related Clauses: Clauses 3.5, 3.6 and 3.9 of the COC address the contractual provisions for GFM.

Clause 5 of the COC addresses the contractual provisions relating to IP.

Clause 3.13, Contractor Managed Commonwealth Assets

Clause 3.15, Technical Data and Software Rights Management

Clause 3.16, Defence Security Compliance

Further Reading: DMSP (ENG) 12-5-004 *CASG Standard Procedure for Interface Management and Control*

DMH (ENG) 12-5-002 *Interface Management Guide*

5. INTEGRATED LOGISTIC SUPPORT

Warning: Clause 5 should never be deleted! In situations where total contractor support is envisaged, most of clause 5 will still be required for the following reasons:

a. This clause includes design of the Support System to be implemented by Defence and In-Service Support contractors, as such clause 5 provides insight into whether a valid Support System that meets Commonwealth preparedness objectives at a minimised LCC can be provided.

b. Even if the Commonwealth will not perform maintenance, operators of the Mission System will require training, publications, and (possibly) equipment and facilities. These aspects are covered by the SSCCs of Operating Support and Training Support.

c. Technical Data is inextricably linked to IP. As such, the Technical Data clauses will always be required to ensure that Commonwealth IP objectives are realised.

5.1 Integrated Logistic Support Program

Status: Core

Purpose: To require the Contractor to implement an effective Integrated Logistic Support (ILS) program when addressing Supportability-related elements of the Contract.

Policy: DEFLOGMAN Part 2 Volume 10 Chapter 3, *Integrated Logistic Support*

Guidance: Refer to guidance for subclauses.

Drafter's Action: Refer to guidance for subclauses.

Related Clauses: Refer to guidance for subclauses.

Further Reading: DMM (LOG) 04-0-001, *Materiel Logistics Manual*

DMH (LOG) 04-01-002, *ILS Primer for CDG Project Document Suite Guide*

5.1.1 ILS Program Objectives

Status: Core

Purpose: To state the ILS program objectives.

Policy: DEFLOGMAN Part 2 Volume 10 Chapter 3, *Integrated Logistic Support*

Guidance: Clause 5.1.1.1 identifies the high-level objectives of implementing ILS, as follows:

a. A **Mission System designed for Supportability**. This objective, co-ordinated with the engineering program, is to deliver a Mission System designed to enable a high level of availability with minimal support burden. This objective should be interpreted for the level of design activity. For example, if off-the-shelf subsystems will be integrated into a Mission System, selecting subsystems that exhibit high reliability and minimise the need for unique Support Resources may be preferable over others.

b. A **Support System designed to support the Mission System**. The second objective is to deliver a Support System solution that:

(i) from the combination of new and existing Support Resources and infrastructure, is most effective in supporting the Mission System;

(ii) minimises the LCC to the Commonwealth;

(iii) enables the required level of availability to be achieved; and

(iv) complies with any other program requirements and constraints.

c. **Implementation of the Support System**. The third objective is to implement the Support System (in coordination with Transition program activities). Implementation requires:

(i) identifying an optimised range and quantities of Support Resources;

(ii) identifying all of the information and skills transfer required for support; and

(iii) the delivery, set up, and integration with existing resources of all elements required by the Commonwealth and the contractors and subcontractors who will provide in-service support.

Some programs will have overriding requirements that are not covered by the generic ILS program objectives. Examples include reducing the number of Defence personnel to a predetermined level or to create a new support capability within Australia. Such strategic objectives may need to be added to clause 5.1.1.1, particularly if they are included in the FPS as requirements or constraints.

Acknowledgement and understanding of the ILS program objectives is intended to ensure that the Contractor's ILS and LSA programs will be prioritised to achieve these objectives. The objectives should influence the Contractor's planning and provide frame of reference within which the suitability of the ILS program can be assessed by the Commonwealth Representative.

Drafter's Action: Clause 5.1.1.1 may be tailored to specify additional objectives for the ILS program. If there are no additional high-level objectives, drafters should include the clause in the RFT without alteration.

Related Clauses: All other clauses under clause 5.

Clause 4, Systems Engineering, for the design of the Mission System; in particular clause 4.6, Specialty Engineering, as many of these activities directly influence Supportability characteristics of the Mission System and the need for support.

Clause 3.11, Life Cycle Cost

Further Reading: Nil

5.1.2 ILS Program Management

Status: Core

Purpose: To ensure the ILS program is managed in a manner that delivers an effective Supportability solution by ensuring that the Contractor's organisational structures, processes, and procedures (as identified in the plans) are consistent with the achievement of the ILS program objectives.

Policy: Refer to guidance for clause 5.1.

Guidance: The ILS Program Management clause requires the principle management activities of planning for and conducting the ILS program.

Drafter's Action: Refer to guidance for subclauses.

Related Clauses: All other clauses within clause 5.

Further Reading: Nil

5.1.2.1 Planning

Status: Core

Purpose: To ensure that the ILS program is appropriately planned for the scope of the Contract and to provide the Commonwealth with visibility of the Contractor's processes, including the adaptation of related standards.

Policy: Refer to guidance for clause 5.1.

Guidance: A guiding principle for *ASDEFCON* is focus on outcomes and not to prescribe process to the Contractor. The processes to be followed will be defined by the Contractor in their plans. This encourages industry to apply best practice to achieve required outcomes. Planning strategies delivered as Tender deliverables should

demonstrate that a potential Contractor has well-structured and effective processes to achieve the required outcomes.

An ODIA is part of the standard acquisition process for the *ASDEFCON (Strategic Materiel)* template. ODIA or other pre-contract work helps to achieve the objective, to focus on outcomes, by allowing plans to be reviewed, agreed and ready for the Contract at the ED.

The Integrated Support Plan (ISP) is the most important plan for describing the ILS program; hence, it is required for all projects. If subordinate plans are not required as stand-alone plans, due to limited effort for that particular area, the ISP must address the subject matter that would otherwise be contained in the individual plan. For example, if all items of S&TE were off-the-shelf, then a separate S&TE Plan may not be needed; however, the ISP would still address the process to determine the numbers required and to define the on-going support for the S&TE.

The set of ILS management plans in *ASDEFCON (Strategic Materiel)* represent a complete set for a Contract, and in most cases additional ILS management plans will not be required (although work plans will likely be used to execute the directions set in the management plans). The default set of plans are as follows:

a. **Integrated Support Plan (ISP)**. The ISP is the top-level plan for managing the ILS program. It details standards that will be tailored to achieve the requirements of the Contract. The ISP defines the processes for the development of Support Resources if subordinate plans are not included, and incorporates an LSA Plan. Refer DID-ILS-MGT-ISP.

b. **Supply Support Development Plan (SSDP)**. The SSDP details the standards, methodology and processes to define and develop detailed aspects of the Supply Support Constituent Capability (eg, Spares and Packaging). The SSDP must consider Commonwealth requirements for Supply Support, including deployments. Refer DID-ILS-SUP-SSDP.

c. **Training Support Plan (TSP)**. The TSP details the standards, methodology and processes for the Training Support program, including processes to analyse, define, develop, implement and evaluate new and modified Training courses. Refer DID-ILS-TNG-TSP.

d. **Technical Data Plan (TDP)**. The TDP details the standards, methodology and processes for identifying and developing the full scope of Technical Data. The plan must describe a process consistent with issues related to the use of existing data, IP, escrow, and so on. Refer DID-ILS-TDATA-TDP.

As the Commonwealth does not specify the processes to be followed (as much as possible), the Commonwealth Representative is to Approve the Contractor's plans before they can be applied. The Contractor is then to conduct the relevant program in accordance with the Approved plans. In selecting or de-selecting subordinate plans, the drafter should be aware that, under *ASDEFCON (Strategic Materiel)* principles, these are mechanisms for ensuring program governance.

Scheduling is an important part of planning. For consistency, *ASDEFCON (Strategic Materiel)* requires all subordinate schedules to be incorporated into the CMS. Any scheduling and milestones described within plans should be derived, therefore, from the CMS.

Note that the ILS clause includes requirements for a Software Support Plan and a Disposal Plan. These plans are not used under the Contract rather they are deliverables for in-service planning and use.

Drafter's Action: Clause 5.1.2 may be tailored. Aside from the ISP, the drafter must determine if the subordinate plans listed are required given the expected activity of the Contract. Drafters may also consider if there a need for any additional domain-specific plans.

DIDs for each applicable plan should be included in schedules to the CDRL. Whether Contract-ready ILS plans are required prior to Contract (ie, through ODIA or pre-contract work) has a significant influence on the CDRL delivery times.

Related Clauses: Clause 3.6 of the COT refers to ODIA.

TDR E-1.6, ILS Strategy

Clause 2.5, Draft Data Items and Strategies included at Attachment K

Clause 3.2, Project Planning

Clause 3.2.5, Earned Value Management System, which includes requirements for the IBR and the detailed planning and scheduling of ILS-related work packages.

Clause 4.1, Systems Engineering Management

All other subclauses under clause 5.

Clause 6.1, Configuration Management Planning, includes CM planning in relation to the Support System and Support System Components.

Clause 7.1.2, Verification and Validation Plan, includes requirements for planning V&V activities for Mission System Supportability and the Support System.

DID-ILS-MGT-ISP defines the content requirements for the ISP.

DID-ILS-SUP-SSDP defines the content requirements for the SSDP.

DID-ILS-TNG-TSP defines the content requirements for the TSP.

DID-ILS-TDATA-TDP defines the content requirements for the TDP.

Further Reading: Nil

5.1.2.2 Mandated System Reviews

Status: Core

Purpose: To require the Contractor to conduct a set of ILS-specific MSRs to:

a. provide insight into the Contractor's progress of Supportability and Support System-related activities against ILS management plans;

b. inform decisions for the procurement of Support Resources; and

c. determine the readiness of Training and new / modified support Facilities.

Policy: Refer to guidance for clause 5.1.

Guidance: The Commonwealth uses MSRs for insight into Contractor progress at key decision points, hence they are major Milestones. MSRs include IBR; MSRs in the SE, CM and V&V clauses; and specific MSRs for the ILS program. The overall conduct of MSRs is covered under clause 4.1.5 and in the Contractor's Approved SRP. ILS staff should review the SRP to ensure that ILS MSRs are adequately addressed.

ILS involvement in the SE-related MSRs ensures coordination between programs. Supportability of the Mission System design is addressed and the impact of Mission System design on the Support System can be evaluated as a whole-of-Materiel System activity. Attention is drawn to clause 3.11, which brings together the Mission System and Support System for LCC purposes, which is a consideration at most MSRs.

Checklists are used to define entry and exit criteria and review items for each MSR. These ensure that both parties have a clear understanding of MSR requirements. Standard checklists are included in the *ASDEFCON (Strategic Materiel)* templates; they do not require tailoring except for MSR-CHECKLIST-SAA, for the System Acceptance Audit, and MSR-CHECKLIST-TXRR, for the Transition Requirements Review. Checklists for any Contract-unique MSRs will need to be developed to the specific requirements of the particular Contract. If the objectives for more than one review can be met at the same time, they may be conducted simultaneously.

Integrated Baseline Review. The IBR provides Contract-wide planning and review of the Contractor's execution plan (eg, CWBS, CMS, work packages, and staff / skills

profile) that will underpin higher-level management plans, such as the ILS management plans in SOW clause 5.1.2.1.

System Requirements Review and System Definition Review. SRR and SDR address both Mission System and Support System requirements and are addressed under clauses 4.2.4 and 4.2.5, respectively. The SRR and SDR meetings for the Mission System may be held independently of those for the Support System; however, this is not recommended because of the relationship between the requirements, trade-offs and design of the two systems.

Preliminary Design Review and Detailed Design Review. PDR and DDR do not address the Support System because there is a specific Support System Detailed Design Review (SSDDR). Nevertheless, ILS staff should be involved in PDR and DDR because of the significant implications for the Support System (eg, reliability and maintainability of the Mission System, outcomes of FMECA, and updates to the LSAR). Design and development activities for major Support System Components may also be discussed at these reviews, such as significant items of Training Equipment, S&TE, or In-Service software development test-beds.

Functional Configuration Audit and Physical Configuration Audit. FCA and PCA (refer clause 6.7) are conducted against Support System Components (eg, S&TE, Training Equipment and Technical Data) particularly for those that are subject to development under the Contract.

Test Readiness Reviews. TRRs are MSRs conducted just prior to a test program or phase to ensure that all procedures and resources are available, including to test elements of the Support System (eg, Maintenance demonstrations) – refer to the discussion for clause 7.1.5 for details.

System Acceptance Audit. SAA is held as a detailed audit to confirm that all requirements have been met, prior to the Acceptance of each Mission System (or batch of Mission Systems). SAA should also confirm the implementation of the Support System and delivery of sufficient Support Resources to enable support of the Mission System(s) presented for Acceptance.

System Reviews that are specific to the ILS program are detailed in SOW clauses 5.1.2.3 to 5.1.2.10 – refer to guidance below.

Drafter's Action: The list of applicable MSRs may be amended to suit the individual Contract. For example, if there is no need to provision Long Lead-Time Items (LLTIs), then the LLTIR would not be required, the LLTIR clause (5.1.2.5) would be replaced with 'Not used', and the LLTIR would be removed from the clause 5.1.2.2.

Drafters are to ensure that the appropriate versions of the checklists for the ILS-related MSRs are included under Annex D.

Drafters are to identify which ILS MSRs should be identified as Stop Payment Milestones and include entry and exit criteria in Annex C to Attachment B.

Related Clauses: Clause 3.2.5, Earned Value Management System, includes the IBR.

Clause 3.12.2, Transition Requirements and Coordination, addresses the TXRR, which has significant ILS planning considerations and includes participation by Contractor(s) (Support) and Approved Subcontractors (Support).

Clause 4.1.1, Engineering Organisation and Planning, which addresses the SEMP, which should be coordinated with the ILS plans.

Clause 4.1.5, Conduct of System Reviews

Clause 4.2.4, System Requirements Review

Clause 4.2.5, System Definition Review

Clause 4.3.1, Preliminary Design Review

Clause 4.3.2, Detailed Design Review

Clauses 5.1.2.3 to 5.1.2.10 address the ILS-program MSRs.

Clause 6.7, Configuration Audits

Clause 7.1.5, Test Readiness Reviews

Clause 8.5, System Acceptance Audit

Annex D, MSR Checklists include entry, review and exit criteria for each MSR.

Clause 7.10 of the draft COC sets out provisions for Stop Payment Milestones.

Annex C to Attachment B, Schedule of Milestone Entry and Exit Criteria

DID-ENG-RVW-SRP defines the content requirements for the SRP.

DID-ENG-RVW-PACKAGE specifies the collection of information to support MSRs.

Further Reading: DMH (ENG) 12-2-001 *Materiel System Review Guide*

5.1.2.3 Support System Detailed Design Review

Status: Core

Purpose: To require the Contractor to conduct an SSDDR to demonstrate that the design and development of the Support System and that Support System Components are adequately defined for further development and fabrication, so that the functional requirements of the Support System can be realised.

Policy: Refer to guidance for clause 5.1

Guidance: As the design of the Support System almost always lags the Mission System the SSDDR was introduced to provide DDR functionality to the Support System while enabling results from the Mission System DDR to be addressed by the design of the Support System and Support System Components. If objectives of both the DDR and SSDDR can be met at about the same time, the SSDDR may be held almost immediately after the DDR.

To provide objective evidence for the maturity of the Support System's design, *ASDEFCON (Strategic Materiel)* introduced a Support System Description (SSDESC), defined by DID-ILS-DES-SSDESC. The SSDESC is conceptually similar to the Mission System's System / Subsystem Design Description (SSDD), but is distinctly different because the Support System is largely based on 'soft systems' such as organisational structures and support contracts. The SSDESC defines a system-wide design and specifically addresses each of the SSCCs, making it a principle reference for follow-on LSA activities (eg, Spares-optimisation) and drafting In-Service Commonwealth and Contractor (Support) plans.

The SSDDR also allows for any final updates to the Support System Specification (SSSPEC) defined by DID-ILS-DES-SSSPEC, (noting that any change may require CCP action or an Application for a Deviation, to vary from the specification).

The SSDDR reviews the 'physical' design of the Support System but does not require exact details of Support Resources or procedures. For example, it is sufficient to define maintenance levels, locations, and the types of maintenance performed at each location, without having the Level of Repair Analysis (LORA) and Spares Optimisation results to specify exactly how many Spares are needed.

Specific areas of the SSDDR include:

a. **Support Resource requirements**. Support Resources are physical resources used to support the Mission System and other elements of the Support System (eg, Personnel, S&TE, Packaging, Facilities, Training Equipment and Technical Data). These resources should be identified for the Mission System and Support System even if exact quantities are unknown..

b. **Support System Component development**. Where Support System Components have a design requirement, design documentation that is suitable to enable production / implementation should be presented if not already presented at DDR.

c. **Software development documentation**. All new and existing Mission System and Support System Software should be identified in the SWLIST. Software Supportability characteristics should be defined (eg, size, change traffic, modularisation, security segregation, and support tools) and the resulting support processes and resources should be defined in the Software Support Plan (SWSP).

d. **Support System Constituent Capabilities**. *ASDEFCON* defines five SSCCs, (ie, Operating Support, Engineering Support, Maintenance Support, Supply Support, and Training Support) capable of providing services as a result of the management and organisation of Support Resources. For example, the design of Operating Support defines direct support of the Mission System; for example, deployment requirements for fuel, transport, armaments, operator training, and operator Technical Data. At the SSDDR, the designs of each of the SSCCs should be defined to a level that allows the Contractor to demonstrate that the combined Mission System and Support System solution will meet the requirements of the Contract, at a minimised LCC, when the systems are operated and supported in accordance with the OCD.

e. **LCC**. The preceding point highlights the role of LCC at the SSDDR. Refer to clause 3.11 with respect to LCC results presented at each of the MSRs.

Drafter's Action: MSR-CHECKLIST-SSDDR should be reviewed and CDRL requirements for related deliverable data items should be amended if required. Generally, this checklist should not be amended.

Related Clauses: Clause 4.2.5 and 4.3.2 address the SDR and DDR, respectively.

DID-ILS-DES-SSDESC defines the content requirements for the SSDESC.

MSR-CHECKLIST-SSDDR defines the entry and exit criteria and review items for the SSDDR.

Further Reading: *ASDEFCON Linkages Module (Strategic)* for the transfer of SSDDR and SSDESC information to the Contract (Support)

5.1.2.4 Task Analysis Requirements Review

Status: Optional. To be included when the Commonwealth requires visibility of significant task analysis activities as part of the LSA program.

Purpose: To require the Contractor to conduct a MSR to demonstrate that the definition of operations and support tasks have been defined sufficient to enable the definition of Support Resource allocations and to draft technical manuals and Training Materials.

Policy: Refer to guidance for clause 5.1.

Guidance: Task analysis is the foundation for all Support Resource calculations and for developing technical manuals as part of the LSA program. Prior to preparing provisioning lists and technical manuals, the task inventory is reviewed to ensure the suitable allocation of tasks to Defence and Contractor organisations, the resource requirements for all tasks, that task procedures are valid, and that tasks have been allocated to Personnel with appropriate skills. Although this activity occurs over a period of time, the purpose of the Task Analysis Requirements Review (TARR) is to consolidate and conclude the review process.

The detailed inventory of tasks is developed by the LSA process. Task Analysis Reports (TARs), prepared in accordance with DID-ILS-DES-TAR, depict four stages in a process including developing the task inventory, task resource requirements, task procedures, and task personnel competencies. These four stages are applied to each of the five SSCCs under the LSA program (SOW clause 5.2). TARs may be delivered as stand-alone reports or as covering documents for task analysis data in a Logistic Support Analysis Record (LSAR) that is available to the Commonwealth for review prior to the TARR.

Identified task Personnel Competencies are used in a performance needs analysis to define required learning outcomes and Training course needs. A Performance Needs Analysis Report (PNAR) is usually scheduled for delivery prior to the final TAR (ie, after the definition of all task personnel competency requirements). Note that some projects create a Training design review, in addition to the TARR, to look more closely at the proposed Training program.

Drafter's Action: *ASDEFCON (Strategic Materiel)* is intended for developmental programs where the Support System and Support Resources require significant development. If the risk involved is assessed as low, this may allow the TARR to be omitted. Such a decision must be weighed up against the reduced visibility of the rationale for Support Resource procurements and the likely suitability of technical manuals. If sufficiently low risk, the clause can be replaced with 'Not used'. Such a decision may have to be delayed until ODIA or pre-contract work.

When this MSR is required, MSR-CHECKLIST-TARR should be reviewed but, generally, does not require amendment. The CDRL requirements for related deliverable data items should be amended as required.

Related Clauses: Clause 5.1.2.3 for the Support System Detailed Design Review, which reviews the Support System into which tasks are allocated to various organisations.

DID-ILS-DES-TAR defines the content requirements for the Task Analysis Report.

DID-ILS-DES-PNAR includes personnel competencies resulting from task analysis.

DID-ILS-TDATA-LSAR defines requirements for the LSAR.

MSR-CHECKLIST-TARR defines the entry, review and exit criteria for the TARR.

Further Reading: DEF(AUST)5691 for Activity PL1, Task Analysis.

ADO LSA Manual regarding LSA Activity PL1, Task Analysis

5.1.2.5 Long Lead Time Items Review

Status: Optional. To be included when the risks associated with procuring LLTIs are sufficient to warrant the inclusion of a MSR.

Purpose: To require the Contractor to conduct a MSR to determine the range and scale of LLTIs to be procured.

Policy: Refer to guidance for clause 5.1.

Guidance: LLTIs can be Spares, S&TE, Training Equipment and any other Support Resource that must be procured in advance to enable the items to be delivered in time to be included in production or for In-Service support. Items may be LLTIs due to the time needed for approvals (eg, export controls), because of long production lead times (eg, custom built test equipment), or because a long time is needed to establish an in-country repair capability. Although Facilities have long lead times for construction, they are managed separately to LLTIs.

The purpose of the LLTIR is to review the LLTIs recommended by the Contractor for purchase prior to more thorough analysis. Some items may become LLTIs because it is cost-effective to procure them early as part of a production run, rather than wait until the full analysis has been completed. The emphasis of the LLTIR is, therefore, to balance the risk of purchase, using limited information, against the increased costs and risk of delay to production and implementation schedules. Accordingly, for entry into the LLTIR, each LLTI should be justified in terms of lead-time (preventing later provisioning), costs versus benefits, and risk analysis.

A specific deliverable data item is not specified for the LLTIR; rather, the provisioning lists for Spares, S&TE and Training Equipment are used according to the types of LLTIs.

Drafter's Action: In some cases, the drafter may be able to determine that the LLTIR is not required; in which case, the clause should be replaced with 'Not used'. In some instances, this will not be possible until ODIA or other pre-contract work.

When this review is required, MSR-CHECKLIST-LLTIR should be reviewed. Generally, this checklist should not be amended. The CDRL requirements for related deliverable data items should be amended as required.

Related Clauses: Clause 3.6, Risk Management, defines risk-management processes and provides a basis for assessing the risks of procuring or not procuring individual LLTIs.

DID-ILS-SUP-RSPL defines the content requirements for the Recommended Spares Provisioning List (RSPL).

DID-ILS-S&TE-S&TEPL defines the content requirements for the S&TEPL.

DID-ILS-TNG-TEL defines the content requirements for the TEL.

MSR-CHECKLIST-LLTIR defines the entry, review and exit criteria for the LLTIR.

Further Reading: DEF(AUST)5691 for Activity PL3, Definition of Resource Package

ADO LSA Manual LSA Activity PL3, Definition of Resource Package

5.1.2.6 Spares Provisioning Preparedness Review

Status: Core

Purpose: To require the Contractor to conduct a MSR to determine / confirm the range and scale of Spares (including RIs and an initial lay-in of non-RIs) to be procured.

Policy: Refer to guidance for clause 5.1.

Guidance: The purpose of the Spares Provisioning Preparedness Review (SPPR) is to review the RSPL (as defined by DID-ILS-SUP-RSPL) to enable the Commonwealth to Approve the RSPL and proceed with Spares procurement. Before the SPPR, the Commonwealth should have reviewed the Task Resources Reports, LORA Report (defined by DID-ILS-DES-LORAR) and Spares-optimisation modelling results delivered as part of the RSPL.

Common Spares from inventory (ie, items already in use with other Capabilities) or other sources of supply (eg, direct from a local supplier, particularly for non-RIs) should be considered prior to SPPR. This is referred to a 'Spares screening' and may be undertaken by the Commonwealth by comparing the RSPL with MILIS lists. Codification Data (as defined by DID-ILS-TDATA-CDATA) may also be delivered before SPPR and enable Spares screening by identifying equivalent parts. Evaluation of the RSPL should also consider any previous procurement of LLTIs.

Drafters should note that the price of Spares is not included in the initial Contract Price but subject to a tendered Not-To-Exceed (NTE) price (refer to Annex D and Annex F of the COT). After Approval of the RSPL the Contractor prepares a CCP to incorporate the list of Spares into the Delivery Schedule (Attachment C) for Supplies and to include the price in the Contract Price. This process helps to ensure value for money for the Spares package to be procured.

The SPPR is also used to review the recommended Packaging Provisioning List (defined by DID-ILS-SUP-PACKPL). This is for Packaging that are Supplies (not simply for the initial delivery of other Supplies), are often special-to-type, and re-used for the life of the item it protects (eg, moulded plastic cases designed to protect specific Spares or S&TE).

Although the SPPR appears in the SOW prior to the provisioning preparedness reviews for Training Equipment and S&TE, the SPPR should be scheduled after these other MSRs to allow Spares for S&TE and Training Equipment to be included in the RSPL.

The SPPR is applicable even if the Contractor is providing Spares for an initial support period. This ensures adequate numbers of Spares for the initial support period and may indicate the likely increase required for long-term In-Service support, subject to an analysis of Spares usage data collected in the initial support period. In this scenario, a second SPPR prior to Contract close may be required.

Drafter's Action: MSR-CHECKLIST-SPPR should be reviewed and the CDRL requirements for related deliverable data items should be amended as required. Generally, this checklist should not be amended.

Related Clauses: TDR D-2 requires tenderers to provide an NTE price for Spares.

TDR F-8.1 requires tenderers to provide a proposed RSPL.

Clause 5.1.2.1, Planning, includes the SSDP (and ISP) for planning activities to define Spares and Packaging requirements.

Clause 5.1.2.5, Long Lead Time Items Review, for Spares purchased as LLTIs.

Clause 5.2.8.2, Spares, requires Spares-optimisation to produce the RSPL.

Clause 5.2.8.3 requires analysis of Packaging in order to produce the PACKPL.

Clause 5.3.2 addresses the implementation (procurement, production and delivery) of the Spares and Packaging procured as a result of the SPPR.

DID-ILS-SUP-RSPL defines the content requirements for the RSPL, including Spares-optimisation model data to enable evaluation by the Commonwealth.

DID-ILS-SUP-PACKPL defines the content requirements for the PACKPL.

DID-ILS-SUP-SSDP defines the requirements for the SSDP.

DID-ILS-TDATA-CDATA defines the requirements for Codification Data.

MSR-CHECKLIST-SPPR defines the entry, review and exit criteria for the SPPR.

Further Reading: DEF(AUST)5691 for Activity PL3, Definition of Resource Package

ADO LSA Manual LSA Activity PL3, Definition of Resource Package

5.1.2.7 S&TE Provisioning Preparedness Review

Status: Optional. To be included when the risks associated with procuring S&TE warrant an MSR, the S&TE Provisioning Preparedness Review (S&TEPPR).

Purpose: To require the Contractor to conduct a MSR to determine the range and scale of S&TE to be procured.

Policy: Refer to clause 5.1.

Guidance: The purpose of the S&TEPPR is to review the S&TE Provisioning List (S&TEPL, which is defined by DID-ILS-S&TE-S&TEPL) to enable the Commonwealth to Approve the recommended S&TE list and to proceed with S&TE procurement. Before the S&TEPPR the Commonwealth should have reviewed the Task Resources Report, LORA results and S&TEPL. By confirming tasks performed by location, LORA identifies the location of S&TE and enables S&TE utilisation to be calculated through mechanisms such as LSAR summary reports.

The use of existing S&TE for operations or from maintenance, supply, and Training Facilities, should also be identified. Also important is the identification of any modifications and Software development requirements for existing Automated Test Equipment (ATE). Considerations of standardisation and offsetting with existing items of S&TE (already in service) would be a subject for discussion at the S&TEPPR – like screening for existing Spares, screening for existing S&TE (particularly minor items like hand tools or personal protective equipment) may use Codification Data to identify equivalent items. Evaluation of the S&TEPL should also consider any previous procurement of S&TE as an LLTI.

Drafters should note that the price for S&TE is not included in the initial Contract Price but is subject to a NTE price (refer to Annex D and Annex F of the COT). After Approval of the S&TEPL the Contractor prepares a CCP to incorporate the list of S&TE into the Delivery Schedule (Attachment C) for Supplies and to include the price into the Contract Price. This process helps to ensure value for money for the S&TE package to be procured.

Scheduling the S&TEPPR may be dependent upon whether S&TE can be procured off-the-shelf or if development is required. The S&TEPPR may be conducted with or after the Training Equipment Provisioning Preparedness Review (TEPPR) because S&TE may be required for, or also used as, Training Equipment.

Drafter's Action: In the event that only a small amount of off-the-shelf S&TE is to be acquired through the Contract, this clause may be deleted and replaced with 'Not used'. Alternatively, the S&TEPPR could still be scheduled to be concurrent with the SPPR if the requirement for S&TE is small.

MSR-CHECKLIST-S&TEPPR should be reviewed. Generally, this checklist should not be amended. The CDRL requirements for related deliverable data items should be amended as required.

Related Clauses: TDR D-2 requires tenderers to provide an NTE price for S&TE.

TDR F-8.2 requires tenderers to provide a proposed S&TEPL.

Clause 5.1.2.1, Planning, includes the requirement for the ISP, which is used for plan activities that define and implement S&TE requirements.

Clause 5.1.2.5, Long Lead Time Items Review, for S&TE purchases as LLTIs.

Clause 5.2.5, Maintenance Support Design, requires the conduct of LORA.

Clause 5.2.8.6, Support and Test Equipment, for analysis to produce the S&TEPL.

Clause 5.3.5, Implementation of Support and Test Equipment Requirements

DID-ILS-S&TE-S&TEPL defines the content requirements for the S&TEPL.

DID-ILS-S&TE-S&TEP defines the content requirements for the S&TEP.

DID-ILS-TDATA-CDATA defines the requirements for Codification Data.

MSR-CHECKLIST-S&TEPPR defines entry, review and exit criteria for the S&TEPPR.

Further Reading: DEF(AUST)5691 for Activity PL3, Definition of Resource Package.

ADO LSA Manual LSA Activity PL3, Definition of Resource Package.

5.1.2.8 Training Equipment Provisioning Preparedness Review

Status: Optional. To be included when risks in procuring Training Equipment warrant an MSR, the Training Equipment Provisioning Preparedness Review (TEPPR)

Purpose: To require the Contractor to conduct a MSR to determine the range and scale of Training Equipment to be procured.

Policy: Refer to clause 5.1.

Guidance: The purpose of the TEPPR is to review the Training Equipment List (TEL, which is defined by DID-ILS-TNG-TEL) to enable the Commonwealth to Approve the recommended TEL and proceed with the procurement of Training Equipment. In preparation for the TEPPR, the Commonwealth should have reviewed the Task Resources Report, PNAR, TEL and, if applicable, CBT requirements (defined by DID-ILS-TNG-CBT). Note that the Task Personnel Competency Reports (from the TAR) should have been fed into the performance needs analysis.

In preparing the TEL, the requirement for, and utilisation levels of, existing Training resources should have been identified. Considerations of standardisation and

offsetting with existing items of Training Equipment already in service would also be a subject of discussion at the TEPPR.

Drafters should note that the price for Training Equipment is not included in the initial Contract Price but is subject to a NTE price (refer to Annex D and Annex F of the COT). After Approval of the TEL the Contractor prepares a CCP to incorporate the list of Training Equipment into the Delivery Schedule (Attachment C) for Supplies and to include the price into the Contract Price. This process helps to ensure value for money is obtained for the Training Equipment to be procured.

Scheduling the TEPPR may be dependent on whether Training Equipment can be procured off-the-shelf or if development is required. Development may be required for maintenance training rigs, part task trainers, simulators, and other Training aids.

Drafters should be aware that the TEPPR does not address Training Materials. because Training Materials are Technical Data and included in the Contract Price.

Drafter's Action: In the event that only a small amount of off-the-shelf Training Equipment is to be acquired through the Contract, this clause may be deleted and replaced with 'Not used'. Alternatively, the TEPPR could still be scheduled to be concurrent with the SPPR if the requirement for Training Equipment is small.

MSR-CHECKLIST-TEPPR should be reviewed. Generally, this checklist should not be amended. The CDRL requirements for related deliverable data items should be amended as required.

Related Clauses: TDR D-2 requires tenderers to provide an NTE price for Training Equipment.

TDR F-8.4 requires tenderers to provide a proposed TEL.

Clause 5.1.2.1, Planning, includes the requirement for a TSP (and ISP), used to plan the definition and implementation of Training Equipment.

Clause 5.1.2.5, Long Lead Time Items Review, for any Training Equipment procured as LLTIs.

Clause 5.2.8.4, Training, for analysis of Training Equipment to produce the TEL.

Clause 5.3.4, Implementation of Training and Training Support Requirements

DID-ILS-TNG-TEL defines the content requirements for the TEL.

DID-ILS-TNG-TSP defines the requirements for the TSP.

MSR-CHECKLIST-TEPPR defines entry, review and exit criteria for the TEPPR.

Further Reading: *DEF(AUST)5691* for Activity PL3, Definition of Resource Package

ADO LSA Manual LSA Activity PL3, Definition of Resource Package

5.1.2.9 Training Readiness Review

Status: Optional. To be included if the Contractor will provide Training courses under the Contract and the preparation is significant enough that an MSR, the Training Readiness Review (TNGRR), is required for co-ordination and to confirm readiness of the parties involved.

Purpose: To require the Contractor to conduct a MSR to determine the readiness to provide Training and, if applicable, conduct V&V of Training courses and resources.

Policy: Refer to guidance for clause 5.1.

Guidance: The objective of the TNGRR is to enable the Commonwealth and the Contractor to undertake a final review of Learning Management Packages (which may include commercial Training Packages) including Training Materials, and of Training Equipment and Facilities (eg, classrooms) and to confirm that all necessary elements are ready to commence Training, including ADF students. Accordingly, the Commonwealth needs an opportunity to review the Training Materials and confirm

the readiness of Training Equipment and Facilities (even temporary facilities) prior to the TNGRR.

In addition to preparing for the commencement of Training, the TNGRR assists the Commonwealth to ensure that all necessary requirements for future support for Training Equipment, and the development and upkeep of Training Materials, have been planned for.

The TNGRR should be co-ordinated with the V&V program, like a Test Readiness Review for new and modified Training courses, leading to the Acceptance of the Training Support solution and related Supplies. Determination as to whether or not Training delivery and Training Support are fit for purpose may not be possible until the delivered Training courses are assessed (eg, Verified by evaluating the delivered Training and Validated in the work place through Mission System Validation and various Support System effectiveness demonstrations).

Several TNGRRs may be required for one contract, depending upon the scope and scheduling of Training delivery. For example, initial maintainer Training may be delivered at a different time to 'overhaul' maintenance Training, and review activities may be needed as Training Equipment is implemented at different locations for different courses. In such cases, it would be appropriate to schedule several TNGRRs, which may be agreed during pre-Contract work or at the IBR.

Drafter's Action: If no Training is to be delivered under the Contract, or if only established Training courses will be delivered (and is assessed as low enough risk not to require a review) this clause may be replaced with 'Not used'.

When this review is required MSR-CHECKLIST-TNGRR should be reviewed. Generally, this checklist should not be amended. The CDRL requirements for related deliverable data items should be amended as required.

Related Clauses: Clause 5.1.2.1, Planning, includes the requirement for an optional TSP.

Clause 5.1.2.8, Training Equipment Provisioning Preparedness Review

DID-ILS-TNG-TSP defines the requirements for the TSP.

MSR-CHECKLIST-TNGRR defines the entry, review and exit criteria for the TNGRR.

Further Reading: Nil

5.1.2.10 Facilities Readiness Review

Status: Optional. To be included if the Contractor will be providing, modifying or fitting out Facilities and the scope is significant enough to require an MSR, the Facilities Readiness Review (FACRR), to confirm readiness for use.

Purpose: To enable the Contractor to demonstrate the suitability of new / modified Facilities for occupation and the readiness of the Facilities to be handed over to the Commonwealth or used for the V&V of functions that the Facilities will support.

Policy: Refer to guidance for clause 5.1.

Guidance: The objective of the FACRR is to review Facilities that are new, refurbished, fitted-out, or otherwise modified by the Contractor and to confirm that they are complete and ready for handover to the Commonwealth or other agencies, ready to occupy, or ready to be used as part of the V&V program leading to the Acceptance of the Facilities and/or activities to be performed in those Facilities.

The FACRR also assists the Commonwealth to ensure that any necessary requirements for the future support of Facilities have been defined and, when applicable, planned for (eg, by confirming support arrangements with E&IG).

The FACRR should be co-ordinated with the V&V program, like a Test Readiness Review leading to the Acceptance of Facilities and/or the functions performed in them. Determination as to whether a Facility is fit for purpose may not be possible until the Facility is occupied and the typical activities within that Facility are

performed. The FACRR, therefore, may provide Verification that Facilities meet specified requirements and are ready for occupation, but Acceptance may not occur until after the Facilities have been used for Mission System demonstrations or Support System effectiveness demonstrations.

In preparation for the FACRR, the Commonwealth (the project team and E&IG) should have reviewed the Facilities Requirements Analysis Report (FRAR, defined by DID-ILS-FAC-FRAR), relevant building specifications, environmental reports, plans, approvals and certificates. Note that the FRAR should have considered other data items, such as the Task Resource Report, to identify the resource requirements needed in each Facility.

Note that *ASDEFCON* (*Strategic Materiel)* does not include provisions for the construction of Facilities; this is usually a separate activity managed by E&IG. Hence, the scope of Facilities work is restricted to fit-out, installation of equipment, or other non-structural changes. It is the responsibility of the Commonwealth project team to co-ordinate the Contract and E&IG Facilities construction / modification activities.

When multiple Facilities are involved, it may be appropriate to schedule several FACRRs. A FACRR should be held before each Facility, or group of Facilities, is offered for Acceptance. The number of FACRRs required may be agreed during pre-Contract work or at the IBR.

Drafter's Action: In the event that no Facilities are to be modified / delivered under the Contract, this clause may be replaced with 'Not used'.

When this review is required, MSR-CHECKLIST-FACRR should be reviewed. Generally, this checklist should not be amended. The CDRL requirements for related deliverable data items should be amended as required.

Related Clauses: Clause 5.1.2.1, Planning, includes the requirement to plan for Facilities.

Clause 5.2.8.7, Facilities, requires the delivery of the FRAR.

Clause 5.3.6, Implementation of Facilities Requirements

DID-ILS-FAC-FRAR defines the content requirements for the FRAR.

DID-ILS-MGT-ISP defines requirements for Facilities-related planning.

MSR-CHECKLIST-FACRR defines the entry, review and exit criteria for the FACRR.

Further Reading: Nil

5.2 Logistics Support Analysis Program

Status: Core (with optional subclauses)

Purpose: To require the Contractor to analyse and define, through a verifiable systems approach, the full extent of Support System design and resource requirements that will enable successful implementation of the Support System. This clause requires the Contractor to identify the outcomes necessary to implement the Support System, and the processes necessary for requirements identification, systems definition, and synthesis of the Support System.

Policy: DEFLOGMAN Part 2 Volume 10 Chapter 15, *Supportability Analysis*

DEF(AUST)5691, *Logistic Support Analysis*

DEF(AUST)5692, *ADO requirements for a Logistic Support Analysis Record*

ADO LSA Manual

Guidance: LSA is an analysis program undertaken to achieve Supportability and other ILS goals. LSA was adapted from SE to address the Supportability of the Mission System and to encompass specialised processes to define and implement the Support System. DEFLOGMAN Part 2 Volume 10 Chapter 15 *Supportability*

Analysis provides overarching policy for LSA with additional detail included in DEF(AUST)5691 and the *ADO LSA Manual*, with requirements for the LSAR (database) in DEF(AUST)5692. Aspects of LSA are also included or referenced in a number of documents, such as the *CDD Guide*.

Overseas standards (which may be used by overseas companies bidding for Australian contracts) include UK DEF-STAN 00-60, US MIL-STD-1388-1A (and MIL-STD-1388-2B for an LSAR), and MIL-HDBK-502. Other standards, such as S1000D™ for technical manuals and S2000M for supply procurement and management data, provide alternative standards for specific functions. S3000L, *International Procedure Specification for Logistic Support Analysis*, defines an LSA process with LSAR data in an XML structure. Any of these standards could be applied by a contractor to the LSA program; however, in Approving the approach to be used (by Approving the ISP) the Defence ILS team needs to ensure that:

a. Defence's operations and support needs, as detailed in the OCD and FPS, will be adequately addressed by the tailoring of the LSA program;

b. the data to be delivered meets Commonwealth needs for insight and governance, Verification, and assurance that the resultant Support System (including the Support Resources and processes) will be suitable;

c. information necessary to maintain and improve the Support System through-life will be delivered; and

d. any Technical Data to be transferred to Defence information systems (eg, MILIS) can be achieved at a reasonable cost.

LSA is not applied exclusively through clause 5.2. Mission System Supportability aspects are covered by Logistics Engineering and other Specialty Engineering clauses, while Supportability Test and Evaluation is included in the V&V clause.

Drafter's Action: Refer to guidance for subclauses.

Related Clauses: Nil

Further Reading: *ADO LSA Manual*

DMM (LOG) 04-0-001, *CASG Materiel Logistics Manual*, Chapter 3

5.2.1 LSA Program Management

Status: Core

Purpose: To require the Contractor to conduct the LSA program in accordance with the Approved ISP.

Policy: Refer to guidance for clause 5.2.

Guidance: LSA is the analysis component of ILS but due to the interrelated nature of the Materiel System aspects of LSA are undertaken through certain SE and V&V activities. Management of the LSA program is undertaken through the ILS program but must be coordinated across disciplines.

ASDEFCON templates are 'outcomes focused' where possible; hence, application of LSA only in accordance a pre-defined standard is not mandatory but any alternative would need to be suitable to be Approved by the Commonwealth, through Approval of the ISP. Suitable alternatives may be derived from the Contractor's internal processes and Contractor-specified standards, if tailored appropriately. For these reasons, the SOW does not specify particular LSA standards; however, the standards used need to be clearly defined in the ISP.

The ISP (defined by DID-ILS-MGT-ISP) is the governing plan for LSA and clause 6.2.3.3 in this DID requires the Contractor to define which LSA activities are to be conducted in accordance with agreed standards and how they will be tailored to the needs of the Contract. The tenderers' response to the ILS Strategy should refer to the LSA standards used and how standard processes will be modified to suit the

Contract. A sound ISP is critical to the ILS / LSA program and a final ISP may be developed from the tendered ILS Strategy prior to ED (eg, as pre-contract work).

Drafter's Action: Clause 5.2.1 is to be included in the RFT without alteration.

Related Clauses: TDR E-1.6, Integrated Logistic Support Strategy

Clause 5.1.2, ILS Program Management, requires an ISP and related plans.

Further Reading: Nil

5.2.2 Support System Definition

Status: Core

Purpose: To require the Contractor to undertake the system-level requirements analysis for the design of the Support System so that both parties can determine if the proposed Support System could achieve preparedness, LCC, and other program objectives.

Policy: Refer to guidance for clause 5.2.

Guidance: Refer to subclauses.

Drafter's Action: Refer to subclauses.

Related Clauses: Clause 4.2, System Definition

Clause 4.5, System Analysis, Design and Development

Further Reading: *DEF(AUST)5691* and *ADO LSA Manual* for 'Functional' LSA Activities.

5.2.2.1 Support System Requirements Validation

Status: Core (with optional subclauses)

Purpose: To require the Contractor to develop and Validate a Support System Specification (SSSPEC), with traceability to the OCD and FPS. This clause also establishes the SSSPEC as the basis for the Support System Functional Baseline (SSFBL).

Policy: Refer to guidance for clause 5.2.

Guidance: Clause 5.2.2.1.1 requires the Contractor to undertake requirements-validation, taking into consideration all of the inputs including the Commonwealth's OCD and FPS, and the other broad categories listed in the sub-clauses.

Clauses 5.2.2.1.2 requires development of the SSSPEC based on the preceding requirements-validation process. Requirements-validation for the Support System parallels the process for the Mission System in clause 4.2.2. Specifically clauses 4.2.2.3 and 4.2.2.4 contain additional requirements pertaining to requirements-validation for the Support System and Mission System as a whole, and to management of the SSSPEC. Drafters should be read the guidance for these SE clauses in conjunction with this guidance.

Inadequate requirements are a well-known cause of project failure; hence, requirements-validation is one of the most significant elements of the ILS/LSA process. It is intended to ensure that individual requirements and sets of requirements are valid and understood by all parties. Any new and modified requirements arising out of this activity could result in changes to the Contract, and the Commonwealth needs to review any proposed changes with diligence. Of note, there can be considerable benefit in conducting an initial requirements-validation, as a risk reduction activity, during an ODIA.

Clause 6.2.3.6 of DID-ILS-MGT-ISP requires the Contractor to detail its requirements-validation processes. Requirements-validation of the Mission System is conducted in accordance with the Contractor's SEMP. The Commonwealth ILS and SE staff should work closely to ensure that these plans present a viable and integrated requirements-validation program for the Materiel System as a whole.

The final separation of Mission System and Support System requirements may not be known until the design process has advanced. Commonwealth staff should ensure that the Contractor's processes for allocating requirements between the Mission System and the Support System (eg, from trade-off analysis) is enunciated clearly in both the SEMP and the ISP (or cross-referred between these plans).

As part of the requirements-validation process, the Contractor will also update the VCRM. The Commonwealth should ensure that the updated VCRM:

a. defines adequate Verification requirements for the Support System and Support System Components; and

b. does not compromise the ability of the Commonwealth to ensure that the Support System as a whole meets requirements (ie, by defining Verification requirements at too low a level in the specification hierarchy).

For further information on the function of the VCRM, refer to the V&V clause 7.1.

Clause 5.2.2.1.3 refers to the Materiel System 'states' detailed in the OCD to ensure that changes in Support System requirements for each state are addressed in the SSSPEC. If demands on the Support System do not change for different states, then this clause may not be required. When required, the Commonwealth should consider how the detailed requirements for each state should be captured in requirements documents and addressed as the Contractor's design processes (eg, the LSAR allows for two levels of operational tempo for report calculations). The operational tempo, maintenance policies, supply-support arrangements, turn-around times, and engineering policies may be different for each state. If many differing states apply the Commonwealth should consider the best way to specify these (eg, as annexes to the OCD or referenced out from the OCD).

Clause 5.2.2.1.4 requires the Contractor to raise a CCP to place the SSSPEC 'on contract' as the basis for the SSFBL. There is a parallel process for the Mission System's System Specification (SS); refer to clauses 4.2.4 and 4.2.5, for the SRR and SDR, and the checklists for these reviews. As per the note to drafters above clause 5.2.2.1.4, specifications are placed on-contract after SDR, once the system definition activities and the specifications have been finalised. Specifications incorporated into the Contract become the basis for their respective Functional Baselines and for further work under the Contract. Of note, the FPS remains on Contract after this CCP in order to maintain full traceability to the Commonwealth's requirements. Clause 4.2.2.4 details a process to action any conflict between the FPS and the SS / SSSPEC that may occur as the Contract progresses.

Clauses 5.2.2.1.5 and 5.2.2.1.6 highlight that the OCD and the SSSPEC are to remain in lockstep over the life of the Contract. This approach has been adopted because the OCD is a significant determinant of fitness for purpose during Support System Validation. Once again, a parallel process exists for the Mission System.

Some requirements in the SSSPEC may be established as targets, with minimum or maximum performance levels. Performance measures, such as spares availability and turn-around times, as requirements, should be derived from Mission System performance requirements, rates of effort, and the operating environment, and will be refined as the Contractor's design for the Mission System and Support System progresses. Where these performance measures are related to key performance measures for the Contract (Support), they need to be incorporated into the Contract (Support) at a suitable point in the process (generally before the 'operative date', being the commencement date for 'deliverable' support services).

Drafter's Action: Drafters are to ensure that the OCD adequately captures support concepts and that the OCD and FPS adequately address Supportability, use of Defence support infrastructure, and Support System constraints. If the OCD and FPS are not sufficiently detailed, then the project ILS team should determine whether a separate use study report / support concept document will need to be drafted and attached as an annex to the OCD.

Drafters need to determine the applicability of different states to the SSSPEC. If not required, clause 5.2.2.1.3 may be deleted.

Related Clauses: Clause 4.2.2, System Requirements Validation, addresses the requirements-validation processes for the Mission System.

Clause 4.2.4, System Requirements Review

Clause 4.2.5, System Definition Review

DID-ILS-DEF-SSSPEC defines the content requirements for the SSSPEC.

Further Reading: *DEF(AUST)5691* and *ADO LSA Manual* Activity SA2, Evaluation of Functional Requirements.

EIA-632 including Sections 4.3 and 4.5.2 and sub-elements of Annex C that clarify the relevant requirements (ie, Requirements 14, 15, 16, 19, 25, 26, 27 and 28).

5.2.2.2 Support System Logical Solution Representations

Status: Core

Purpose: To require the Contractor to develop Logical Solution Representations of the Support System to enable requirements analysis and Validation.

Policy: Refer to clause 5.2.

Guidance: The term 'Logical Solution Representations' has the meaning given by EIA-632. In general terms, a Logical Solution Representation is a representation of the solution in the logic domain, as opposed to the physical domain; flowcharts of a supply chain process, or the sequence of modules in a Training course, are examples. The Note within Requirement 17 of EIA-632 provides a number of approaches. Wherever possible, simple and readily-understandable approaches for defining the scope of particular elements of the support solution should be utilised.

The Note above Requirement 17 in EIA-632 provides insight into the purpose of Logical Solution Representations for the Support System, which is to assist with:

a. determining the validity of the requirements for the Support System (eg, in terms of feasibility and completeness);

b. identifying issues and risks associated with the requirements; and

c. determining whether or not the proposed solution for the Support System will likely result in the requirements being met.

Clauses 5.2.2.2.1 and 5.2.2.2.2 require the processes for defining Logical Solution Representations to be conducted in accordance with the Approved ISP. Clause 6.2.3.6 of DID-ILS-MGT-ISP explicitly requires the Contractor to detail its process for developing, documenting and Validating its Logical Solution Representations of the Support System. The Contractor undertakes a similar process for the developmental Mission System, in accordance with the SEMP. Contractor's ILS and SE staff should liaise with each other when reviewing the ISP and SEMP to ensure that a viable and integrated program is being planned.

As one of the main purposes of Logical Solution Representations is to identify issues and risks, a focus should be placed on those areas of the Support System where issues and risks are more likely. Interfaces are classic areas of risk and, for the Support System, higher-level interfaces are organisational (eg, between the Commonwealth, Contractor (Support) and Subcontractors (Support)). As such, these interfaces would be likely candidates for definition and documentation through Logical Solution Representations. Interfaces across key Constituent Capabilities (such as between Supply Support, Maintenance Support and Engineering Support) would be likely to benefit from this process, particularly when addressing such issues as supply chain management, asset visibility, Configuration Management, and design management.

Logical Solution Representations are also used to model the Support System and define parameters for LCCA, LORA and Spares-optimisation.

Drafter's Action: Clause 5.2.2.2 is to be included in the draft RFT without alteration.

Related Clauses: Clause 5.2.2.1, Support System Requirements Validation

Clause 5.2.2.3, Support System Analysis

Clause 5.2.5, Maintenance Support Design, for the maintenance-repair pipeline and LORA.

Clause 5.2.8.2, Spares, with respect to Spares-optimisation.

Further Reading: *EIA-632* including Sections 4.3.2 and 4.5.2 and the sub-elements of Annex C that clarify each of the relevant requirements (ie, Requirements 17 and 29).

5.2.2.3 Support System Analysis

Status: Core

Purpose: To require the Contractor to provide a design for the Support System as an optimised solution that achieves the SSFBL.

Policy: Refer to clause 5.2.

Guidance: Clause 5.2.2.3 requires the Contractor to develop a Support System description (a Support System 'design'). This begins with Logical Solution Representations (from clause 5.2.2.2) and an analysis of potential support alternatives and options in order to develop an optimised solution that best meets SSFBL requirements and program objectives (eg, for preparedness at minimised LCC).

A Support System is an interrelated set of significantly different products and processes, and Personnel with different skills, all interrelated by physical and organisational interfaces. Unlike many Mission Systems, the development of Support Systems is shaped not only by its required functions but also the relationships between organisations. Significant Commonwealth input is required to enable the Contractor to understand the implications of the various relationships when designing the Support System.

The Supportability-related design factors for the Mission System (eg, reliability, maintainability, deployability, parts standardisation, and accessibility) are important inputs to the design of the Support System. How well the Support System will respond to the needs of the Mission System, and the efficiency in the use of Support Resources, affects both preparedness and LCC. In some cases, a tradeoff between Mission System and Support System is required to investigate a Support System alternative (eg, reducing maintenance requirements by increasing in-built Mission System fault diagnostics). Accordingly, an analysis of the Support System must consider any impact on the Mission System and preparedness.

Support System alternatives analysed under clause 5.2.2.3 may include large segments of the Support System or individual Support System Components. For example, an alternative may be to analyse full Contractor support versus a baseline of only depot support by the Contractor, or the use of IETMs versus paper-based manuals, or environmentally controlled versus standard warehousing, or establishing in-country support versus a baseline of overseas Original Equipment Manufacturer (OEM) support. The Commonwealth will have considered some Support System alternatives when documenting support concepts in the OCD, and the requirements and constraints in the FPS. Nevertheless, the Contractor is still required to analyse particular Support System alternatives, relating to their proposed solution, during the system definition. For more details on analysis of Support System Alternatives refer to the *ADO LSA Manual* (Activities FL4-6).

Any Support System alternative needs to be evaluated against a baseline. The initial baseline would be the FPS / SSSPEC, which would be superseded by the agreed

solutions incorporating analysis recommendations. When necessary, the SSSPEC will need update to reflect the evolving design of the Support System.

Individual trade studies of Support System alternatives, when significant, should be described under the 'Trade Studies' section of the ISP (or detailed in an annex). When a Support System alternative is analysed the results should provide sufficient detail to justify any recommendation, including details of:

a. the study objective and its contribution to achieving program goals;

b. the analysis undertaken and any significant evaluations or tradeoffs;

c. the findings / results of the study; and

d. recommendations including changes to specified requirements (ie, requiring a CCP to change the SSSPEC at SOW Annex A).

Recommendations must address any impact on preparedness, LCC and any implementation issues for chosen alternatives. Clause 3.11 provides a standard methodology for contract changes that minimise LCC.

The format for a study report of Support System alternatives may be a simple presentation of findings at a review meeting, or for more extensive studies, a more detailed format as used for the Commonwealth-directed trade studies.

At the end of the Support System analysis phase (at SDR), the system-level design for the Support System should be relatively complete (noting that this design may evolve as the SSCCs are developed in greater detail). The outcomes of the Support System analysis should logically feed into the next phase of the detailed developmental processes for the Support System (see clauses 5.2.3 to 5.2.7).

Drafter's Action: Clause 5.2.2.3 is to be included in the draft RFT without alteration.

The drafter / ILS team need to determine if Commonwealth-directed trade studies for the Support System will be required. Commonwealth-directed trade studies might relate to improvements in technology, standardisation or restructuring the Support System (eg, allocation of functions to different organisations / bases). If Commonwealth-directed trade studies are required, annexes defining trade study requirements need to be drafted. Refer to guidance for clause 2.6 in this regard.

Drafters should review the delivery and action details for the SSDESC in the CDRL.

Related Clauses: Clause 2.6, Commonwealth-Directed Trade Studies

Clause 4.2, System Definition (for the Mission System)

Clause 4.6.3, Logistics Engineering, for when Mission System Supportability and Support System alternative options are traded off.

DID-ILS-DES-SSDESC defines the content requirements for the SSDESC.

Further Reading: DEF(AUST)5691, *Logistic Support Analysis*

ADO LSA Manual

EIA-632 *Processes for Engineering a System*

IEEE Std 1220-1998, *IEEE Standard for Application and Management of the Systems Engineering Process*

Support System Design

Detailed design of the physical Support System is a bottom-up process but, unlike a Mission System, many of the Support System 'building blocks' are based on people performing tasks and the Support Resources that they use. Accordingly, the Contractor is to perform task analyses to identify and document the tasks, Support Resources, procedures and Personnel Competencies to operate and support the Mission System and Support System Components (eg, support of support

equipment). For information on task analysis refer to DEF(AUST)5691 LSA Activity PL1.

The template includes five similarly constructed clauses, each aligned to a Support System Constituent Capability. Each of the five clauses seeks outputs from the LSA task analysis process, performed by the Contractor. The LSA process and standards to be used to perform task analysis are to be described in the ISP.

There are essentially four sets of outputs from the task analysis of each SSCC:

a. a list of identified tasks;

b. the Support Resources required to perform each task;

c. procedures for performing each task; and

d. the Personnel Competencies (skills) needed for each task.

These four sets of outputs are reported in four versions of the Task Analysis Report (TAR, defined by DID-ILS-DES-TAR) that, for operations, maintenance and supply tasks, may refer to an LSAR. The generic process is outlined in Figure 4.

Note that task analysis data is built up over time. For example, when the Task Analysis idenbtifies a new resource (eg, S&TE) that resource may also need support; and more tasks will be added to the Task Inventory, and so on.

Where the Materiel System includes existing components, for which operator and support tasks have already been analysed and documented, the Contractor needs to explain, in the ISP, how new and existing information will be integrated.

Following task analysis, whole-of-system Support Resource requirements are 'synthesised' by aggregating the requirements from all of the individual tasks. Task procedures that capture Support System processes are documented in Technical Data and the required Personnel Competencies are used to define performance needs / Training. Support System 'synthesis' is addressed under clause 5.2.8.

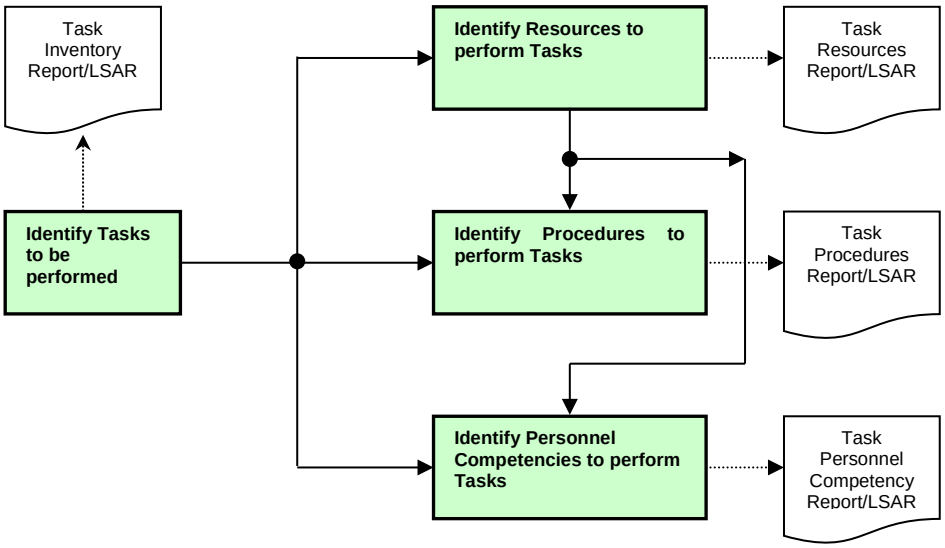


Figure 4 – Generic Task Analysis Process

5.2.3 Operating Support Design

Purpose: To require the Contractor to identify the tasks, Support Resources, procedures and Personnel Competencies to operate the Mission System in its intended roles.

Policy: Refer to clause 5.2.

Guidance: Clause 5.2.3, Operating Support Design, analyses the tasks to be performed to operate the Mission System in its intended roles. The clause requires the Contractor

to perform the task analysis for Operating Support (clause 5.2.3.1), deliver four TARs as shown in Figure 4 (clause 5.2.3.2), and (optionally) include the task data in an LSAR (clause 5.2.3.3).

Operating Support - Task Identification

The Contractor is to identify all tasks required to operate the Mission System, including direct support that enable operation, where there will be a need for any Support Resources, documented procedures, or Personal Competencies that create a Training requirement.

Operation of the Mission System may be enabled by 'external' services (eg, air traffic control services for aircraft). These are part of Operating Support but the need to analyse them depends on the situation (eg, Technical Data for an aircraft is required by air traffic controllers managing aircraft separation on the taxiway). Note that maintenance and supply services provided to the Mission System in an operational environment are still Maintenance Support and Supply Support respectively (see clauses 5.2.5 and 5.2.6), not Operating Support,

Task Identification is performed early in the Mission System design process to enable Mission System operability to be improved by design, such as which system functions are performed by an operator and which can be automated. Hence, there can be considerable interaction between task identification and Human Engineering activities under clause 4.6.4. To facilitate design improvements early, the task inventory for operating tasks should be completed before DDR, preferably by PDR.

The Task Inventory Report is described by option 1 in DID-ILS-DES-TAR. It can be a singular detailed delivery or a summary document that refers to the LSAR. If the Contract requires an LSAR, an optional clause enables the LSAR to be populated with the bulk of the information for the Task Inventory Report. The task inventory is recorded in the CA table of the LSAR and can be accessed via an ad hoc query or standard reports such as LSA-016 Part I, or by partial population of LSA-018.

The ISP should describe how task data for off-the shelf products (eg, existing operator manuals) will be included in the task-identification process. Sufficient task information will be required to enable the later calculation of Support Resource requirements spanning all tasks.

Operating Support - Task Resources

For each Operation / Operating Support task in the task inventory, the Contractor is to identify the Support Resources required. Support Resources include the operator performing the task, identified by skill and the estimated time to perform each step in the task. Other Support Resources can include fuel, electrical power, Technical Data such as user checklists and operational system data, data transfer devices, personal protection equipment and other Operating Support equipment, and Facilities. This activity requires tasks to be broken down into subtasks, with Support Resources allocated to each subtask for an estimated period of time.

Operator workload analyses may be undertaken as part of the Human Engineering program and resources for operational tasks (including operator time) should be identified prior to DDR (preferably PDR) to allow time to consider Mission System design changes that reduce workload and the need for other Support Resources.

The Task Resources Report is described by option 2 in DID-ILS-DES-TAR. The Task Resources Report can be delivered as a singular detailed delivery or a summary document that refers to an LSAR. If the Contract uses an LSAR, the optional clause requires the LSAR to be populated with Support Resource data.

The ISP should explain how Support Resources for off-the shelf products will be integrated into the preparation of Support Resource details for the current Contract (eg, if identified in existing user manuals). Support Resources will need to be calculated for the number of Mission Systems, rate of effort, and the conditions under which the systems are used by the ADF.

Operating Support - Task Procedures

Documented task procedures, for each of identified task, provide the source material for the development of operator Technical Data, including manuals (paper or IETMs), checklists, Training Materials, and so on. The purpose of reviewing these procedures is to avoid more expensive changes to completed and published documents later. Reviewing procedures should confirm that procedures are technically correct, written using terms with defined meanings and suited to the intended user. Reviewing task procedures can help to identify Support Resources or performance needs that were inadvertently omitted in the previous step.

There can be benefits if task procedures are reviewed jointly by the Commonwealth and Contractor. Even so, the Task Procedures Report should be delivered to the Commonwealth, with sufficient time for review, prior to the Task Analysis Requirements Review (TARR). On completion of the TARR, the development of manuals and Training Materials can commence with reduced risk of re-work.

The Task Procedures Report is described by option 3 in DID-ILS-DES-TAR. Like other deliveries of the TAR, the Task Procedures Report can be a single delivery or a summary document that refers to an LSAR. If the Contract uses an LSAR, the optional clause requires the LSAR to be populated with the task procedures. The procedures are recorded in the CC table of the LSAR. The Task Analysis Summary report, LSA-019, is designed for the review of task procedures.

The ISP should explain how existing task procedures (eg, user manuals) for off-the-shelf products will be integrated with the new Mission System procedures.

Operator / Operating Support - Personnel Competencies

Having identified task Support Resources (including Personnel) and procedures, the skillsets to perform each task can be determined. This information aids both workforce planning and the identification of tasks that require Training.

Skillsets and skill levels required to perform all tasks associated with Mission System operation assist in defining the operator workforce that the Commonwealth must plan for, including the recruitment and Training of those Personnel.

A comparison of existing skills and skill levels against those required for the new Mission System will help to identify a ‘performance gap’ and potential Training requirement. This is addressed under clause 5.2.7.

The Task Personnel Competency Report is described by option 4 in DID-ILS-DES-TAR. Like other deliveries of the TAR, the Task Personnel Competency Report can be a singular delivery or a summary document that refers to the LSAR. If the Contract requires an LSAR, the optional clause requires the LSAR to be populated with skills data to provide the bulk of the information for the Task Personnel Competency Report.

Both workforce structure and Training can require considerable planning by the Commonwealth. Task Personnel Competency Report data is contained in LSAR CA, CD, GB and GC tables. LSAR summary report LSA-001 identifies Personnel requirements for workforce planning. LSA-014, Training Task List, is designed to enable the review of tasks with identified Training requirements. The Training Task List / Task Personnel Competency Report can provide the task inventory required for a performance needs analysis, as required by DID-ILS-DES-PNAR.

Drafter’s Action: If an LSAR is not required under the Contract, drafters are to delete the optional LSAR clause. Other subclauses should be included in the RFT without alteration.

The project team should ensure that sufficient detail about the operation of the Mission System, in its intended roles, and applicable constraints (eg, must operate from existing facilities) are included in the OCD. This information is often supplemented by input from operators within the Resident Personnel (clause 3.17).

Drafters are to ensure that any edits to clauses 5.2.3, 5.2.8 and 5.3, for Operating Support and related Support Resources and Training, are coordinated.

If an LSAR is required, drafters must tailor DID-ILS-TDATA-LSAR for the required task analysis data, consistent with the data needed for each applicable MSR.

Drafters are to review the CDRL to ensure that Task Analysis Report deliveries reflect the requirements of the Contract, including Milestones.

Related Clauses: Clauses 5.2.4, 5.2.5, 5.2.6, and 5.2.7 set out the task analysis requirements for the other SSCCs as concurrent and interrelated activities.

Clause 4.6.4, Human Engineering

Clause 5.2.8, Support System Synthesis

MSR-CHECKLIST-TARR defines the entry, review and exit criteria for the Task Analysis Requirements Review.

DID-ILS-DES-TAR (Option 1), Task Inventory Report

DID-ILS-DES-TAR (Option 2), Task Resources Report

DID-ILS-DES-TAR (Option 3), Task Procedures Report

DID-ILS-DES-TAR (Option 4), Task Personnel Competency Report

DID-ILS-DES-PNAR defines content requirements for the PNAR.

DID-ILS-TDATA-LSAR defines the data requirements for populating the LSAR.

Further Reading: DEF(AUST)5691 *Logistic Support Analysis* (LSA Activity PL1)

ADO LSA Manual (LSA Activity PL1)

DEF(AUST)5692 *ADO Requirements for an LSAR*, regarding task inventory data and standard LSAR reports.

5.2.4 Engineering Support Design

Status: Core

Purpose: To require the Contractor to identify and document the tasks, Support Resources, procedures and Personnel Competencies needed to define the Engineering services to be provided in-service by Defence and support contractors.

Policy: Refer to clause 5.2.

DMI (ENG) 12-1-001 *Engineering Planning in Acquisition and Sustainment*

CASG QMS (E&T) 12-7 *Engineering Support in Sustainment*

DMSP (ENG) 12-8-061 *Software Problem Reporting and Resolution*

DEFLOGMAN Part 2 Volume 10 Chapter 4 *Defence Policy on Configuration Management*

Guidance: Engineering Support encompasses all people, processes and resources necessary to enable engineering and design management services to be competently provided throughout the life cycle of the system. Engineering Support includes any software support for the Mission System and Support System.

Clause 5.2.4, Engineering Support Design, requires the Contractor to perform a task analysis for Engineering Support (clause 5.2.4.1), deliver four TARs as shown in Figure 4 (clause 5.2.4.2), and develop a Software Support Plan to plan for Software support during sustainment (clause 5.2.4.3).

Engineering Support – Task Identification

The Contractor is required to identify the tasks (functions) involved in in-service engineering services for the Mission System and Support System Components.

Tasks / functions may be performed by the SPO and other Defence organisations, the Contractor (Support) and Subcontractors (Support). Depending on the system, functions may involve Configuration Management, developing and processing engineering and software changes and modifications, technical reviews and preparing special technical instructions, maintenance control, failure monitoring and

reporting, reliability and Supportability analyses, and other activities to ensure design integrity (eg, to ensure the safety and integrity of the Materiel System).

Many Engineering Support tasks apply across a wide scope of Materiel System hardware and Software, in contrast to Maintenance tasks that are analysed for specific components. Engineering Support tasks are more often functions that would be the basis of engineering plans and QMS procedures. As a result, an LSAR is generally not suited to documenting Engineering Support tasks but it may be useful for identifying Support Resources to be included in system-level Support Resource lists (eg, in order to include Engineering S&TE in the S&TEPL).

Engineering Support tasks have two major influencing factors. The first is the design of the Mission System and Support System Components, and resulting obligations to manage and maintain their design integrity. The second factor is Defence policy, including the application of regulatory / assurance requirements. The Contractor is in a position to analyse the factors associated with the design of the Mission System and Support System Components. The application of Defence regulatory / assurance requirements should be identified within the FPS; however, these often require additional Commonwealth input.

The Commonwealth Representative needs to review the inventory of tasks / functions to enable planning for the in-service management by the SPO and maintenance control organisations. The Contractor should identify the functions performed by a Contractor (Support) and the interfaces with the Commonwealth.

The Task Inventory Report is described by option 1 of DID-ILS-DES-TAR. As Engineering Support tasks are not aligned to individual system components, the task inventory is not normally required until prior to SSDDR, in sufficient time to allow review. The ISP should describe how Engineering Support will be analysed and integrated with existing Defence and contractor engineering capabilities.

Engineering Support – Task Resources

For each engineering task in the inventory, the Contractor is to identify the Support Resources required. In addition to Personnel, Support Resources may include Technical Data, Software applications and programming tools, special computing software / equipment (eg, that emulate parts of the Mission System), databases such as Configuration Management systems, Technical Data for hardware design, including drawing sets, and so on. The more complex Support Resources may include a major deliverable such as a Software Support Facility or integration and test facility, which would be listed in the Delivery Schedule at Attachment C.

Technical Data and Software used for Engineering Support resources will be often be subject to export controls and Intellectual Property restrictions that are identified in the TDSR Schedule.

The Task Resources Report is described by option 2 of DID-ILS-DES-TAR. The Commonwealth team, Defence stakeholders, and possibly the Contractor (Support), will need to review the identified Support Resources for early planning of in-service Engineering Support organisations.

If the S&TEPL is produced using LSAR source data, Engineering Support S&TE may be included in the LSAR in order to create a complete list. This is not identified in the template but the Contractor may use this or an alternative method.

Engineering Support – Task Procedures

Engineering Support procedures, for identified tasks, will include functions internal to Defence and procedures involving external parties such as the Contractor (Support), the Contractor (if not the Contractor (Support)) and OEMs of components. Procedures that are driven by Defence policy generally do not need to be detailed by the Contractor, other than to refer to existing Defence policy. The Contractor should document other procedures involving interfaces between the Commonwealth and external parties; for example, for defect investigations and processing of modification orders, where engineering input is required from OEMs.

The Task Procedures Report is defined by option 3 of DID-ILS-DES-TAR Delivery should enable sufficient time for Defence and Contractor (Support) organisations to prepare operating / quality management procedures prior to Transition and the handover of engineering responsibilities.

Engineering Support - Personnel Competencies

As a result of identifying task Support Resources (including Personnel), and procedures, skillsets and specialised Personnel Competencies can be identified; these may include managerial roles, specialty engineering disciplines, software programmers, reliability analysts, ILS, and other Competencies.

Identifying Personnel Competencies enables Defence and Contractor (Support) organisations to plan for and establish the Personnel needed for Engineering Support. To establish a workforce this information helps to identify the need for recruitment, relocation, and retraining of Personnel. For Training purposes, the information helps to identify internal Training requirements (ie, for baseline skills), as well as justification for the Training to be provided by the Contractor. In both cases (ie, workforce planning and Training), considerable Commonwealth planning may be needed; hence this information is required as a Deliverable.

The Task Personnel Competency Report is described by option 4 of DID-ILS-DES-TAR. Delivery should enable sufficient time for workforce planning and the establishment of positions, recruitment and Training, prior to the handover of engineering responsibilities. Due to the long lead-time to establish a workforce, initial planning is often required before the formal delivery of this report.

Software Support

Clause 5.2.4, requires the Contractor to prepare a Software Support Plan (defined by DID-ILS-SW-SWSP). The SWSP differs from most plans because it is used when the system is in-service, not under this Contract.

Software support can be a major cost driver and a strategy should be developed in the early phases of a project. This analysis should consider the anticipated size and scope of the Software, Software Supportability characteristics and Support Resources. The concept for Software support should be documented in the OCD (in the support concept), with details of scope (eg, for in-country support) and any performance requirements documented in the FPS. Software support for a Materiel System is a significant issue for the SE, ILS and software-development teams. The SWLIST delivered under clause 4.4.2 will provide information about the size and nature of Software (eg, new, re-used or modified) in the solution, some of which will be maintained in accordance with the SWSP.

A range of factors can affect Software Supportability, including the attributes of the Software and the environment within which the Software is used and supported. Some factors are not unique to Software and will be linked to system-level considerations. Factors can generally be categorised as:

- change traffic
- safety integrity
- expansion capability
- fleet size and disposition
- modularity
- size
- security
- skills
- standardisation
- technology
- tools and methods
- documentation
- platform independence

The above list is not exhaustive. For additional information refer to the *ADO LSA Manual* or DEF-STAN 00-60, which both discuss Software Support.

Note that the term 'Software maintenance' is used to distinguish on-going support from initial development. This can be misleading as 'maintenance' usually means restoring an item to an existing configuration; however, Software maintenance / support often requires a change in order to correct a defect and achieve the intended configuration baseline. As Software support requires design change it is included in Engineering Support rather than Maintenance Support.

Drafter's Action: Drafters are to ensure that adequate details of the applicable SPO, the Engineering Support concept and regulatory processes are included in the OCD and FPS.

Clause 5.2.4 may be included in the RFT without alteration (note that *ASDEFCON (Strategic Materiel)* is used for software-intensive system, hence the SWSP).

Drafters are to ensure that any editing of clauses 5.2.4, 5.2.8 and 5.3, for Engineering Support and related Support Resources and Training, are coordinated.

Drafters are to review the CDRL to ensure that Task Analysis Report deliveries reflect the requirements of the Contract, including Milestones.

Related Clauses: Clauses 5.2.4, 5.2.5, 5.2.6 and 5.2.7 set out the task analysis requirements for the other SSCCs as interrelated activities.

Clause 4.4.2, Software Development

Clause 4.6.4, Human Engineering

Clause 5.2.8, Support System Synthesis

MSR-CHECKLIST-TARR defines the entry, review and exit criteria for the Task Analysis Requirements Review.

DID-ILS-DES-TAR (Option 1), Task Inventory Report

DID-ILS-DES-TAR (Option 2), Task Resources Report

DID-ILS-DES-TAR (Option 3), Task Procedures Report

DID-ILS-DES-TAR (Option 4), Task Personnel Competencies Report

The Technical Data List defined in DID-ILS-TDATA-MTDI, identifies Technical Data to be delivered as Supplies - it is particularly relevant to Engineering Support as a lot of engineering data can originate from OEMs from outside the Contract.

DID-ILS-DES-PNAR (initial delivery) defines the requirements for a PNAR.

DID-ILS-SW-SWLIST defines the content requirements for the Software List.

DID-ILS-SW-SWSP defines the content requirements for the SWSP.

Further Reading: DEF(AUST)5691 *Logistic Support Analysis* LSA Activity PL1

ADO LSA Manual LSA Activity PL1

ADO LSA Manual Part 4 LSA for Software

5.2.5 Maintenance Support Design

Status: Core

Purpose: To require the Contractor to identify and document the tasks, Support Resources, procedures and Personnel Competencies needed to define the in-service Maintenance services to be provided by Defence and support contractors.

Policy: Refer to clause 5.2.

DEFLOGMAN Part 2, Volume 10, *Materiel Maintenance Policy*

DEFLOGMAN Part 2, Volume 10, Chapter 17, *Contingency Maintenance*

DEFLOGMAN Part 2, Volume 10, Chapter 19, *Calibration Policy for Defence Support and Test Equipment*

DMSP-1QMS (ENG) 12-7-003, *Maintenance Policy Determination, Promulgation and Management*

Guidance: Maintenance Support design follows the four-step process of task analysis to deliver the four TARs as shown in Figure 4, with four different submissions of the Task Analysis Report (as defined by DID-ILS-DES-TAR). Due to the varied types of Maintenance tasks the process also involves three additional outputs covering:

a. a list of Corrective Maintenance tasks;

b. a list of Preventive Maintenance tasks; and

c. the level of repair / location where Maintenance tasks are to be performed.

As a result, clause 5.2.5 is structured as follows:

a. clause 5.2.5.1 is a general requirement to analyse Maintenance;

b. clause 5.2.5.2 breaks down the task identification process into candidate item identification, the identification of Corrective Maintenance and Preventive Maintenance tasks, and Level of Repair Analysis (LORA);

c. clauses 5.2.5.3 to 5.2.5.5 support clause 5.2.5.2, identifying the analyses to be performed for the identification of Corrective Maintenance and Preventive Maintenance tasks, and for performing LORA, with cross-references to the Contractor plans used to define these analyses;

d. clause 5.2.5.6 requires the Contractor to define how existing Maintenance data (eg, for off-the-shelf components) will be integrated into the analyses;

e. clause 5.2.5.7 requires the Contractor to deliver seven different data items as outputs of Maintenance task analysis (four of those being TARs); and

f. clause 5.2.5.8 is an optional clause to be used when task analysis data will be delivered in an LSAR, supporting the data items under clause 5.2.5.7.

The synthesis of Support Resource requirements for Maintenance Support follows the above activities and is included in SOW clause 5.2.8. Drafters should note that there are interactions between clause 5.2.5 and clauses relating to human engineering (SOW clause 4.6.4) and reliability, maintainability and testability (SOW clause 4.6.2) and logistics engineering (SOW clause 4.6.3).

The review of Maintenance task data can require significant effort by specialists from the Contractor, Defence and Contractor (Support). To focus the Defence's review effort, attention should be placed on high-risk (eg, safety critical) areas.

The following discussion includes an overview of specific activities to be performed.

Corrective Maintenance Tasks

The normal process for identifying Maintenance tasks begins with Failure Mode Effects and Criticality Analysis (FMECA), conducted as part of the Reliability Engineering program in accordance with an appropriate standard and the Contractor's IRMTP (refer to clause 4.6.2).

For each Failure Mode (component or system failure, noting that an item can fail in a number of ways (ie, modes)) a Corrective Maintenance action can be identified. If *MIL-STD-1629A* is used, FMECA Maintainability Worksheets will list Maintenance tasks to rectify failures. The 'Effects' (often how a failure is detected) inform a 'Criticality' assessment and severe (eg, life-threatening) failures may be referred for redesign, or RCM analysis to determine if Preventive Maintenance can prevent the Failure Mode from ever occurring. Tasks that are not 'designed out' are identified in the task inventory and reported using the TAR (or reviewed within the LSAR).

FMECA results include additional information, such as task frequency (failures per 100,000 hours) and a preliminary allocation to a maintenance level resulting from a basic interpretation of the Maintenance concept. If the Contractor is using an LSAR, the identified tasks may be entered directly into the CA table task list with links to failure modes in the BF table. Maintenance level codes are included within the task

codes in Table CA. However, the assignment to a maintenance level may be changed later as a result of LORA.

Corrective Maintenance tasks need to be identified for Mission System and Support System Components. Although tasks for off-the-shelf components should be included in existing Maintenance manuals, these tasks (or summary tasks) need to be added to the task inventory to enable the later calculation of the total Support Resource and Personnel requirements.

The inventory of Corrective Maintenance tasks should enable the Commonwealth to Verify that the Mission System and Support System Components are maintainable under the Maintenance solution (described in the Support System Description); which considers the Defence operational and support environment in the OCD, The results should give the Commonwealth confidence that the Contractor has correctly applied the Maintenance concept during preliminary maintenance level allocations. The Commonwealth should also gain insight into the adequacy of Maintenance Facilities. The FMECA results and task inventory can also help to inform the Commonwealth Representative of specific areas (failure modes, frequency and tasks) to target during V&V activities.

FMECA results and the Corrective Maintenance task list for the Mission System should be delivered prior to the PDR. This enables the Mission System design to be assessed and modified, at minimal expense, if it is found to have unacceptable failure modes or Corrective Maintenance tasks that cannot be realistically achieved unless the system is modified (eg, to improve layout for accessibility – in conjunction with Human Engineering). This data should be updated and finalised by DDR. FMECA results and Corrective Maintenance tasks for new Support System Components (eg, S&TE and Training Equipment) should be finalised by SSDDR, or as otherwise necessary to achieve production and delivery schedules.

The Task Inventory Report is described by option 1 of DID-ILS-DES-TAR. It can be delivered as a large report or as a summary document that refers to an LSAR or other data source. Where the Contract requires an LSAR, the LSAR can be populated with the bulk of the detailed task information. The task inventory is recorded in the CA table and can be accessed via an ad hoc query or standard reports, such as LSA-016 Part I, or partial population of LSA-018. FMECA results can be reviewed using the FMECA Report (see DID-ILS-DES-FMECAR), which may also be a summary that refers to the LSAR and the LSA-056 FMECA Summary for review. DID-ILS-TDATA-LSAR should be tailored to enable data deliveries as required. The ISP should define the Contractor's approach to timing data deliveries for Mission System and Support System task inventories, and the approach to incorporating task data for off the shelf items.

Preventive Maintenance Tasks

For safety-critical failure modes it is often unacceptable to allow the failure to occur and, if the failure mode can't be removed by design, Preventive Maintenance may prevent the fault or deterioration from progressing to the point of failure. Preventive Maintenance also provides economic benefits; for example, it is less expensive to change the oil in an engine rather than wait for the engine to seize.

RCM is the process used for identifying Preventive Maintenance tasks. Different standards have been developed for different systems and include: *MIL-STD-2173, Reliability-Centered*[7] *Maintenance Requirements for Naval Aircraft, Weapon Systems and Support Equipment*; and *MIL-STD-1843, Maintenance Steering Group III Logic*. Other standards may be used, if agreed by the Commonwealth and defined by the Contractor in the ISP. An overview of RCM is also included in the *ADO LSA Manual*, Part 3.

In some circumstances, the standard to be used may need to be specified in the draft SOW by extending clause 5.2.5.4 (eg, regulatory requirements may require *MSG-3* in lieu of *MIL-STD-2173* or vice versa). Nevertheless, in keeping with the outcomes-

[7] US spelling as per title of military standard.

based approach of *ASDEFCON (Strategic Materiel),* the specification of standards should be avoided unless necessary.

RCM is used to identify different types of Preventive Maintenance tasks, define task intervals and 'package' the tasks into scheduled servicing activities. RCM may result in redesign recommendations, particularly if safety critical failures cannot be avoided by Preventive Maintenance. Preliminary maintenance level allocations are also identified but these may change following LORA modelling.

If the Contract requires an LSAR, RCM results are recorded in the BF and BG tables with links to the task inventory in the CA table via the failure modes in table BH (refer DID-ILS-TDATA-LSAR). Some LSARs (eg, MIL-STD-1388-2B) only record task intervals; however, DEF(AUST)5692 LSARs allow Preventive Maintenance tasks to be packaged into scheduled servicing activities.

Reasons for reviewing Preventive Maintenance tasks are similar to those for Corrective Maintenance (refer to preceding discussion). Preventive Maintenance such as depot servicing and full-cycle dockings, generally involve a Contractor (Support) and experts with this background should be involved in the review.

As RCM analysis must follow FMECA, the final results for the Mission System may not be available by PDR but should be completed before DDR. For new design Support System Components, RCM should be completed by SSDDR or as otherwise required for production and delivery schedules. Review of RCM and Preventive Maintenance tasks can take considerable effort and the Commonwealth should focus effort on high risk and safety critical areas. Corrective Maintenance and Preventive Maintenance tasks should be reviewed as a complete package before proceeding to LORA modelling.

The Task Inventory Report is described by option 1 in DID-ILS-DES-TAR. It can be a singular delivery or a summary document that refers to an LSAR. If the Contract requires an LSAR, the LSAR can be populated with the bulk of the task information and accessed via ad hoc queries or standard reports (refer Corrective Maintenance above). RCM analysis results can be reviewed via the LSA-050 RCM Summary or the RCM Analysis Report (in accordance with DID-ILS-DES-RCMAR). DID-ILS-TDATA-LSAR should be tailored to enable data deliveries as required. The ISP should define the Contractor's approach to RCM and the timing of data deliveries for the Mission System and Support System Components.

Maintenance Support - Resource Requirements

For each task identified in the task inventory the Contractor must identify the Support Resources for that task. Support Resources for Maintenance include Spares, Facilities, S&TE including tools and personal protective equipment, Technical Data, and the Maintenance Personnel identified by skill category and estimated time to perform each step in a task. This process requires most tasks to be broken down into subtasks and Support Resources identified for each subtask.

Support Resources also create cost elements for LORA; hence, the initial identification of Support Resources must be performed prior to the LORA activities. Following LORA, Support Resource requirements are aggregated to identify all resources for each Maintenance level and for recommended provisioning lists requested during Support System Synthesis under clause 5.2.8.

Support Resources for the Mission System at the unit / operational level of maintenance should be complete prior to DDR to allow for Mission System design changes, necessary to improve deployability and operational availability, to be considered (eg, to enable Support Resources to be carried on-board a ship). Support Resource information for all other Maintenance tasks should be completed by SSDDR to enable a thorough review of the Support System.

The Task Resources Report is described by option 2 of DID-ILS-DES-TAR. The Task Resources Report can be a singular delivery or a summary that refers to the LSAR. Where the Contract requires an LSAR it can be populated with the detailed

information for the Task Resources Report and be reviewed using a number of standard LSA summary reports.

When reviewing the Task Resources Report the Commonwealth Representative should consider:

a. standardisation of S&TE, including hand tools (eg, common versus custom);

b. requirements for unique equipment (eg, that need to be developed); and

c. use of existing ADF Support Resources.

Support Resource requirements provide the Commonwealth Representative and Contractor (Support) with information to assist in planning for Transition, including the requirements for Personnel.

The ISP should explain how Support Resources for off-the-shelf products will be integrated into the preparation of Support Resource details for the current Contract, (eg, if taken from existing Maintenance manuals). Total Support Resource requirements will need to be calculated for the number of Mission Systems, rate of effort, and the conditions under which the ADF systems are used.

Level of Repair Analysis for Maintenance Tasks

LORA involves the allocation of Maintenance tasks to Maintenance levels / locations and decisions to repair by 'discard and replacement'. LORA results in maintenance and repair policies for the Mission System, its components, and Support System Components such as complex S&TE and Training Equipment. LORA may also be referred to as Repair Level Analysis.

Note that MIL-STD-1390D, *Level of Repair Analysis* may be used for guidance but the models within this standard relate to specific US DoD organisational structures and are not necessarily suited to Defence. A brief summary of the LORA process is contained in the *ADO LSA Manual*, Part 3.

The Contractor should define, in the ISP, the LORA process to be applied, the assumptions, and the LORA model to be used. The resulting application should be described in the LORA Report (as defined in DID-ILS-DES-LORAR).

There are four main components to LORA:

a. non-economic LORA, using criteria set by Commonwealth requirements, policy and Maintenance concepts (eg, must be undertaken while deployed);

b. preliminary maintenance allocations, as an outcome of FMECA and RCM, usually defined with the aid of a flowchart based on non-economic criteria;

c. repair versus discard decisions, determined using both non-economic LORA criteria and LORA modelling software; and

d. economic LORA modelling, performed using LORA modelling software that is tailored to the complexity of the Mission System, its Support System maintenance and supply chain, and the available data.

The LORA Report enables the Commonwealth to review and confirm:

a. that specified requirements, policy and Defence maintenance concepts have been correctly applied to define the Maintenance for the Materiel System;

b. that Maintenance and repair policies will enable and comply with the Contract (Support)'s AIC requirements;

c. the LORA candidate items evaluated were consistent with the requirements for Preventive and Corrective Maintenance identified previously; and

d. that the Maintenance policies represent a minimised LCC outcome, while achieving required levels of Mission System preparedness.

LORA data can be provided with the LORA Report to enable the Commonwealth to conduct its own modelling to confirm recommendations. To enable this, the LORA

data set (if not included in the LSAR) needs to be defined in DID-ILS-DES-LORAR, or access provided to the Contractor's LORA tools.

To produce a cost-effective Maintenance solution, LORA models mathematically evaluate the collocation of tasks that require the same Support Resources, such as skilled Personnel. This can result in maintenance tasks that were initially allocated to one level of Maintenance being re-allocated to another (eg, to reduce the need for expensive S&TE or specialist Personnel). An effective LORA model considers the cost factors of many tasks at once. A simple model, using item-by-item calculations, cannot perform these kinds of trade-offs but may be adequate for simpler Maintenance concepts.

An output of LORA is the allocation of S&TE, Personnel (based on skills) and the range (not quantity) of Spares to Maintenance levels within Defence and Contractor (Support) organisations. If using an LSAR, LORA results can be used to update the preliminary maintenance allocations (which was embedded in the 'task code' assigned during FMECA and RCM). LORA results can be reviewed with the LSA-004 Maintenance Allocation Chart Summary and LSA-023 Maintenance Plan Summary. The allocation of Maintenance tasks allows for accurate Support Resource determination for each Maintenance level and Facility.

Maintenance Support - Task Procedures

Procedures are to be documented for all Maintenance tasks, which become the source material for developing Maintenance manuals (including IETMs) and some Training Materials. Reviewing task procedures should provide assurance that the procedures are technically correct, written using correct terms with defined meanings, and suit the trade skill and Competencies of the identified Maintenance Personnel, before formal authoring, document layout and publishing occurs.

Details of task procedures may be reviewed by the Commonwealth, in a joint Commonwealth and Contractor review or, if applicable, with relevant Contractor (Support) organisations. Review of task procedures is an entry criterion for the TARR. On completion of the TARR, the development of manuals and Training Materials can commence with reduced risk of re-work.

The Task Procedures Report is described by option 3 in DID-ILS-DES-TAR. It can either be a single delivery or a summary that refers to the LSAR. Procedures are added to the LSAR by population of the CC table. The Task Analysis Summary report, LSA-019, is designed for the review of task procedures.

The ISP should explain how existing Maintenance procedures, for off-the-shelf products, will be integrated into the preparation of procedures for the new Materiel System, while minimising the amount of rework necessary.

Maintenance Support - Personnel Competency Requirements

As a result of identifying task Support Resources (including Personnel by skill / trade), and procedures, the Personnel Competencies required to perform each Maintenance task need to be determined. This determination will aid in workforce planning and identify Personal Competencies that create a Training requirement.

When aggregated, the skills categories / types and experience levels required to perform all Maintenance tasks define the size and composition of the Maintenance workforce that the Commonwealth must plan for, including recruitment, relocations, and retraining of Personnel. Personnel requirements for the Contractor (Support) and Subcontractors (Support) may also be identified, which is particularly important for establishing in-country support of foreign-sourced equipment.

Comparing existing Defence Personnel Competencies against those for the new system will identify the 'performance gap' used when defining Training requirements (see clauses 5.2.7 and 5.3.4).

In both cases (ie, workforce planning and Training), the Commonwealth needs to convert 'raw' time-on-task Personnel data into requirements for a skilled workforce

that considers work shifts, supervision, and other non-time-on-task requirements (eg, maintenance record data entry and supply liaison).

The Task Personnel Competencies Report is described by option 4 in DID-ILS-DES-TAR. The report can either be a singular delivery or a summary that refers to the LSAR. The LSAR can be populated with the bulk of the detailed information for the Task Personnel Competency Report using the CD, GB, and GC tables. LSAR summary report LSA-001 identifies Personnel requirements for workforce planning purposes. LSA-014, Training Task List, is designed for the review of tasks with performance (Training) needs and can be used to satisfy the task inventory required by the performance needs analysis required by DID-ILS-DES-PNAR.

Drafter's Action: Drafters are to select or delete the optional clause for when an LSAR will be used to support the delivery of data items. All other subclauses are to be included in the RFT without alteration.

Drafters are to ensure that adequate details of the Maintenance Support concept, and any mandated processes and regulations, are included in the OCD.

If a RCM logic model is to be specified, due to regulatory / certification reasons, drafters should extend clause 5.2.5.4 to refer to the applicable standard.

Drafters are to select or delete the optional clause for when an LSAR will be used.

When an LSAR is required, drafters should tailor DID-ILS-TDATA-LSAR for the development and delivery of task analysis data, consistent with the MSRs.

Drafters are to ensure that any editing of clause 5.2.5 and clauses 5.2.8 and 5.3, for related Support Resources and Training are coordinated.

Drafters are to review the details in the CDRL for the required data items to ensure that these reflect the requirements of the Contract, including the Milestones.

Related Clauses: Annex A to the draft SOW incorporates the specifications.

Annex B to the draft SOW incorporates the OCD.

Clause 4.6.2 sets out the requirements for the IRMT program, including FMECA.

Clause 4.6.3 addresses logistics engineering.

Clause 4.6.4 addresses human engineering.

Clauses 5.2.4, 5.2.4, 5.2.6, and 5.2.7 set out the requirements for the definition of Operating Support, Engineering Support, Supply Support and Training Support, as concurrent and interrelated activities.

Clause 5.2.8 addresses the synthesis of the Support System.

Clause 5.3.3 addresses the implementation of Technical Data, including the LSAR.

MSR-CHECKLIST-TARR defines the entry, review and exit criteria for the Task Analysis Requirements Review.

DID-ILS-DES-FMECAR defines the requirements for the FMECA Report.

DID-ILS-DES-RCMAR defines the requirements for the RCM Analysis Report.

DID-ILS-DES-LORAR defines the requirements for the LORA Report.

DID-ILS-DES-TAR (Option 1), Task Inventory Report

DID-ILS-DES-TAR (Option 2), Task Resources Report

DID-ILS-DES-TAR (Option 3), Task Procedures Report

DID-ILS-DES-TAR (Option 4), Task Personnel Competencies Report

DID-ILS-DES-PNAR defines the requirements for training needs.

DID-ILS-TDATA-LSAR defines the requirements for the LSAR.

Further Reading: DEF(AUST)5691 *Logistic Support Analysis* (LSA Activities PL1 and PL2)

DEF(AUST)5692 *ADO Requirements for an LSAR*

ADO LSA Manual (LSA Activities PL1 and PL2)

MIL-STD-1390D *Level Of Repair Analysis*

MIL-STD-1629A *Procedures for Performing a Failure Mode, Effects and Criticality Analysis*

MIL-STD-2173 *Reliability Centered Maintenance*

MIL-STD-1390D *Level Of Repair Analysis*

5.2.6 Supply Support Design

Status: Core

Purpose: To require the Contractor to identify and document the requirements for Supply Support tasks, Support Resources, procedures and Personnel Competencies.

Policy: *Electronic Supply Chain Manual (ESCM)*

DEFLOGMAN Part 2 Volume 5 Chapter 10, *Disposal of Defence Assets*

DEFLOGMAN Part2 Volume 5 Chapter 12, *Supply Chain Management of Aeronautical Product*

Guidance: Supply Support design is derived through a process of task analysis to deliver the four TARs as shown in Figure 4, with four different submissions of the Task Analysis Report (defined by DID-ILS-DES-TAR), which may be supported by data in an LSAR.

Supply Support Design analyses the Supply Support tasks for Materiel System. Following task analysis, Support Resource requirements for each Supply Support task are aggregated into a set of system-level requirements through clause 5.2.8. Procedures are used to develop manuals and Training Materials, and identified Personnel requirements are used to define workforce and Training requirements.

Supply Support – Task Identification

This clause requires the Contractor to identify Defence and Contractor (Support) / Subcontractor (Support) Supply Support tasks. Supply Support tasks can include operational level support tasks, such as loading and unloading of stores for the Mission System, refuelling, and transportation to and from the area of operations. Non-operational Supply Support tasks include: providing Spares and consumables to repair venues; packaging; preparation for, and removal from, long-term storage; routine transportation and tracking of Spares demands; inventory-management; the purchase and supply of consumables, and the disposal of expended items.

Task identification performed early in the Mission System design may enable the Mission System Supportability to be improved. For example, changes in design may improve transportability of the system or major components, reduce stores loading and unloading times, or minimise parts Obsolescence issues. To enable design influence, the tasks for operational level Supply Support should be analysed before DDR, preferably PDR. Drafters should note the interactions with the SE clauses for Growth, Evolution and Obsolescence (clause 4.6.1); Logistics Engineering (clause 4.6.3); and Human Engineering (clause 4.6.4).

Commonwealth review of Supply Support tasks should consider interoperability and the use of Supply Support elements from the existing Defence infrastructure. Contractor (Support) and Joint Logistics Command organisations may be engaged to review relevant Supply Support tasks that they are likely to perform.

The Task Inventory Report is described by option 1 in DID-ILS-DES-TAR. It can be either a singular delivery or a summary that refers to the LSAR. Where the Contract requires an LSAR, the LSAR can be populated with the bulk of the detailed task information. The task inventory is recorded in the CA table and can be accessed via

an ad hoc query or standard reports, such as LSA-016 Part I, or partial population of LSA-018.

The ISP should explain how Supply Support tasks for off-the-shelf products (eg, materials handling tasks), which have been incorporated into existing manuals, will be integrated into task identification process.

Note that this Task Analysis activity does not normally include generic Supply Support tasks such a placing or retrieving an item from a warehouse shelf, inventory management or stocktaking, unless there are needs that are specific to the system or component (eg, unique procedures for packaging or transportation).

Supply Support – Support Resource Requirements

For each Supply Support task in the task inventory, the Contractor is to identify the Support Resource required, including all Facilities (eg, climate-controlled storage), Packaging (eg, containers and cushioning materials), Technical Data, materials handling equipment, and Personnel identified by skills and the estimated time to undertake each task. Operators, maintainers or specific Supply Support staff may perform various Supply Support tasks. This process requires each task be broken down into subtasks, with Support Resources allocated to the relevant subtask.

Support Resources for Supply Support tasks that affect the Mission System at the operational level should be analysed prior to DDR. This allows any Mission System design changes, to improve deployments and operational level support, to be considered. All other Supply Support tasks should be analysed by SSDDR.

The Task Resources Report is described by option 2 in DID-ILS-DES-TAR. It can be a singular delivery or a summary that refers to the LSAR. This optional LSAR clause is used to update the LSAR by linking Support Resources to subtasks.

When reviewing the Task Resources Report the Commonwealth should consider:

a. standardisation of materials handling equipment and other S&TE;

b. unique support equipment (eg, transport frames, moulded packaging); and

c. required use of existing ADF Support Resources.

Support Resource requirements provide the Commonwealth and the Contractor (Support) with information to assist in planning for Transition, including initial planning requirements for warehousing space and Personnel.

Supply Support – Task Procedures

Procedures are documented for applicable Supply Support tasks. These become the source material for manuals and some Training Materials. Reviewing task procedures should provide assurance that they are technically correct, written using correct terms with defined meanings and suit the skill and Competency levels of the Personnel, before formal authoring, document layout and publishing occurs.

Details of task procedures may be reviewed prior to the TARR by the Commonwealth, in a joint Commonwealth and Contractor review or, if applicable, involving the relevant Contractor (Support) organisations. On completion of the TARR, the development of manuals and Training Materials can commence with reduced risk of re-work.

The Task Procedures Report is described by option 3 in DID-ILS-DES-TAR. It can be either a singular delivery or a summary that refers to the LSAR. Procedures are added to the LSAR by population of the CC table. The Task Analysis Summary report, LSA-019, is designed for the review of task procedures.

The ISP should explain how existing procedures for off-the-shelf products will be integrated into the preparation of procedures for the new Materiel System, while minimising the amount of rework necessary.

Supply Support - Personnel Competency Requirements

As a result of identifying Support Resources for Supply Support (including Personnel), and procedures, the Personnel Competencies required to perform each Supply Support task need to be determined. This determination will aid in workforce planning and in identifying tasks that will create a need for Training.

When aggregated, the skill categories / types required to perform the Supply Support tasks will only define the size and composition of the specialist skills within the Supply Support workforce. The Commonwealth must also consider and plan for generic tasks that were not analysed (eg, stocktaking, receipting, data entry), before defining the total requirements for recruitment, relocations, and retraining of Personnel. Supply Support tasks may also influence the number of operator and Maintenance Personnel required for the (part time) Supply Support tasks, and Personnel requirements for the Contractor (Support) and Subcontractors (Support).

Comparing existing Defence skills against those required for the new system will identify the 'performance gap' used to define Training requirements (see clauses 5.2.7 and 5.3.4).

In both cases (ie, workforce planning and Training) considerable planning by the Commonwealth and Contractor (Support) may be required to develop the identified workforce.

The Task Personnel Competencies Report is described by option 4 in DID-ILS-DES-TAR. The report can be either a single delivery or a summary that refers to the LSAR. The LSAR can be populated with the bulk of the detailed information required using the CD, GB, and GC tables. LSAR summary report LSA-001 identifies Personnel requirements for workforce planning. LSA-014, Training Task List, is designed for the review of tasks with performance (Training) needs and can satisfy the task inventory required in the initial stages of the performance needs analysis, as required by DID-ILS-DES-PNAR.

Disposal Requirements

This clause requires the Contractor to develop, deliver and update a Disposal Plan (DISP) in accordance with the CDRL and DID-ILS-DES-DISP. Having the DISP infers the analysis of Supply Support 'Disposal' tasks during the task analysis. The DISP should span disposals during the operation and support of the Materiel System (eg, the disposal of non-repairable maintenance items) and the eventual withdrawal of Mission System and Support System Components at the end of their service lives. Disposal Analysis (refer DEF(AUST)5691) can also inform the development of this plan.

Although many items will be disposed of through 'routine means' the emphasis of the DISP is on items with 'special' disposal requirements, such Problematic Substances (eg, heavy metals and Ozone Depleting Substances), international controls regarding resale, having significant reclamation value, security constraints, safety issues, or other legislated constraints.

The DISP should consider pre-planned modifications and upgrade paths, whereby certain Mission System and Support System items will require disposal before the end of life of the system. In this regard, there is a link to clause 4.6.1 for the. Growth, Evolution and Obsolescence Program.

Drafter's Action: Drafters are to select or delete the optional clause for when an LSAR will be used to support the delivery of data items. All other subclauses may be included in the RFT without alteration.

Drafters are to ensure that any editing of this clause 5.2.6 and editing SOW clauses 5.2.8 and 5.3, related Support Resources and Training, are coordinated.

Drafters are to review the details in the CDRL for the required data items to ensure that these reflect the requirements of the Contract, including the Milestones.

Related Clauses: Annex A to the draft SOW incorporates the specifications.

Annex B to the draft SOW incorporates the OCD.

Clauses 5.2.4, 5.2.4, 5.2.5 and 5.2.7 set out the requirements for the definition of Operating Support, Engineering Support, Maintenance Support and Training Support, as concurrent and interrelated activities.

Clause 4.6.1, Growth, Evolution and Obsolescence Program

Clause 4.6.3 addresses logistics engineering.

Clause 4.6.6, System Safety, considers storage and disposal of Problematic Substances.

Clause 5.2.8 addresses the synthesis of the Support System.

Clause 5.3.3 addresses the implementation of Technical Data, including the LSAR.

DID-ILS-DES-TAR (Option 1), Task Inventory Report

DID-ILS-DES-TAR (Option 2), Task Resources Report

DID-ILS-DES-TAR (Option 3), Task Procedures Report

DID-ILS-DES-TAR (Option 4), Task Personnel Competencies Report

DID-ILS-DES-PNAR defines the requirements for a PNAR.

DID-ILS-DES-DISP defines the requirements for a Disposal Plan.

DID-PM-HSE-SDS defines requirements for documenting hazardous chemicals including special handling and disposal requirements.

DID-ILS-TDATA-LSAR defines the requirements for the LSAR database.

Further Reading: DEF(AUST)5691*, Logistic Support Analysis* (LSA Activities PL1 and PL6)

DEF(AUST)5692, *ADO Requirements for an LSAR*

ADO LSA Manual (LSA Activities PL1 and PL6)

5.2.7 Training Support Design

Status: Core

Purpose: To require the Contractor to analyse the need for Training for the operation and support of the Materiel System, and to define Training Support tasks, Support Resources, procedures and Personnel Competencies.

Policy: *Defence Learning Manual chapter 4: the Systems Approach to Defence Learning Practitioners' Guide* (SADL)

Guidance: Clause 5.2.7 involves designing the Training Support Constituent Capability as a system to provide Training programs in-service, which will follow on from any initial Training provided under the Contract and use the Training Materials and Training Equipment delivered as Supplies. However, the design of Training Support must also consider Training for people within the SSCC itself. Hence, clause 5.2.7 serves two functions: first, to scope the Training needed for the other SSCCs and, second, to identify and analyse the tasks involved in providing that Training, which is the task analysis for the Personnel who are part of the Training Support SSCC.

The analysis process used in the template is based on the SADL. The SADL recognises various forms of learning (eg, self-study, Training courses, etc); however, the Contract requires solutions that can be delivered through a Contract, hence the focus on formal Training.

There are five phases to the SADL process and the template clauses align to the five phases as follows:

a. **Analyse**: clauses 5.2.3 to 5.2.7, to identify and analyse performance needs;

b. **Design**: clause 5.2.8.4, to develop draft Learning Management Packages (LMPs) and system-level resource lists;

c. **Develop**: clause 5.3.4, to develop complete LMPs, Training Materials and Equipment;

d. **Implement**: clause 5.3.4, through the delivery and installation of Supplies for Training Support, and the delivery of initial Training courses; and

e. **Evaluate**: clause 7, V&V, particularly clause 7.2.4.5.

The SADL also describes internal processes and authorisations that are not transferrable to a contractor; hence the data items delivered under the Contract have similar scope to those in the SADL but without internal Defence requirements.

Performance Needs Analysis

Before 'designing' the Training Support SSCC, the Contractor needs to analyse the Personnel Competencies required for Operation, Engineering, Maintenance, and Supply Support of the Materiel System, to identify the performance needs that may be addressed by Training. This analysis uses the Task Personnel Competency Reports for the other four SSCCs as inputs, as illustrated in Figure 5.

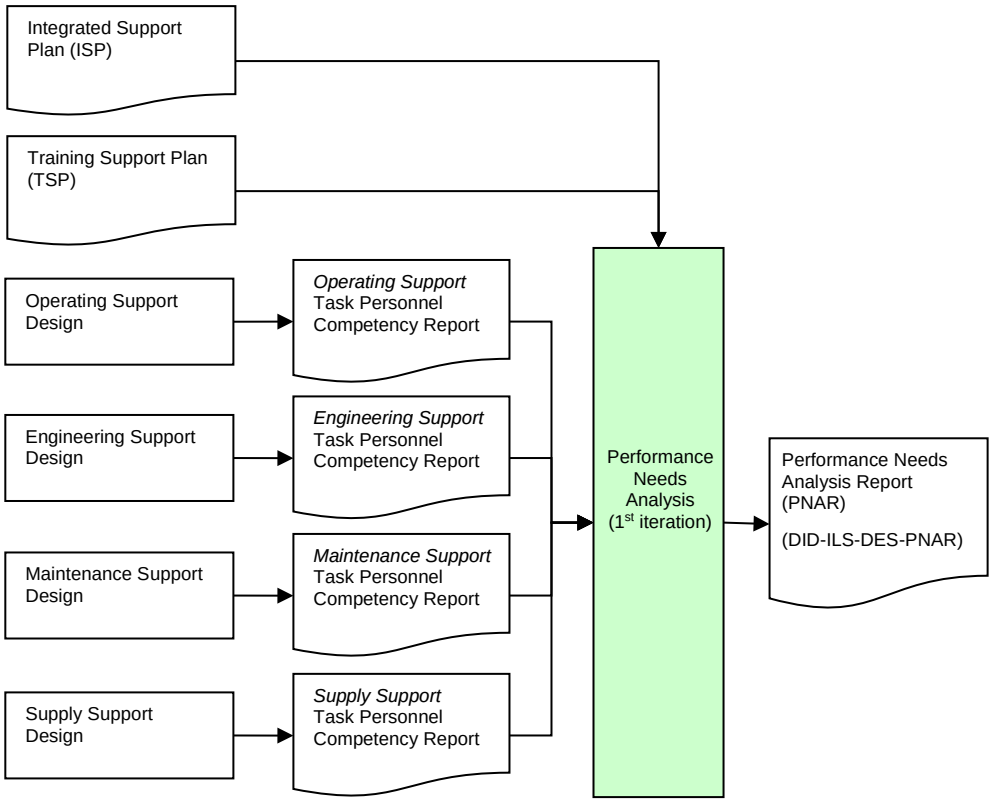


Figure 5: Performance Needs Analysis – first iteration

The output of this analysis is documented in a Performance Needs Analysis Report (PNAR) defined by DID-ILS-DES-PNAR. The analysis process follows the 'analyse phase' of the SADL. Hence, clause 5.2.7.1 references the SADL and drafters may also add service-specific references. When adding references, drafters need to identify the parts of that reference that apply in the 'analyse' phase, and which are appropriate for a contract (eg, excluding Defence's internal authorisations).

To help scope the performance needs analysis (ie, the gap between current and required Personnel Competencies) clause 5.2.7.2 identifies a range of Training situations / types – this list should be updated to match those documented in the Training Concept in the OCD. The Training types and their defined terms in the Glossary may be amended to suit. This clause also emphasizes that the scope of Training goes beyond the initial Training delivered by the Contractor (clause 5.3.4).

The SADL defines eight different documents used in the process to analyse a single course (ie, not a PNAR). However, under a contract the Commonwealth review cycle

times for all of these documents would be impractical (delaying the Contractor's Training development schedule), hence the PNAR (defined by DID-ILS-DES-PNAR) combines the following SADL documents:

a. Job Task Profiles,

b. Job Specifications,

c. Target Population Profiles,

d. Gap Analysis Statements,

e. Feasibility Analysis Reports,

f. Support Resource Business Cases,

g. Risk Assessments,

h. Recommendations; and

i. details of existing Training courses and Units of Competency.

Additionally, the SADL describes a process for a single course, whereas the PNAR is structured, with annexes, to include all courses for all jobs / skill categories for the new Materiel System. The PNAR is delivered under clause 5.2.7.3.

Prior to the tender, the Commonwealth may develop a draft Training Requirements Specification (TRS) for each anticipated job / job family, which may appear as a Contract specification or a set of requirements within the FPS. If required by the Contract, the TRSs will be further developed by the Contractor from the performance needs analysis. The content required for a TRS is defined in DID-ILS-DEF-TRS; and is similar to that required by the SADL but without internal Commonwealth information. The TRS is not essential for every contract but provides a consolidated set of requirements for later use in V&V activities.

When the TSR is required (clause 5.2.7.4), drafts are reviewed for SSDDR. Final versions may be added to the Contract Specifications (SOW Annex A) as part of the SSFBL, usually after review at TARR (clause 5.2.7.5). Drafters should review the CDRL and consider when TRSs are required.

Having completed an initial performance needs analysis for the other SSCCs, task analysis for Training Support is required by clause 5.2.7.6 with the outputs delivered as data items under clause 5.2.7.7, as described below.

Training Support - Task Identification

As shown in Figure 6, tasks required to be performed by Personnel in the Training Support SSCC can only be identified after the performance needs and scope of Training for other SSCCs have been defined.

Training Support tasks include preparation of materials for each course, set-up and pull-down of Training aids, operation of Training aids / devices, panelling and management of students, tutoring, managing student progress through CBT, preparation of assessment (examination) materials, reporting, the revision and upkeep of Training materials, and so on. The identified Training Support tasks are delivered in the Task Inventory Report, which is described by option 1 in DID-ILS-DES-TAR. Figure 6 illustrates this process.

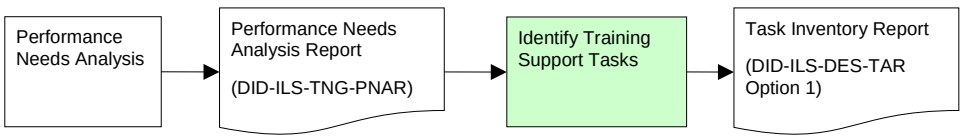


Figure 6: Training Support Design - Task Identification

As Training is delivered to Personnel and is not as 'on-equipment' tasks, these tasks are not recorded within the LSAR.

Note that Personnel Competencies for Training Personnel are identified as a result of analysing Training tasks. Where these Personnel Competencies require Training (eg, Train-the-Trainer Training) a PNAR update is required, followed by an update to the task inventory (the tasks to train Training Personnel). This causes a second iteration of the performance needs analysis – task analysis process.

Training Support - Resource Requirements

Support Resources for Training Support include those required to deliver Training, as identified in the Approved PNAR and, subsequently, in LMPs. These Support Resources can include instructors, Training Materials, Facilities, computer support and Training Equipment. In addition, Support Resources identified under this clause will include Support Resources needed to produce course materials, develop updates to Training Materials and operate systems used to manage students. For example, a personal computer may be identified for Training delivery in the PNAR, but the computer system for course authoring would be identified as an additional Support Resource from the task analysis process.

The Training Support Resources Report is described by option 2 in DID-ILS-DES-TAR, as shown in Figure 7. Through the synthesis processes for Training Support (refer clause 5.2.8.4), Support Resources will be combined into a Training Equipment List (TEL) and Training Materials List.

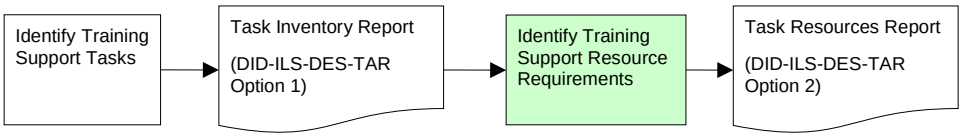


Figure 7: Training Support Design - Resource Identification

To produce complete lists of Support Resources from an LSAR, Contractors may add Training Equipment (which often includes items also identified as S&TE) against generic Training tasks.

Training Support – Task Procedures

Training Support Procedures are procedures required to conduct identified Training Support tasks, which are not limited to Training delivery. For example, Training Support task procedures may include the method for compiling CBT packages or the approval process for Training Material updates. The Training Support Procedures Report is defined by option 3 in DID-ILS-DES-TAR, as illustrated in Figure 8.

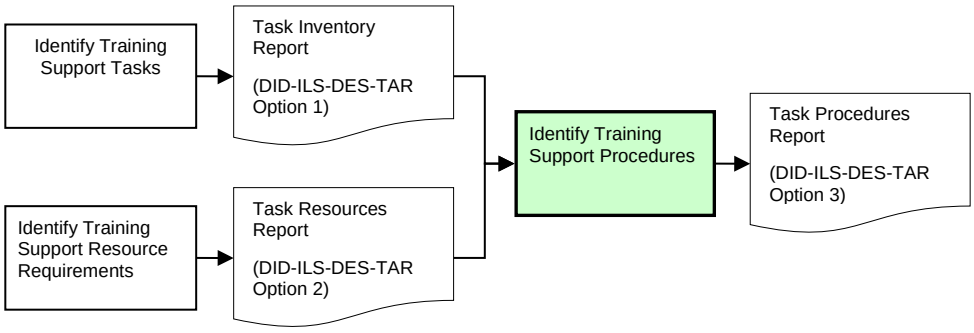


Figure 8: Training Support Design - Procedure Definition

Training Support - Personnel Competency Requirements

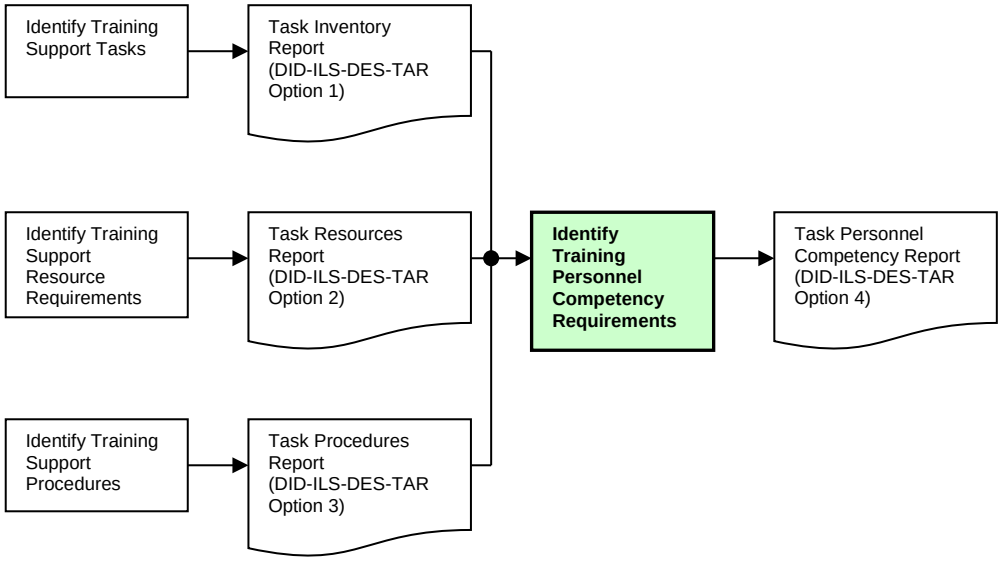
Training procedures will subsequently be documented in manuals or an in-service QMS. Procedures are often required to comply with requirements defined by the SADL and the service-specific Training manuals listed under clause 5.2.7.1.

Training Support Personnel Competencies are the Personnel Competency requirements for Training Personnel, required to conduct the identified Training Support tasks, as illustrated in Figure 9.

Following the identification of Training Support tasks, Support Resources and procedures, the Personnel Competencies required to perform each task, using the Support Resources and procedures, are determined.

The Task Personnel Competencies Report is described by option 4 in DID-ILS-DES-TAR. The determination of Personnel Competencies and the report will aid in workforce planning and in identifying those tasks that will require an element of Training (ie, the Training of Training Personnel).

Figure 9: Training Support Design - Personnel Competency Requirements



As noted above, the identification of Personnel Competencies needed for Training Personnel are fed back into the performance needs analysis and task analysis in order to identify the performance needs and tasks to train Training Personnel.

The overall Training system is considered at the SSDDR and the TARR addresses Training Support tasks. However, some project teams have also found it beneficial to add a Performance / Training Needs Review, or similar, to the Contract's MSRs.

Drafter's Action: Drafters are to ensure that Training program requirements and constraints are captured in the OCD and FPS (possibly including draft TRSs), particularly if Training is to add to existing programs or use established Support Resources.

Drafters are to identify service-specific Training manuals to be referenced in clause 5.2.7.1.

Drafters are to ensure that the appropriate types of Training are listed under clause 5.2.7.2 and that the definitions in the Glossary are suitable.

Drafters are to determine if TRSs will be required and include clauses 5.2.7.4 and 5.2.7.5, or delete and replace them with 'Not used', as appropriate.

All other subclauses may be included in the draft RFT without alteration.

Drafters are to ensure that any editing of clause 5.2.7 is consistent with clauses 5.2.8 and 5.3, for Support Resources and the initial delivery of Training.

Drafters are to review the details in the CDRL to ensure that they reflect the requirements of the Contract, including Milestones.

Related Clauses: Clauses 5.2.3, 5.2.4, 5.2.5 and 5.2.6 identify the Personnel Competencies for the Operating Support, Engineering Support, Maintenance Support and Supply Support SSCCs, from which Training requirements may be derived.

Clause 5.2.8.4 requires the Contractor to optimise the Training Support Resources.

Clause 5.3.4 requires the Contractor to implement the Training Support solution, including the delivery of initial Training under the Contract.

DID-ILS-DEF-TRS identifies the content requirements for a TRS.

DID-ILS-DES-TAR (Option 1), Task Inventory Report

DID-ILS-DES-TAR (Option 2), Task Resources Report

DID-ILS-DES-TAR (Option 3), Task Procedures Report

DID-ILS-DES-TAR (Option 4), Task Personnel Competencies Report

DID-ILS-DES-PNAR defines requirements for a PNAR.

DID-ILS-TNG-TSP defines requirements for the Training Support Plan.

MSR-CHECKLIST-SSDDR includes entry, review and exit criteria for the SSDDR.

MSR-CHECKLIST-TARR includes entry, review and exit criteria for the TARR.

Further Reading: DEF(AUST)5691 *Logistic Support Analysis* (LSA Activities PL1 and PL3)

ADO LSA Manual (LSA Activities PL1 and PL3)

The Defence Learning Manual Chapter 4: *SADL*

ABR 27 *RAN Training Policy Manual*

Army Training Instruction (ATI) 1-9 *Developing Training for New Capabilities*

AAP 2002.001 *Manual of Training – Policy and Procedures*

5.2.8 Support System Synthesis

Status: Core

Purpose: To require the Contractor to synthesise, from the task requirements documented as outputs of clauses 5.2.3 to 5.2.7, complete and optimised lists of Support Resources for the new system – the Support Resources 'package'.

Policy: DEFLOGMAN Part 2, Volume 10, Chapter 15 *Supportability Analysis*

Guidance: Support System 'synthesis' involves aggregating the Support Resource requirements identified for each task analysed for the SSCCs and optimising these to develop system-level Support Resource requirements lists. Similarly, task procedures are compiled into publications. Training, as a service rather than a Support Resource, is also optimised in terms of courses and locations, etc. The resulting solutions are documented in a number of Contract deliverables.

The Support Resources and Training involved in the 'synthesis' of a system-level Support Resources package and Training programs include:

a. Spares;

b. Packaging;

c. Training, Training Equipment and Training Materials;

d. Technical Data;

e. Support and Test Equipment (S&TE);

f. Facilities (Optional); and

g. Personnel.

Drafter's Action: Refer to subclauses.

Related Clauses: Clauses 5.2.3 to 5.2.7 provide the individual task-based inputs for the synthesis of a system-level resources package.

Clause 5.3 involves the delivery and/or implementation of the resources package defined under this clause.

Further Reading: DEF(AUST) 5691 and *ADO LSA Manual, Physical LSA Activities*

5.2.8.1 General

Status: Core

Purpose: To state the objectives to be achieved Support System synthesis

Policy: Refer to clause 5.2.8.

Guidance: Consistent with the goals of ILS, the clause identifies the Commonwealth's needs for an optimised Support System solution, namely that the solution is minimised in terms of LCC while meeting the performance requirements (eg, specifications) of the Mission System and Support System when used and supported in the intended environment (ie, as defined in the OCD).

In the context of the following discussion, the term 'optimisation' refers to using a model that accurately describes a given system and which can be used, through sensitivity analysis, to determine the best operation of the system being modelled. In general, the optimisation process is bound by the 'goals' in clause 5.2.8.1.

Drafter's Action: Clause 5.2.8.1 is to be included in the RFT without alteration.

Related Clauses: Subclauses under clause 5.2.8.

Further Reading: Nil

5.2.8.2 Spares

Status: Core

Purpose: To obligate the Contractor to define an optimal range and quantity of Spares for the Mission System and Support System Components.

Policy: Refer to guidance for clause 5.2.8.

DEFLOGMAN Part 2 Volume 5 Chapter 3, *Australian Defence Force Requirements Determination and Management of Reserve Stocks*

DEFLOGMAN Part 2 Volume 5 Chapter 12, *Supply Chain Management of Aeronautical Product*

DEFLOGMAN Part 3, *Electronic Supply Chain Manual (ESCM)*

Guidance: Clause 5.2.8.2 requires the Contractor to undertake a *deliberate* process of analysing and optimising the required range and quantity of Spares. Spares that are Repairable Items (RIs) are identified for Maintenance Support; however, consumable items may also be identified for the other SSCCs. The requirement is to optimise the totality of all of the Spares required across all of the SSCCs.

Management of the spares optimisation process may be described in the Approved ISP or Approved SSDP. Plan selection is based on complexity; planning within the ISP would suit a simpler supply chain, whereas a stand-alone SSDP is suited to managing processes for more complex scenarios and multiple supply chain. Both plans should identify Commonwealth involvement (eg, screening against existing Spares holdings). Based on clause 5.1.2.1, drafters are to insert SSDP or ISP into the clauses as applicable.

The standard Spares-optimisation model used in Defence is OPUS 10, a 'multi-indenture, multi-echelon' software model (it optimises Spares for many items at different levels of the breakdown structure, for multiple levels of repair). Omega PS Analyser, which interfaces directly with the LSAR, is another model. These models use reliability, rate of effort and supply chain information to predict Spares use – this contrasts to in-service models that depend on historical usage rates. Clause

5.2.8.2.2 specifies the software package preferred by the Commonwealth; however, if a tenderer offers an alternative model, advice should be sought from the relevant SME regarding its use. Generally, spreadsheet-based Spares models use simple algorithms that cannot adequately model support concepts or trade off the total Spares cost versus Mission System availability.

As per DID-ILS-SUP-RSPL, the Spares-optimisation model must accord to the design of the Mission System, the support concept in the OCD, and the Contractor's Support System design. The model should be consistent with other models used by the Contractor (eg, the LORA model). The output of Spares-optimisation is the RSPL. The Commonwealth Representative should be confident that the Spares-optimisation model is valid before Approving the RSPL.

The support concept has significant influence over the Spares to be acquired. For example, if the Contractor (Support) will own Spares, the scope of the RSPL will be reduced, with the cost of Spares transferred to the Contract (Support).

The RSPL, delivered under clause 5.2.8.2.4, provides all the information required for provisioning Spares in addition to any Spares that were Approved as LLTIs. The Contractor is required, under clause 5.1.2.6, to hold a Spares Provisioning Preparedness Review (SPPR) to enable joint review of the RSPL and the Spares-optimisation model. Following SPPR and Approval of the RSPL, the Contractor is required under clause 5.3.2 to provide the Spares identified in the Approved RSPL.

The price for Spares is not included in the initial Contract Price but is subject to a NTE price (refer TDR D-2) for all Spares required by the Commonwealth to achieve the SSFBL (however, the Commonwealth may decide to acquire additional Spares in accordance with clause 5.3.2.1). After Approval of the RSPL and agreement on the overall price to be paid for the Spares, the Contractor is to include the RSPL in the Delivery Schedule (Attachment C) via the CCP under clause 5.2.8.2.5.

Drafter's Action: Drafters are to insert the applicable plan (SSDP or ISP) where indicated and, if required, amend Commonwealth-preferred Spares-optimisation software package.

All other subclauses are to be included in the RFT without alteration.

Related Clauses: Clause 5.1.2.1, if an SSDP is required under the Contract.

Clause 5.1.2.6 requires the conduct of the SPPR.

MSR-CHECKLIST-SPPR details the entry, review and exit criteria for the SPPR.

DID-ILS-SUP-RSPL defines the requirements for the RSPL.

Clause 5.2.5, Maintenance Support Design, applies task analysis and LORA (as an inter-related model) as the initial means of identifying the required Spares.

Clause 5.3.2 requires implementation (including delivery) of the Spares.

COT Attachment A, Annex D, for NTE pricing of Spares.

COT Attachment A, Annex F requires a draft RSPL to inform the tendered NTE price.

Further Reading: See clause 5.2.8.

5.2.8.3 Packaging

Status: Core

Purpose: To require the Contractor to go through a *deliberate* process of analysing the range and quantity of Packaging to be acquired.

Policy: WHS Legislation

DEF(AUST)1000C, *ADF Packaging Standard*

DEFLOGMAN, Part 2 Volume 8 Chapter 6 *Defence packaging compliance policy to support deployment overseas and for redeployment to Australia*

Guidance: Clause 5.2.8.3 requires the Contractor to identify and optimise Packaging requirements for any special-to-type, reusable or high-cost Packaging that will be included in the Packaging Provisioning List (PACKPL), prepared in accordance with DID-ILS-SUP-PACKPL. In this case, Packaging is a Support Resource to be used in-service, which is different to general Packaging used for initial delivery of Supplies (clause 2.2); however, some specialised Packaging will be used for both the initial delivery and subsequently in-service.

Clause 5.2.8.3.1 includes an explanation of the types of Packaging required as a Support Resource. The support concept and/or the requirements in the FPS should establish that certain Supplies (eg, Spares and S&TE) need to be transported, and the Contractor may identify that these items require specific Packaging in-service. Under this scenario, the Packaging itself becomes a Supply.

There is no optimisation model specified for Packaging. Packaging requirements are related to transportation between levels of repair (as an outcome of LORA), for deployments, storage environments (eg, the availability of climate controlled storage) and legal / policy reasons (eg, Dangerous Goods). The design of the Supply Support SSCC should consider the movement of Spares, stores / munitions, Dangerous Goods and other items, by analysing Supply Support tasks.

The Contractor is expected to describe in the SSDP or ISP, as applicable, how Packaging requirements would be derived and optimised. DID-ILS-SUP-PACKPL requires the Contractor to justify the Packaging recommended in the PACKPL.

The PACKPL delivered under clause 5.2.8.3.2 provides the information required for provisioning Packaging, in addition to any Packaging Approved as LLTIs. Packaging requirements are discussed at the SPPR and the Contractor is required, under clause 5.3.2.2, to provide the Packaging from the Approved PACKPL.

Note that the price for Packaging is included in the Contract Price. If a different arrangement is considered such as an NTE price (similar to the arrangement for Spares), then TDR D (Financial) and TDR F (System Solution) would need to be modified. Unless Packaging is considered to be a high-cost or high-risk item, a different arrangement is not recommended. Clause 5.2.8.3.3 requires the Approved PACKPL to be incorporated (ie, by reference) into Attachment C, as part of a complete set of Supplies to be delivered under the Contract.

Advice on specialist Packaging can be obtained from the Packaging Development Cell, Land Engineering Agency.

Drafter's Action: Drafters are to identify the applicable plan in clause 5.2.8.3.1, otherwise clause 5.2.8.3 is to be included in the RFT without alteration.

Drafter's need to ensure that relevant details for transportation and storage are included in the support concept or supporting information.

COT, Annex F to Attachment A does not require a draft PACKPL. If the drafter expects high value specialised Packaging (eg, all-up round containers for missiles) then an additional tender requirement, similar to the draft RSPL, could be added.

Related Clauses: Clause 5.1.2.6 requires the conduct of the SPPR.

MSR-CHECKLIST-SPPR details the entry, review and exit criteria for the SPPR (which includes a review of Packaging requirements).

DID-ILS-SUP-PACKPL defines the requirements for the PACKPL.

Clause 5.2.6 addresses task analysis for Supply Support, including tasks that use specialised Packaging.

Clause 5.3.2 requires the implementation of Packaging as a Support Resource.

Further Reading: See clause 5.2.8

5.2.8.4 Training

Status: Core

Purpose: To require the Contractor to design and develop a Training solution through a *deliberate* process of analysing the performance needs of personnel to define the Training requirements, and resources such as Training Equipment and materials.

Policy: *SADL*

Guidance: Training courses need to be designed (then developed and implemented under clause 5.2.8.4) to impart the required skills and knowledge to the Personnel involved in the operation and support of the Materiel System. In addition to the 'design phase' described in the SADL, the design process should be consistent with any single-service Training manual identified in clause 5.2.8.4.1. Training requirements are identified in the Approved PNAR and, if included in the Contract, TRSs (clause 5.2.7).

In accordance with clause 5.2.8.4.2, the Contractor is to identify potential areas of optimisation considering the various courses, Training Equipment and Training Materials. The Contractor is to describe, in the Approved TSP or Approved ISP if applicable, the process by which Training and Support Resources would be rationalised / optimised, including standardisation and offsetting with Training Equipment already in-service. The results of optimisation should be reflected in the structure of courses and the Support Resources in the Training Equipment List (TEL) and Training Materials List (TML), discussed below.

Under clause 5.2.8.4.3, the Contractor is to develop draft Learning Management Packages (LMPs) for each course proposed in the PNAR. The content of an LMP is defined in DID-ILS-TNG-LMP. DID-ILS-TNG-LMP specifies differing requirements for a draft LMP and the final LMP. A draft LMP captures the results of the SADL 'design' phase for a course and the final LMP captures the results of the 'develop' phase, including Training Materials. Note that the SADL includes an LMP template with Commonwealth information that is not applicable to a contract and not included in this DID.

The Contractor is to provide consolidated and optimised lists for the types and quantities of Training Equipment and Training Materials for all Training courses. Training Materials are listed in the TML, a sub-list of the MTDI, defined by DID-ILS-TDATA-MTDI. The Training Equipment List (TEL) is defined by DID-ILS-TNG-TEL and is to justify the range and quantity of Training Equipment that the Contractor recommends to be acquired (in addition to any Training Equipment acquired as LLTIs). The TML and TEL are delivered under clauses 5.2.8.4.4 and 5.2.8.4.5,

The Contractor is required under clause 5.1.2.8 to hold a TEPPR to enable joint review of the TEL. Following the TEPPR, the Contractor is required, under clause 5.3.4, to provide the Training Equipment identified in the Approved TEL.

Note that the price for Training Equipment is not included in the initial Contract Price but subject to an NTE price (refer TDR D-2) for all Training Equipment required by the Commonwealth to achieve the SSFBL (the Commonwealth may acquire additional Training Equipment in accordance with clause 5.3.4). After Approval of the TEL and agreement on the overall price to be paid for Training Equipment, the Contractor will be required to include the TEL in the Delivery Schedule at Attachment C (ie, by reference) and include the price of the Training Equipment in the Contract via the CCP at clause 5.2.8.4.6.

Drafter's Action: Drafters are to insert TDP or ISP where indicated and, if required, include reference to any individual Service manuals for Training design, as per the note to drafters. All other subclauses are to be included in the RFT without alteration.

Related Clauses: Clause 5.1.2.1, if a TDP is required under the Contract.

Clause 5.1.2.8 requires the conduct of the TEPPR.

MSR-CHECKLIST-TEPPR details the entry, review and exit criteria for the TEPPR.

Clause 5.2.7, Training Support Design

Clause 5.3.4 requires implementation (including delivery) of the Training solution.

COT Attachment A, Annex D, for NTE Pricing.

COT Attachment A, Annex F requires a draft TEL used to inform the NTE price.

Further Reading: See SOW clause 5.2.8.

5.2.8.5 Technical Data

Status: Core

Purpose: To require the Contractor to undertake a *deliberate* process of analysing the Technical Data required to implement the Support System, considering the totality of Technical Data requirements across all SSCCs.

Policy: Refer to clause 5.2.8.

DEFLOGMAN Part 2 Volume 10 Chapter 5, *Defence Policy on Acquisition and Management of Technical Data*

DMI(ENG) 12-2-003, *Acquisition and Management of Technical Data*

DMH(ENG) 12-2-003, *Technical Data Management Handbook*

Guidance: The Glossary defines Technical Data as, "all technical know-how and information reduced to a material form …" for a wide range of different types of Technical Data. This definition is important for understanding scope.

Clause 5.2.8.5 addresses two sets of Technical Data, as listed in:

a. the TDL, which lists the Technical Data needed for the SSFBL; and

b. the Data Accession List (DAL), for Technical Data not identified for delivery but potentially useful for aiding Commonwealth understanding.

The Technical Data Plan (TDP) if required, or otherwise the ISP, is to describe the process by which Technical Data will be optimised. In general, optimisation would consider the structure or packaging of information in into differing hardcopy manuals or ITEM / IETP modules by system, function or user.

Technical Data List

The MTDI is an electronic index (ie, database or spreadsheet) for listing all deliverable Technical Data required for the acquisition processes (ie, under the Contract) and also the Technical Data to be used in-service. The MTDI can be queried or 'filtered' to produce different lists – the TDL is one of the sub-lists or 'filtered views' of the MTDI, as specified by DID-ILS-TDATA-MTDI.

Some Technical Data will be used for both acquisition and in-service support and, in this case, the Technical Data will be assigned or 'tagged' to be included in more than one of the sub-lists in the MTDI. For example, an interface specification reviewed at DDR may be included in an in-service system specification set; hence, it would appear in both the MSTDT and the TDL 'sub-lists' the MTDI.

Clause 5.2.8.5.1 requires the Contractor to conduct a Technical Data requirements analysis to identify the Technical Data required for the SSFBL, and inclusion in the TDL. This analysis considers who needs the Technical Data, which is important for assessing the acceptability of restrictions in the TDSR Schedule at Attachment D. DMH(ENG) 12-2-003 describes the Technical Data requirements analysis that should be undertaken by the Commonwealth when refining the support concept and developing support requirements for the FPS.

The TDL evolves during the Contract as Technical Data is identified or created. A bit like a CDRL, the TDL includes delivery details for the Technical Data to be delivered to the Commonwealth, Contractor (Support), an Associated Party, or into escrow (if applicable).

Data Accession List

The DAL, defined by DID-ILS-TDATA-DAL, lists Technical Data that is not identified for delivery under the Contract but which is 'accessible' and potentially useful to aid Commonwealth understanding. This could include an internal Contractor study report and access to this report may enable the Commonwealth better understand a recommendation or design decision. Alternatively, this could be a source document used when compiling a new manual and the Commonwealth may wish to see this document in order to confirm the validity of the new manual.

Clauses 5.2.8.5.3 and 5.2.8.5.4 require the Contractor to deliver and update a DAL and allow the Commonwealth to access / view the listed Technical Data. The DAL is a spreadsheet or database that can be searched and sorted for items of interest.

Clause 5.2.8.5.5 allows the Commonwealth, having viewed an item from the DAL, to request that the item of Technical Data to be added to the MTDI (in which case it can be removed from the DAL), if applicable.

If the Commonwealth requires the Technical Data from the DAL to inform Contract activities, the item could be added to the MTDI under the MSTDT or Drawings List, or simply 'tagged' for inclusion in a particular Review Package.

If the Commonwealth believes the Technical Data is required for the SSFBL (ie, overlooked by the Contractor), then the item may be added to the MTDI under the TDL, and to the Publications Tree or TML if applicable (both subsets of the TDL).

Under clause 5.2.8.5.6, if the Commonwealth requires Technical Data from the DAL that is outside the scope of 'normal' Contract deliverables, the Technical Data may still be requested and delivered, subject to agreement and a CCP if required (eg, if there is a cost for the additional Technical Data).

If escrow is applicable to the Contract, optional clause 5.2.8.5.7 may be included. An Escrow Item is identified in the TDL for delivery to the escrow agent, in accordance with an Escrow Agreement.

Drafter's Action: Clause 5.2.8.5.7 may be deleted if escrow will not be required, or retained in the RFT until a decision can be informed by the preferred tender response. Otherwise, clause 5.2.8.5 is to be included in the RFT without alteration.

Related Clauses: COC clause 5, Technical Data, Software and Contract Material

Attachment D, TDSR Schedule

DID-ILS-TDATA-DAL defines the content requirements for the DAL.

DID-ILS-TDATA-MTDI defines the content requirements for the MTDI.

DID-ILS-TDATA-TDP defines the content requirements for the TDP.

Clause 5.3.3 requires the implementation (including delivery) of the Technical Data.

Further Reading: DMH(ENG) 12-2-003, *Technical Data Management Handbook*.

5.2.8.6 Support and Test Equipment

Status: Core

Purpose: To require the Contractor to analyse the range and quantity of S&TE required, considering the totality of S&TE requirements across all of the SSCCs.

Policy: Refer to clause 5.2.8.

DEFLOGMAN Part 2 Volume 10 Chapter 19 *Calibration Policy for Defence Support and Test Equipment*

Guidance: The Glossary defines S&TE as, "the equipment needed to support the operation, support and disposal of the Mission System and Support System Components….". The definition lists examples, identifying a broad range of equipment, ranging from vehicles and large automatic test equipment to materials handling equipment, hand

tools, and personal protective equipment. Most S&TE is required for Maintenance Support; however, S&TE is applicable to all SSCCs.

S&TE for Maintenance needs to be located where those tasks are performed and comprehensive LORA models consider the cost and utilisation of S&TE and collocation of Maintenance tasks that use the same expensive S&TE. Otherwise, S&TE requirements are determined from the time an item of S&TE is used to perform each task in a location. S&TE requirements by location can be reported using an LSAR report (if an LSAR is included in the Contract).

The Approved ISP should explain how S&TE will be rationalised / optimised, including standardisation and offsetting of identified S&TE with S&TE in-service with the Commonwealth and available for use.

Clause 5.2.8.6.2 requires the Contractor to document and justify the optimised range and quantity of S&TE in the S&TE Provisioning List (S&TEPL), as defined by DID-ILS-S&TE-S&TEPL.

The S&TEPL provides all of the information required for provisioning purposes; in addition to any S&TE Approved as LLTIs. The Contractor is required under clause 5.1.2.7 to hold an S&TEPPR to enable a joint review of the S&TEPL. Following the S&TEPPR and Approval of the S&TEPL, the Contractor is required, under SOW clause 5.3.5, to provide the S&TE identified in the Approved S&TEPL.

Note that the price for S&TE is not included in the initial Contract Price but subject to an NTE price (refer TDR D-2) for all S&TE required by the Commonwealth to achieve the SSFBL (however, the Commonwealth may acquire additional S&TE in accordance with clause 5.3.5). After Approval of the S&TEPL and agreement on the overall price to be paid for S&TE, the Contractor will be required to include the S&TEPL in the Delivery Schedule (Attachment C) and include the S&TE price in the Contract via a CCP at clause 5.2.8.6.3.

Drafter's Action: Clause 5.2.8.6 is to be included in the RFT without alteration. However, drafter's need to consider the tender requirements and whether existing S&TE has been adequately identified to be provided to the contractor to rationalise S&TE requirements when preparing the S&TEPL.

Related Clauses: Clause 5.1.2.7 requires the conduct of the SPPR.

MSR-CHECKLIST-S&TEPPR details the entry, review and exit criteria for the S&TEPPR.

DID-ILS-MGT-ISP defines requirements for identifying and managing S&TE.

DID-ILS-S&TE-S&TEPL defines the requirements for the S&TEPL.

Clause 5.3.5 requires the implementation (including delivery) of S&TE.

COT Attachment A, Annex D for NTE Pricing of S&TE.

COT Attachment A, Annex F requires a draft S&TEPL to inform the NTE price.

Further Reading: Refer to clause 5.2.8.

5.2.8.7 Facilities

Status: Optional. To be included if the Contractor will be providing or modifying Facilities, or when the Commonwealth requires a report from the Contractor so that the Commonwealth can build or modify Facilities.

Purpose: To require the Contractor to undertake a *deliberate* process of analysing Facilities requirements across all of the SSCCs.

Policy: Refer to clause 5.2.8.

Guidance: Facilities elements for a project are generally acquired by E&IG, separate to the major equipment elements. However, details of Defence Facilities may need to be provided to the Contractor so that the Contractor can take existing Facilities into

consideration, and then provide advice to the Commonwealth on any modifications or to-be-developed Facilities to accommodate the new system. Where the Mission System is to be installed in Defence Facilities, a Site Installation Plan (SIP) (see clause 4.4.1) would also be prepared. If the Contract has no impact on Facilities, or all requirements can be determined internally by Defence, then this clause may be replaced with a single 'Not used'.

The results from LORA and reports from an LSAR can be used to determine the tasks performed at different Facilities, utilisation rates, required utilities (eg, power, water, compressed air, etc) and, if populated in the LSAR, required storage space. Volumetric data, included with Codification Data, can also be used to calculate approximate storage space requirements. Rationalisation and optimisation of Facilities could simply involve reviewing separate Facilities requirements and determining if these can be accommodated within a single Facility. For specialist advice, guidance should be sought from E&IG.

Clause 5.2.8.7.3 requires the Contractor to provide a Facilities Requirements Analysis Report (FRAR) (defined by DID-ILS-FAC-FRAR) with detailed information relating to the requirements for any new or modified Facilities. Under clause 5.3.6 the Contractor is required to modify or provide any Facilities that are within its work scope, in accordance with the Approved FRAR.

Clause 5.2.8.7.4 identifies the Facilities that will be modified or built by the Commonwealth using information from the FRAR. Because of the long lead times involved, a draft of the FRAR may be requested by TDR F and updated prior to ED. This delivery of the FRAR is then likely to contain updated information more applicable to fitout. Details of Facilities need to be inserted.

Drafter's Action: The drafter needs to determine if this clause, and the FRAR, is required based on the need for new or modified Facilities, and whether all Facilities changes (and fitout) will be defined by E&IG. If required, the drafter is to insert details of Defence Facilities into clause 5.2.8.7.4, or delete this clause if not applicable. Otherwise, clause 5.2.8.7 is to be included in the RFT without alteration.

Related Clauses: Clause 4.4.1 includes a requirement for a SIP.

Clause 5.3.6 addresses the implementation of Facilities requirements.

DID-ILS-MGT-ISP defines the requirements for the Facilities planning.

DID-ILS-FAC-FRAR defines the content requirements for the FRAR.

DID-ILS-TDATA-CDATA requires volumetric data used to calculate storage space.

DID-ENG-MGT-SIP defines the content requirements for the SIP.

Further Reading: Refer to clause 5.2.8.

5.2.8.8 Personnel

Status: Core

Purpose: To require the Contractor to undertake a *deliberate* process of analysing the types (ie, skillsets) and quantities of Personnel required, considering the totality of the Personnel requirements across all of the SSCCs.

Policy: Refer to guidance for clause 5.2.8.

Guidance: Personnel as a Support Resource, is defined in the Glossary to include "all staff involved in the operation and support of the Mission System and Support System, including Commonwealth, Contractor (Support), and Subcontractors (Support)". This includes Personnel who perform managerial and supervisory functions. Note that this does not include project staff; 'Personnel' are part of the in-service capability.

The Approved ISP should describe how Personnel requirements will be determined. LSAR reports can capture Personnel requirements by skill type, skill level (grade)

and 'time on task'. However, allowance needs to be made for administrative tasks, unrelated duties, training and leave. For specialist guidance, advice should be sought from workforce planning personnel within Defence.

Clause 5.2.8.8.2 requires the Contractor to document the optimised range and quantity of Personnel in the Personnel Resource Requirements List (PRRL) (defined by DID-ILS-PERS-PRRL), which requires the Contractor to justify the skill types and quantities of Personnel being recommended. Personnel listed in the PRRL are also to be grouped as Commonwealth or Contractor (Support).

Drafter's Action: Clause 5.2.8.8 is to be included in the RFT without alteration.

Related Clauses: Clauses 5.2.3 - 5.2.7 identify Personnel requirements for each of the SSCCs.

DID-ILS-PERS-PRRL defines the content requirements for the PRRL.

Further Reading: Refer to guidance for clause 5.2.8.

5.3 Support System Implementation

Status: Core (with optional subclauses)

Purpose: To require the Contractor to implement those elements of the Support System that are delivered to or otherwise of interest to the Commonwealth.

Policy: Nil.

Guidance: Clause 5.2 completes the 'design' of the Support System and the identification of the Support Resources and Training required (noting that the Support System includes the Commonwealth, Contractor (Support) and Subcontractors (Support)). Clause 5.3 concentrates on the implementation of:

a. the Support Resources and the Training delivered to the Commonwealth;

b. Technical Data delivered under the Contract (all applicable recipients); and

c. major Support Resources that are not delivered to the Commonwealth as Supplies; but considered to be of such significance that visibility of their development and implementation is required (eg, for AIC requirements).

Drafter's Action: Refer to subclauses.

Related Clauses: SOW clauses 4.4 and 4.5 include parallel and inter-related SE program activities such as Mission System installations into Facilities, when applicable.

Coordination is usually required with clause 7, Verification and Validation, activities.

Further Reading: Nil

5.3.1 General

Status: Core

Purpose: To ensure that the Contractor understands its responsibility to coordinate the delivery of Supplies, including in preparation for Support System Validation.

Policy: Refer to guidance for clause 5.3.

Guidance: Clause 5.3.1.1 requires the Contractor to acknowledge that there is a lead-time for the Commonwealth to receipt, distribute, and integrate (as applicable) particular Support Resources, and to coordinate Training. These issues need to be considered when the Contractor is planning deliveries and implementation.

The Contractor initially provides a high-level schedule for the delivery of the Support Resources in their plans for these deliverables (eg, Technical Data in accordance with the Approved TDP, Spares in accordance with the Approved SSDP). The schedule for delivery of significant Support Resources will be documented in the CMS and Milestone schedule.

The Commonwealth Representative should negotiate the delivery schedules to ensure that there is sufficient lead-time to enable the Commonwealth to undertake its Support System integration activities. Nevertheless, this clause advises the Contractor that it needs to allow time after delivery these integration activities. Attention is aso drawn to clause 3.2.3.5c, which relates to Commonwealth obligations and the implications for the CMS.

Drafter's Action: Clause 5.3.1 is to be included in the RFT without alteration.

Clause 5.3.1.2 may need to be amended depending upon the Contractor's involvement in future support arrangements.

Related Clauses: Clause 5.2, Logistics Support Analysis Program

Clause 7.2.2, Acceptance Verification

Clause 7.2.4, Acceptance Validation

Further Reading: Nil

5.3.2 Implementation of Spares and Packaging Requirements

Status: Core

Purpose: To require the Contractor to produce or acquire, and deliver the Spares and Packaging identified in the respective provisioning lists for delivery to the Commonwealth.

Policy: Refer to guidance for clause 5.3.

DEFLOGMAN Part 2 Volume 5 Chapter 12, *Australian Defence Force requirements determination and management of reserve stocks*

DEFLOGMAN Part 2 Volume 5 Chapter 12, *Supply Chain Management of Aeronautical Product*

DEFLOGMAN Part 2 Volume 8 Chapter 6, *Defence packaging compliance policy to support deployment overseas and for redeployment to Australia*

Guidance: Refer to subclauses below.

Drafter's Action: Refer to subclauses.

Related Clauses: Refer to subclauses.

Further Reading: Nil

5.3.2.1 Spares

Status: Core

Purpose: To require the Contractor to produce or acquire, as applicable, and deliver Spares to the Commonwealth, as per the Approved RSPL.

Policy: Refer to guidance for clause 5.3.2.

Guidance: Clause 5.3.2.1 requires the Contractor to produce or acquire and deliver Spares to the Commonwealth in accordance with the Approved RSPL. The RSPL should identify the delivery location for each item, which allows for more specific location details than that specified in the Delivery Schedule at Attachment C (noting that the Approved RSPL is generally attached to the Delivery Schedule in any case).

Clause 5.3.2.1.3, if included, allows the Commonwealth to own Spares that would otherwise be provided to a Contractor (Support) based on their planned Maintenance responsibilities. The Commonwealth may consider it beneficial to own these Spares for risk-management reasons (eg, to make it easier to re-compete the Contract (Support) in the future).

Clauses 5.3.2.1.4 and 5.3.2.1.5 allow the Commonwealth to procure Spares in addition to those needed to meet the SSFBL, and also exceeding the NTE price. As risk mitigation, tendered NTE prices are used to cap the price to be paid for the Spares needed to achieve the SSFBL. If the Commonwealth subsequently decides that additional quantities of Spares are required (eg, insurance Spares or Contractor (Support) Spares), then these additional Spares may result in the total cost exceeding the NTE price. If a different approach to procurement is adopted, then these two clauses may need to be amended or deleted

Drafter's Action: Drafters are to insert reference to the SSDP or ISP clause 5.3.2.1.1 as applicable.

Drafters are to consider the need for clause 5.3.2.1.3. If not required, the clause should be replaced with 'Not used'.

Drafters are to review clauses 5.3.2.1.4 and 5.3.2.1.5, in the context of Spares procurement and the NTE price, and amend these clauses if required.

Related Clauses: TDR D-2 (NTE prices) and TDR F-8 (draft RSPL).

Attachment C to the draft COC identifies delivery locations for items of Supplies.

Clause 5.1.2 identifies the requirements for the SSDP and conducting an SPPR.

Clause 5.2.8.2, Spares, to analyse Spares requirements and deliver the RSPL.

Clause 7.2.2, Acceptance Verification

Clause 7.2.4, Acceptance Validation

Further Reading: Nil.

5.3.2.2 Packaging

Status: Core

Purpose: To establish the obligation for the Contractor to produce or acquire, as applicable, and deliver Packaging to the Commonwealth, as per the Approved PACKPL.

Policy: Refer to guidance for clause 5.3.2.

Guidance: Clause 5.3.2.2 requires the Contractor to produce or acquire and deliver Packaging to the Commonwealth in accordance with the Approved PACKPL. The PACKPL identify the delivery location for each item, which allows for more specific location details than that specified in the Delivery Schedule at Attachment C (noting that the Approved PACKPL may be attached to the Delivery Schedule).

Note that this clause refers to Packaging that is a Supply, not general packaging materials. This is usually special-to-type, reusable, 'custom designed and built' Packaging. Refer to the guidance for clause 5.2.8.3 for further explanation. . Not only is this Packaging a Supply, included in the RPL, it generally makes sense to use it for the initial delivery of the other Supplies (Spares and S&TE) that it's designed to protect.

Drafter's Action: Drafters are to insert reference to the SSDP or ISP clause 5.3.2.2.1, as applicable. Other clauses may be included in the draft RFT without alteration.

Related Clauses: Attachment C to the draft COC identifies delivery locations for items of Supplies.

Clause 5.1.2.1 identifies the requirement for a SSDP.

Clause 5.2.85.2.8.3 for the analysis of Packaging and delivery of the PACKPL.

Clause 7.2.2, Acceptance Verification

Clause 7.2.4, Acceptance Validation

Further Reading: DEF(AUST)1000C *ADF Packaging Standard*

5.3.3 Implementation of Technical Data Requirements

Status: Core (with optional subclauses)

Purpose: To establish the obligation for the Contractor to create, develop or acquire, as applicable, and deliver the identified Technical Data.

Policy: Refer to clause 5.3.

DEFLOGMAN, Part 2 Volume 10 Chapter 5 *Defence Policy on Acquisition and Management of Technical Data*

DEFLOGMAN Part 2 Volume 5 Chapter 5 *Item identification and recording of Defence assets*

Guidance: *ASDEFCON*, requirements for Technical Data have been integrated with the requirements for IP licenses and sub-licences for Defence and other parties to use that Technical Data. As a result of this integration, a number of the subclauses in this clause are linked to the IP clauses in the COC (clause 5, Technical Data, Software and Contract Material). COC clause 5.14 defines the meaning of 'delivery' of Technical Data, including electronic delivery.

5.3.3.1 General

Clause 5.3.3.1 requires the Contractor to deliver the Technical Data identified for delivery in accordance with the Approved TDL. The TDL lists all of the Technical Data needed for the SSFBL, including Technical Data required by the Contractor (Support) and Subcontractors (Support) and other parties. Given the links to IP, a draft TDL is obtained as part of the initial tender response (refer to TDR F-8.7) to confirm that Technical Data will be able to be provided to the applicable parties, including in-service support contractors.

This clause also identifies that where the Contractor is to deliver items of Technical Data to Associated Parties (eg, a support contractor) and not the Commonwealth, the Commonwealth is able to have copies delivered to the Commonwealth, in accordance with the COC.

5.3.3.2 Publications

Clause 5.3.3.2 requires the Contractor to identify publications, and amendments when applicable, to be listed in the hierarchial Publications Tree. The Publications Tree represents a complete list of publications and amendments to be delivered (including Commonwealth, Contractor, Subcontractor, Contractor (Support), Subcontractors (Support), and third party publications). The Publications Tree is a publication-specific sub-list of the larger TDL, all within the MTDI.

Clause 5.3.3.2.2 requires the Contractor to develop publications and amendments, as listed in the Publications Tree, and deliver those in Publications Packages.

DID-ILS-TDATA-PUBPACK includes specifications for the publications in the publications packages to be delivered to the Commonwealth (ie, it does not necessarily apply to publications delivered to other parties). DEF(AUST)5629B is used to specify requirements for publications, and this should not be removed unless agreed by the relevant publications authority. For electronic publications, S1000D™ is referenced but, when applicable, DID-ILS-TDATA-IETMP should be developed for this purpose and additional guidance should be sought from the CASG Engineering and Technical CoE (casgcoe.engineering@defence.gov.au).

Clause 5.3.3.2.3 requires the Contractor to Verify and Validate that publications are accurate, grammatically and technically correct, and suitable for use. This clause may appear to overlap with V&V clauses, however, it has been included because of the different definitions of verification and validation in DEF(AUST)5629B.

5.3.3.3 Interactive Electronic Technical Manuals and Publications (Optional)

Clause 5.3.3.3 is an optional clause, requiring the Contractor to provide Interactive Electronic Technical Manuals (IETMs) / Interactive Electronic Technical Publications (IETPs) in accordance with DID-ILS-TDATA-IETMP. Drafters wishing to include

IETMs / IETPs need to develop the DID as a specification that documents the functions, performance requirements, and standards for the IETMs / IETPs. IETM / IETP capabilities can vary from linear PDF files to configurable dynamic document generation systems; hence, the functions and performance available often depend on the underlying technology.

DID-ILS-TDATA-IETMP needs to be developed prior to the RFT or in response to tendered IETM / IETPs solutions. To develop this DID drafters should seek advice from the Engineering and Technical CoE (casgcoe.engineering@defence.gov.au).

The note to tenderers highlights that it is difficult to tender a fully detailed requirement for IETMs / IETPs when the systems and capabilities of the tenderers is unknown. Developing IETMs / IETPs can be a candidate for ODIA discussion or a Commonwealth-directed trade study (refer clause 2.6) in order to investigate the costs and benefits. If IETMs / IETPs are to be sought, then this clause and DID-ILS-TDATA-IETMP should be included.

The Technical Data Plan (TDP) should address the development of IETMs / IETPs (clause 6.2.8 of DID-ILS-TDATA-TDP refers). The TDP also recognises possible linkages to Computer-Based Training (CBT), if required under the Contract.

5.3.3.4 Codification Data (Optional)

Clause 5.3.3.4 is an optional clause, which when included requires the Contractor to provide Codification Data, as defined in DID-ILS-TDATA-CDATA, based on a standardisation agreement to which Defence is a signatory (ie, Appendix 1 to NATO Standardisation Agreement (STANAG) 4177). The only reason not to include this clause would be if the systems being acquired were already fully codified. If the clause is included, it should not be changed without the agreement of the National Codification Bureau (NCB) (ncb.helpdesk@defence.gov.au).

Codification is mandatory for items of supply that meet the criteria in DEFLOGMAN Part 2 Volume 5 Chapter 5 *Item identification and recording of Defence assets*. These items are to be registered on the MILIS for asset management and reporting purposes. Codification may also be required for Contractor-owned items that will be moved via Defence (and allied) supply chains.

Codification Data is used to identify each item of Supplies (other than data, Software and services) based on essential characteristics that give each item its unique character and differentiate it from any other item. Many existing items will have a NATO Stock Number (NSN) as a result of prior Codification; however, for a developmental system (the purpose of *ASDEFCON (Strategic Materiel)*) many new items will need Codification. The clause is optional as it may be clear that, if all tenderers are foreign based, Codification will be completed in the country of origin.

Clause 5.3.3.4 allows Codification Data to be delivered to the Commonwealth Representative (default in the CDRL) or, if agreed, direct to the NCB. Codification Data may include commercially sensitive information including details of production processes. Clauses 5.3.3.4.3 and 5.3.3.4.4 clarify that Codification Data will only be retained by Australian and other NCBs to ensure accuracy of future Codification activities, and that only when Codification Data is provided for another purpose can it be used outside the scope of Codification. For example, Hazardous Chemicals information in the Codification Data is used by the System Safety Program and is also delivered in Safety Data Sheets. This information may also help to identify problematic items of supply when items are catalogued

Clause 5.3.3.4.5 requires the relevant clauses to be included in Subcontracts. This makes Subcontractors aware of the requirement and also allows them to submit Codification Data direct to the NCB, when the Commonwealth agrees. This can allow commercially sensitive production information to bypass the prime contractor.

5.3.3.5 Logistics Support Analysis Record (Optional)

Clause 5.3.3.5 is optional. When included, the Contractor is required to provide LSA data in accordance with one of the optional clauses. An LSA objective is the use of

common and consistent information by all parties concerned and the LSAR is intended to meet this purpose.

An LSAR may comply with a Defence standard (eg, DEF(AUST)5692) or an international standard (eg, S3000L™), or be a proprietary data repository Approved by the Commonwealth Representative. The optional clauses allow for:

a. a fully compliant LSAR;

a. a non-compliant LSAR that produces a compliant data transfer files; and

b. a non-compliant data repository, where delivery to the Commonwealth is not required to be in a compliant format.

A compliant LSAR would be sought in the RFT, with alternatives considered during negotiations or pre-contract work if a compliant solution is not feasible. DID-ILS-TDATA-LSAR is aligned to DEF(AUST)5692; however, a MIL-STD-1388-2B LSAR can be used if the Australian-specific data tables are not required. Where a non-compliant solution is included in the Contract, DID-ILS-TDATA-LSAR would need to be re-drafted to capture equivalent data from the non-compliant solution. Optional clauses not required under this clause should be replaced with 'Not used'.

DEF(AUST)5692 is the current standard but may be replaced in the longer term by S3000L™ or another standard. While this may offer benefits, the ILS team need to consider the implications of using a unique system without Defence-wide adoption.

DEF(AUST)5692 was developed to support Defence in both the acquisition and in-service phases. If the LSAR data is to be used in-service, then selecting Option A or B in the first option box will avoid Defence having to build a compliant LSAR at a later time, or incur the burden of supporting a non-compliant system (Option C). In the second option box, for the delivery / transfer of LSAR data, Option A applies to both compliant systems and non-compliant systems that are capable of generating compliant data transfer files.

The ISP explains the Contractor's use of the LSAR, including data transfer. The ISP should also document how existing data for off-the-shelf items will be assessed and incorporated into the LSAR.

LSAR data is developed progressively and DID-ILS-TDATA-LSAR identifies the population of LSAR data tables before specific MSRs. If a non-compliant system is used, equivalent information is needed for LSA. For example, the Task Analysis Report (defined by DID-ILS-DES-TAR) is able to work stand-alone or, preferably, with the bulk of the information provided from the LSAR (except for Engineering Support and Training Support tasks).

Timely feedback between LSAR data entry and review can improve the quality of the resulting outputs (eg, Task Analysis Reports and provisioning lists). Therefore, on-line / DMS access to the LSAR by the Commonwealth is a significant advantage. This is supported by clause 5.3.3.5.4.

DID-ILS-TDATA-LSAR provides considerable detail on scheduling LSA data to support Commonwealth review leading up to applicable MSR milestones. Minimum data delivery of is described in the DID by tables and depth of Materiel System structure, and these details need to be reviewed and updated to meet individual contract requirements. Final delivery of the completed LSAR is normally required at System Acceptance.

Drafters need to fill in the Data Selection Sheet in DID-ILS-TDATA-LSAR, usually with input from stakeholders. The Data Selection Sheet and focussing of data requirements for SSCCs and new versus existing items, will usually be finalised pre-contract or in the early planning stages of the Contract.

5.3.3.6 Escrow (Optional)

Clause 5.3.3.6 is optional and if escrow is not required the clause can be replaced with a single 'Not used'. When required, the clause requires the Contractor to enter into an agreement with an Escrow Agent (who is approved by the Commonwealth)

for the Escrow Items listed in Annex G to the TDSR Schedule. Essentially, the SOW clause captures the work effort for the escrow requirements of COC clause 5.

Escrow may be required if the Contractor has Technical Data that is commercially sensitive and that it will not release now, but the Commonwealth may need later in the system's life, usually following specified events. For example, production data needed for major structural repairs may not be accessible if the company has been closed, but the data held in escrow would have been released to the Commonwealth on the change in company circumstances, enabling the structural repairs to be performed (ie, through another contractor).

Before defining escrow arrangements, the Commonwealth needs to undertake a Technical Data requirements analysis to ascertain the Technical Data required.

Drafter's Action: Drafters are to review the optional clauses (IETPs, LSAR and escrow) to determine applicability to the Contract. In some cases, it is not possible to determine the full details of an option until after tender evaluation. In this case, drafters may retain the clauses in the RFT, adding notes to tenderers if required, and then remove or amend the clauses prior to Contract ED.

Drafters are to review the requirements for a draft TDL to be tendered at TDR F-8.

Drafters are to ensure that optional clauses in the draft SOW that relate to the LSAR are coordinated (included / removed) with clause 5.3.3.5.

When the applicable options are included, drafters will need to tailor DID-ILS-TDATA-LSAR and DID-ILS-TDATA-ITEMP.

Related Clauses: Clause 5 of COC, Technical Data, Software and Contract Material, for managing restrictions on the use of Technical Data (eg, due to Intellectual Property) and the delivery of Technical Data.

Attachment C sets out the delivery location for Supplies.

Clause 3.15, Technical Data and Software Rights Management

Clause 5.1.2.1 requires a TDP.

Clause 5.2.8.5 includes analysis of Technical Data requirements.

Clause 6.7, Functional and Physical Configuration Audits (FCA/PCA). Under a PCA Technical Data for the Mission System and Support System Components are audited.

Clause 7.2.2, Acceptance Verification

Clause 7.2.4, Acceptance Validation

DID-ILS-TDATA-CDATA defines the content requirements for Codification Data.

DID-ILS-TDATA-TDP defines the content requirements for a TDP.

DID-ILS-TDATA-MTDI defines requirements for the TDL, including for the Publications Tree and Training Materials List.

DID-ILS-TDATA-DAL defines the requirements for the DAL.

DID-ILS-TDATA-ITEMP defines the requirements for IETMs / IETPs.

Annex F to Attachment A to the COT requires each tenderer to provide a draft TDL.

Further Reading: DMI (ENG) 12-2-003 *Acquisition and Management of Technical Data*

DMH (ENG) 12-2-003 *Technical Data Management Handbook*

ASDEFCON Technical Data & Intellectual Property Commercial Handbook

ESCM Volume 3 *ADF Codification and Catalogue*

DEF(AUST)5692 *ADO requirements for a Logistic Support Analysis Record*

ADO LSA Manual Part 5 Chapter 1 *LSAR Tools*

5.3.4 Implementation of Training and Training Support Requirements

Status: Core

Purpose: To establish the obligation for the Contractor to:

a. develop or acquire all Training Materials necessary to progress each Approved Draft LMP to a complete LMP;

b. deliver complete LMPs for each new, modified and existing Training course;

c. develop or acquire, deliver and install if applicable, the Training Equipment identified for delivery to the Commonwealth in the Approved Training Equipment List (TEL); and

d. conduct Contractor-provided Training at the locations specified.

Policy: Refer to clause 5.3.

SADL 'Develop Phase' and *'Implement Phase'* sections

Guidance: Clause 5.3.4 covers the 'develop' and 'implement' phases of the SADL. Outputs of the 'develop' phase are the completed LMP for each new or modified Training course, and the delivery of Training Materials and Training Equipment for all Training courses. The outputs of the 'implement' phase is the conduct of Training and reports that feed into the SADL 'evaluation' phase as part of the V&V program.

In clause 5.3.4.1 the drafter should identify service-specific Training manuals, if applicable. These may be different sections of manuals identified in clause 5.2.7.

Clause 5.3.4.2 requires the Contractor to develop or acquire all Training Materials necessary to complete the development of each Approved Draft LMP for each new or modified Training course; Draft LMPs were developed under clause 5.2.8.4.

Clause 5.3.4.3 requires the Contractor develop, deliver and update complete LMPs (both draft and complete LMPs are defined by DID-ILS-TNG-LMP). For new and modified Training courses, this includes the Training Materials developed for the preceding clause. For existing courses, LMPs may be updated, if required, and then delivered.

Clause 5.3.4.4 requires the Contractor to develop or acquire the Training Equipment identified in the Approved TEL. The TEL was defined under clause 5.2.8.4 and Approved at the TEPPR (see clause 5.1.2.8).

Clause 5.3.4.5 requires the delivery of Training Equipment to the Commonwealth. The TEL specifies delivery locations, allowing for more specific delivery details than the Delivery Schedule at Attachment C (noting that the Approved TEL would be referenced from or attached to the Delivery Schedule). If Training Equipment needs to be installed, this is covered by clause 5.3.4.6 and the TSP or in the ISP, as applicable. The note to tenderers above clause 5.3.4.6 highlights that V&V is included under the V&V clauses (for Support System Components).

Optional clause 5.3.4.7 allows the Commonwealth to own Training Equipment that may otherwise be acquired by the Contractor (Support), if Commonwealth stakeholders consider it beneficial to own such items (eg, to avoid sole-source support contracting arrangements or to enable Training to be brought 'in-house'). These items may then be provided as GFE to the Contractor (Support) or another Training Services provider.

Clauses 5.3.4.8 and 5.3.4.9 allow the Commonwealth to procure additional items of Training Equipment. This may result in the total cost for Training Equipment exceeding the NTE price. If a different approach to Training Equipment procurement is adopted, then these two clauses may require amendment.

Clause 5.3.4.10 requires the Contractor to conduct a Training Readiness Review (TNGRR) in accordance with clause 5.1.2.9 (this clause cross-references an existing requirement). A TNGRR is held to confirm that all required Support Resources and

participants are ready for Training to proceed. Hence, a TNGRR may be held for each new course, a program of courses, or for courses in different locations, as identified in the Approved TSP or ISP as applicable.

Clauses 5.3.4.11 and 5.3.4.12 require the Contractor to deliver Training. Drafters can use the table under clause 5.3.4.11 to identify numbers of Personnel, by skill set / level and location, that may require Training. As Training requirements evolve under the Contract, the need for Training will be further defined and this table may be updated but will otherwise be superseded by a more detailed Training program in the Approved ISP / TSP. Note that identifying the locations of Personnel in the table does not prevent them from travelling to a different location. Training courses delivered should include all new or significantly modified courses, and any other courses needed to establish the skills of operators and support Personnel.

The Training review reports and evaluation activities should be integrated with the V&V program to avoid duplicated effort. The Contractor will need to detail how this integration is established in the TSP and the V&VP.

There are no specific clauses for Computer-Based Training (CBT). If CBT cannot be fully addressed by clauses for Training Equipment and Training Materials, then new clauses should be developed by the drafter. If dependent on tender responses, ODIA or other pre-contract work provide an opportunity to investigate the cost, benefits and risks associated with CBT, as may be necessary to finalise draft clauses. Alternatively, CBT may be a candidate for a Commonwealth-directed trade study (refer clause 2.6). Drafters should also note that DID-ILS-TNG-CBT is incomplete and would need to be developed as a specification for CBT (eg, identifying the scope and applicable standards).

Drafter's Action: Drafters are to insert the relevant service-specific manual in clause 5.3.4.1.

Drafters are to review the requirement for the optional clause 5.3.4.7. If not required the clause should be replaced with 'Not used'.

Drafters are to insert details for Contractor-provided Training in the table under clause 5.3.4.11.

If CBT is a requirement, then DID-ILS-TNG-CBT needs to be developed.

Subject to the above considerations, clause 5.3.4 may be included in the RFT without alteration.

Related Clauses: Attachment C to the draft COC sets out the delivery location for various Supplies.

Clause 5.1.2 identifies the requirements for:

a. a Training Support Plan (TSP); and

b. a TEPPR and the TNGRR(s).

Clause 5.2.8.4 provides the mechanism to analyse Training requirements.

Clause 7.2.2, Acceptance Verification

Clause 7.2.4, Acceptance Validation

MSR-CHECKLIST-TNGRR defines the entry, review and exit criteria for the TNGRR.

Further Reading: *SADL*

5.3.5 Implementation of Support and Test Equipment Requirements

Status: Core

Purpose: To require the Contractor to design and develop or acquire, as applicable, and deliver the S&TE identified for delivery to the Commonwealth in the Approved S&TEPL.

Policy: Refer to clause 5.3.

DEFLOGMAN Part 2 Volume 10 Chapter 19 *Calibration Policy for Defence Support and Test Equipment*

Guidance: Clause 5.3.5.1 requires the Contractor to develop or acquire the S&TE identified in the Approved S&TEPL. The S&TEPL was defined under clause 5.2.8.6 and Approved through the S&TEPPR (clause 5.1.2.7).

Clause 5.3.5.2 requires the delivery of S&TE to the Commonwealth. The S&TEPL specifies delivery locations, allowing for more specific delivery details than the Delivery Schedule at Attachment C (noting that the Approved S&TEPL would be referenced from or attached to the Delivery Schedule). If S&TE needs to be installed, this is covered by clause 5.3.5.3. The note to tenderers above clause 5.3.5.3 highlights that V&V of S&TE is covered under the V&V clauses (for Support System Components).

Optional clause 5.3.5.4 allows the Commonwealth to own S&TE that may otherwise be acquired by the Contractor (Support), if Commonwealth stakeholders consider it beneficial to own such items (eg, to avoid sole-source support contracting arrangements). These items may then be provided as GFE to the Contractor (Support) and to another support Services provider.

Clauses 5.3.5.5 and 5.3.5.6 allow the Commonwealth to procure additional items of S&TE. This may result in the total cost for S&TE exceeding the NTE price. If a different approach to S&TE procurement is adopted, then these two clauses may require amendment.

Drafter's Action: Drafters are to review the requirement for the optional clause 5.3.5.4. If not required the clause should be replaced with 'Not used'.

Drafters are to review clauses 5.3.5.5 and 5.3.5.6, in the context of the approach to S&TE procurement, and amend these clauses if required.

Subject to the above considerations, clause 5.3.5 may be included in the RFT without alteration.

Related Clauses: Attachment C to the draft COC sets out the delivery location for various Supplies.

Clause 5.1.2 identifies the requirements for a S&TEPPR.

Clause 5.2.8.6 provides the mechanism to analyse Support and Test Equipment.

Clause 7.2.2, Acceptance Verification

Clause 7.2.4, Acceptance Validation

MSR-CHECKLIST-S&TEPPR defines the entry, review and exit criteria for the S&TEPPR.

Further Reading: Nil

5.3.6 Implementation of Facilities Requirements

Status: Optional. To be included if the Contractor is to provide or modify Facilities under the Contract, or to inform the Commonwealth of similar Facilities requirements.

Purpose: To place an obligation on the Contractor to design, construct, modify, fit-out, and commission, as applicable, Facilities identified for delivery to the Commonwealth.

Policy: Refer to clause 5.3.

Guidance: Clause 5.3.6 is optional and included for the same criteria as clause 5.2.8.7. The Approved FRAR describes the Facilities required in the life-cycle of the Mission System and the Support System (refer clause 5.2.8.7). The FRAR is divided into sections for Commonwealth Facilities, and Contractor and Subcontractor Facilities. The ISP describes (or references) the Contractor's processes for defining, developing, constructing or modifying, fitting-out, and commissioning Facilities.

Clause 5.3.6.1 should be included in an RFT if it makes sense for the Contractor to provide or modify Commonwealth Facilities. Facilities construction would normally be managed by E&IG; however, in many instances it makes sense for the Contractor to modify Facilities as part of an installation process (refer clause 4.4.1 and the Site Installation Plan). The approach to be taken should be discussed with E&IG and other stakeholders.

Clause 5.3.6.2 requires the Contractor to support the Commonwealth in its Facilities-related activities, consistent with the Approved FRAR. This clause helps to ensure that the Facilities constructed or modified by the Commonwealth are compatible with the Mission System and Support Resources. Depending upon Contract-specific requirements, this clause could be tailored to more accurately define the scope of the obligation. The Facilities requirements should be identified in the Approved FRAR, while the level of support to be provided to the Commonwealth is described in the ISP, as an ILS program activity.

Given long lead times typically involved with Facilities, definition of requirements, issues, and updates to these clauses are candidates for pre-contract work.

Optional clause 5.3.6.3 requires the Contractor to design, construct, fit-out, and commission Facilities required by the Contractor and Subcontractors, which do not form Supplies. This clause provides the Commonwealth with visibility into the Contractor's and Subcontractors' Facilities-related activities, when considered to represent significant risk to the successful implementation of the Materiel System or when applicable to implementing AIC requirements.

After a Commonwealth Facility has been constructed, modified, fitted-out and/or commissioned by the Contractor, the Contractor is required under clause 5.1.2.10 to conduct a FACRR. The FACRR confirms that a Facility is suitable to be handed over to the Commonwealth.

Drafter's Action: Drafters are to determine if new or modified Facilities will be a requirement of the Contract and, if not, replace the clause with 'Not used'.

Drafters are to consider the optional clause for visibility into the construction / modification of Contractor / Subcontractor Facilities critical to the Materiel System.

Related Clauses: Attachment C sets out the delivery location for Supplies, including Facilities.

Clause 5.1.2 identifies the requirement for a FACRR.

Clause 5.2.8.7 provides the mechanism to analyse Facilities requirements and for delivery of the FRAR.

Clause 7.2.2, Acceptance Verification

Clause 7.2.4, Acceptance Validation

MSR-CHECKLIST-FACRR defines the entry, review and exit criteria for the FACRR.

Further Reading: Nil

5.3.7 Implementation of Software Support

Status: Optional. To be included if the Contractor will be required to provide a Software Support Facility (SSF) under the Contract.

Purpose: To establish the obligation for the Contractor to implement an in-country SSF.

Policy: Refer to clause 5.3.

Guidance: This optional clause is included when the Engineering Support concept includes significant in-country support of Software (ie, programming / further development). The scope of Software to be managed by any in-country SSF should have been described, with specific performance requirements, in the FPS. As part of the design process for the Engineering Support SSCC, the Contractor should have designed and documented software-support elements in the Software Support Plan (see

clause 5.2.4). As such, the exact scope of coverage of the in-country SSF will be predicated upon a number of inputs, including:

a. the requirements in the OCD and FPS (and the Support System Specification) and through AIC requirements for subsequent support;

b. the scope, scale and nature of the Software to be supported;

c. the Software rights in the Contract (including IP and export restrictions); and

d. the outcomes of the Contractor's design processes for the Engineering Support Constituent Capability and any subsequent synthesis processes.

Drafters need to ensure appropriate details have been included in the FPS (eg, if the in-country SSF is to be a part of a larger Facility, such as a weapon-system support facility). Drafters may modify clause 5.3.7 to include more specific clauses for defining SSF implementation requirements. Drafters may also wish to add a clause to provide Commonwealth visibility into the Contractor's and Subcontractors' implementation of software support (eg, when these activities are not to be located in-country), similar to the optional clause 5.3.6.3 under Facilities. A clause of this nature would be relevant when these activities represent a risk to the successful implementation of the Support System.

Drafter's Action: Drafters are to determine whether or not an in-country SSF is a requirement of the Contract and, if not, to delete the clause and replace it with 'Not used'.

Drafters need to ensure that there is no conflict between this and the AIC clause.

If an in-country SSF is required, drafters are to further develop this clause (and in the FPS if required) in the context of the software support anticipated. Policy relating to Software may influence any further development of the clause.

Related Clauses: Clause 4 of the draft COC, Australian Industry Capability

Clause 4.4.2, Software Development

Clause 5.2.4, Engineering Support Design, which includes the delivery of a Software Support Plan.

Clause 7.2.2, Acceptance Verification

Clause 7.2.4, Acceptance Validation

Further Reading: Nil

6. CONFIGURATION MANAGEMENT

6.1 Configuration Management Planning

Status: Core

Purpose: To require the Contractor to develop a Configuration Management Plan (CMP) for Approval and to manage the Configuration Management (CM) program, including Subcontractor activities, in accordance with the Approved CMP.

Policy: DEFLOGMAN Part 2 Volume 10 Chapter 4, *Defence Policy on Configuration Management*

DMI (ENG) 12-2-002, *Configuration Management*

Guidance: Defence CM policy states that the requirements for CM, including the need for a CM system that meets regulatory and ILS management requirements and which will be achieved by the application of a properly resourced[8] CM system that manages the configuration status of Materiel and all associated technical documentation and data (refer to DEFLOGMAN Part 2 Volume 10). Accordingly, it is imperative that sound and cost-effective CM practices be implemented by the Contractor.

The CMP (defined by DID-CM-MGT-CMP) is to identify the standard(s) used to define CM practices for the Contract. In keeping with the *ASDEFCON* principle of using Contractor processes where appropriate, the draft SOW does not specify a CM standard (although acceptable standards may be identified via a note).

Any alternative standard proposed by a tenderer should be one that Defence recognises as appropriate. DEFLOGMAN Part 2 Volume 10 Chapter 4 lists CM standards and their application, while ADF regulators may provide further direction.

The agreed CM standard(s) need to be reflected in the Contract, through Approval of the Contractor's CMP. The Contractor may wish to use a mix of different standards for various applications, and while such flexibility should be allowed, the Commonwealth will require a clear understanding of which parts from which standards are used and, importantly, that the combination of all elements of the CM system are harmonised.

Drafters should note that tenderers are to describe their approach to CM within the 'Overall Strategy', as part of their 'Project Strategy' (TDR E-1). A draft CMP may be developed during pre-contract work, if applicable.

Clause 6.1.3 requires the Contractor to integrate Subcontractors into its CM activities in order to ensure that a coherent approach to CM is adopted for all Contract work. This does not require the Contractor and Subcontractors to have the same CM practices but their practices must be consistent. DID-CM-MGT-CMP also requires that the CMP explain how a coherent approach to CM will be achieved, including the approach for:

a. Configuration Identification, to ensure that all parties will be using consistent terminology for all relevant items of equipment and documentation;

b. Configuration Control, to ensure that Configuration Baselines are implemented, documented, and that changes are appropriately managed;

c. Configuration Status Accounting (CSA), to ensure that the complete status of the system configuration can be determined at any time; and

d. Configuration Audits, to provide assurance that integration of the system is delivering the required functionality, corresponding to the system design.

Drafters should recognise that certain CM standards, such as EIA-836, *Consensus Standards for Configuration Management Data Exchange and Interoperability*, implement standard formats for the exchange of CM data. As such, drafters should ensure that CM clauses and the Technical Data requirements (under clause 5.3.3)

[8] "Properly resourced" includes competent, trained individuals, and effective, efficient tools.

are consistent. Annex A to DEFLOGMAN Part 2 Volume 10 Chapter 4 discusses Industry Standards.

Drafter's Action: Clause 6.1 is to be included in the RFT without alteration. Prior to Contract signature, drafters may include agreed CM standards in the Contract, or otherwise rely on Approval of the Contractor's CMP under the Contract.

Drafters may tailor DID–CM-MGT-CMP to reflect particular program and the policy requirements, or for standardisation with Defence CMPs.

Related Clauses: Glossary, for definitions of all terms relating to CM.

All other clauses under clause 6.

TDR E-1, Overall Strategy

DID-CM-MGT-CMP specifies the content requirements for the CMP.

Further Reading: EIA-649 *National Consensus Standard for Configuration Management*

EIA-836 *National Consensus Standards for Configuration Management Data Exchange and Interoperability*

DMH (ENG) 12-2-002 *Configuration Management Handbook*

6.2 Master Record Index

Status: Optional. To be included if the support agency or ADF regulatory / assurance authority requires the delivery of a Master Record Index (MRI).

Purpose: To require the Contractor to develop an MRI.

Policy: Refer to guidance for clause 6.1.

Guidance: The MRI is a consolidated index of all design data and records for a system. The concept of an MRI is typically employed on aviation-related systems but is gradually being superseded by the CSA system. For non-aviation projects, an MRI is not typically required. If not required, the clause can be replaced with 'Not used'.

Drafters should recognise that there would be links between the requirements for an MRI and the data listed in the TDL for delivery to the Commonwealth. As such, drafters should ensure consistency between MRI and TDL requirements.

Drafter's Action: This clause may be tailored in conjunction with clause 6.6, Configuration Status Accounting. The CSA record may provide a more complete framework for managing design baselines, and the MRI may be derived from the CSA record.

Related Clauses: All other clauses under clause 6.

DID-ILS-TDATA-MTDI includes TDL requirements.

DID-CM-DATA-MRI provides the content requirements for the MRI.

DID-CM-DATA-CSAR provides the content requirements for the CSA Report.

Further Reading: Nil

6.3 Configuration Identification

Status: Core

Purpose: To require the Contractor to identify all Configuration Items (CIs) that constitute parts of the Mission System and Support System Components.

Policy: Refer to guidance for clause 6.1.

Guidance: The purpose of Configuration Identification is to incrementally establish and maintain a definitive basis for control and status accounting for a CI throughout its life cycle. The Configuration Identification process includes:

a. selection of CIs (noting that the list of CIs should be documented in the CMP and, therefore, be subject to Approval by the Commonwealth);

b. defining the Configuration Baselines for the CIs and the configuration documentation required (noting that clause 6.3 requires both the system components (clause 6.3.1) and the documentation for those components (clause 6.3.2) to be uniquely identified);

c. assigning identifiers to CIs and associated configuration documentation, and marking or labelling CIs and documentation with the applicable identifier enables correlation between the CI, configuration documentation, and other associated data; and

d. establishing a release system for configuration documentation.

The purpose of clause 6.3 is to ensure that the Contractor establishes a process for Configuration Identification, as the first essential step in the CM process.

Clause 6.3 describes requirements for Configuration Identification. Further clauses may be added if the Contractor is to conform to an existing Commonwealth system for CM, which may occur in projects that implement modifications to existing platforms with established CM systems.

Drafter's Action: If existing practices for Configuration Identification need to be mandated on the Contractor, clause 6.3 is to be amended to refer to these practices. Otherwise, clause 6.3 is to be included in the RFT without alteration.

Related Clauses: Glossary, for the definitions of all terms relating to CM.

All other clauses under clause 6.

Clause 4.5.1, Technical Documentation Tree

Further Reading: Nil

6.4 Configuration Baselines

Status: Core

Purpose: To ensure that the Contractor clearly identifies a set of Configuration Baselines that define the design of the Mission System and for developmental Support System Components.

Policy: Refer to guidance for clause 6.1.

Guidance: From EIA-649: "A baseline identifies an agreed-to description of the attributes of a product at a point in time and provides a known configuration to which changes are addressed". CM normally employs three types of Configuration Baselines – the Functional Baseline (FBL), the Allocated Baseline (ABL), and the Product Baseline (PBL). This provides for the progressive definition and documentation of the requirements and design information describing the various CIs designated for a system (for both the Mission System and the Support System).

The FBL specifies the functional requirements for a product and is defined by the approved functional configuration documentation (FCD). The FCD typically takes the form of system specifications plus other applicable documentation (for example, Interface Requirements Specifications and Interface Control Documents). The Contractor is responsible for generating the FCD required for the FBLs for the Mission System and developmental Support System Components.

The ABL specifies the 'design to' requirements for a product and is defined by the approved allocated configuration documentation (ACD). The ACD typically includes documentation describing a CI's functional, performance, interoperability, and interface requirements that are allocated from a system or higher-level CI; interface requirements of interfacing CIs; and the verifications required to confirm the achievement of those specified requirements. The Contractor is responsible for generating the ACD for the Mission System and Support System Components.

The PBL describes the 'as built' product and is defined by the approved product configuration documentation (PCD). The product baseline of a CI may refer to the physical equipment and loaded / embedded software. The PCD typically includes the combined performance / design documentation used for the production or procurement of the CI. The PCD incorporates the ACD describing a CI's functional, performance, interoperability and interface requirements and the verifications required to confirm the achievement of those specified requirements. The PCD also includes such additional design documentation, ranging from 'form and fit' information to a complete design disclosure package, as is deemed necessary for the acquisition program. The Contractor is responsible for generating the PCD for the Mission System and Support System Components.

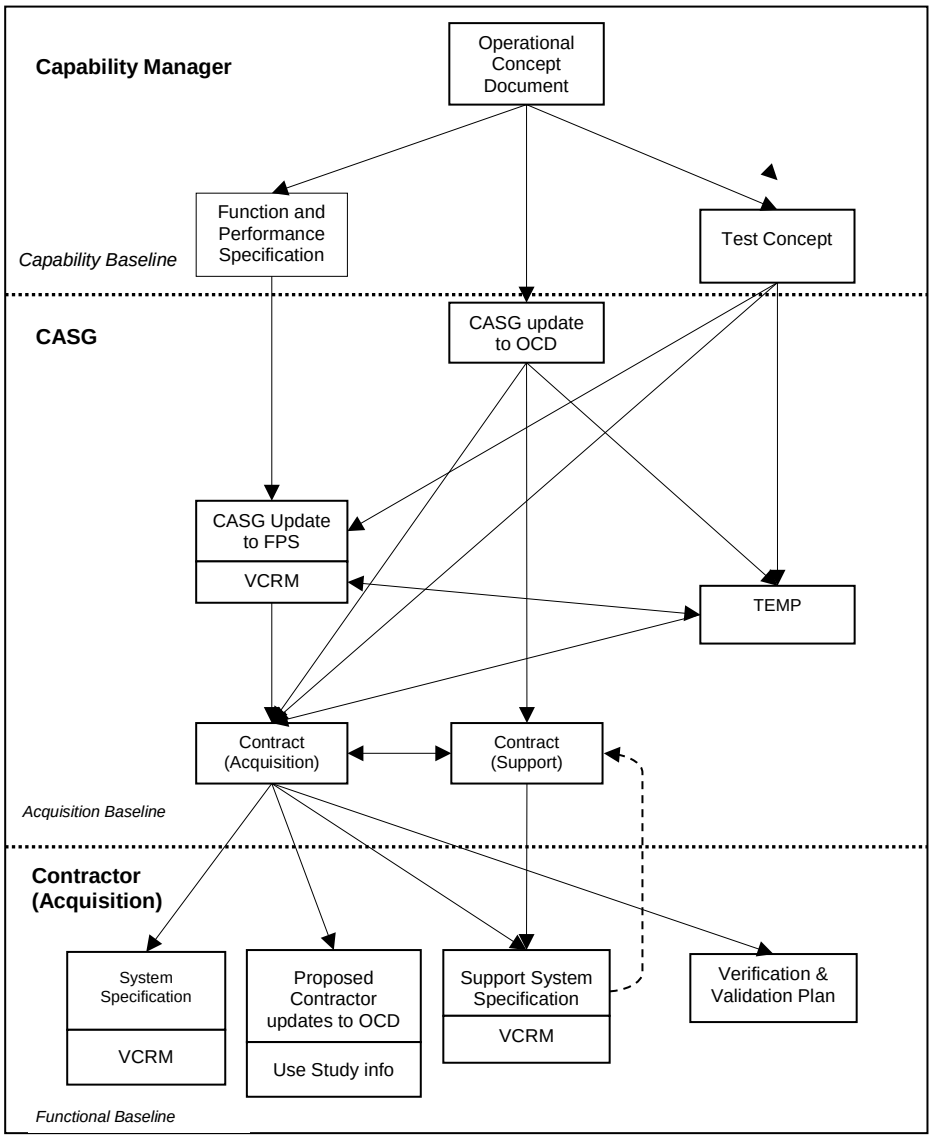


Figure 10 – Relationship between the FBL and Pre-Contract Baselines

Note that the FBL, ABL and PBL are typically constructed following Contract award. Other baselines may be struck prior to Contract award. Figure 10 depicts two of these baselines, known as the Capability Baseline and the Acquisition Baseline.

The Contractor should recommend the types of specifications and associated documentation for baselines to a level of detail commensurate with in-service support requirements and procurement strategies (eg, including the integration of GFE and off-the-shelf items); however, the actual specifications provided should be those ultimately ordered in the Contract.

The Contractor should generate the configuration documentation required for the Configuration Baselines specified in the Contract. The FCD, ACD and PCD need to be mutually consistent and compatible. Each succeeding level of configuration documentation from FCD to ACD to PCD should be traceable to, and be a detailed extension of, its predecessor(s).

The Contractor may also develop interim PBLs, as per clause 6.4.2. Interim PBLs are not a requirement of the Contract but the ability for the Commonwealth to witness associated Configuration Audits and Integration-V&V Activities can help to inform higher level PCAs.

Depending on the complexity of design, different baselines may exist at multiple levels in a design (eg, baselines at the system level, sub-system level, component level, and part level of the design). The levels at which baselines are to be established should be clearly articulated in the CMP and be consistent with the strategy for the identification of CIs and the level of design control to be applied.

The Contractor's CSA system needs to be able to track the documentation set comprising each baseline, at all levels at which baselines are to be established, together with the revision status and history of that baseline documentation.

In keeping with the principle of CAID, the Commonwealth is primarily interested in maintaining control over:

a. the FBL, as this represents the requirements against which Verification will be conducted; and

b. the PBL, because it has significant implications for the support and LCC of the system (both Mission System and Support System).

Although the Commonwealth is primarily interested in the FBL and PBL for the Mission System and Support System, the ABL is also of interest because it defines how system requirements are converted into specific physical design requirements. A review of the ACD will provide the Commonwealth with assurance that the specified requirements are being addressed by the Contractor's physical design. Nevertheless, the Commonwealth does not maintain control over the ABL because this would transfer risk to the Commonwealth.

The FCD for the FBL and the PCD for the PBL are critical as they provide the basis for FCAs and PCAs conducted during the AV&V of the Mission System and Support System.

Drafter's Action: Clause 6.4.1 may be modified for Contract-specific strategies; for example, delivery of functionality in multiple increments may require baselines for each increment. Other baselines per-platform or for a production first article may be necessary.

Related Clauses: All other clauses within clause 6.

The FBL is referenced in the following SOW clauses: 4.2.2, 5.1.2.3, 5.2.2, 5.2.3, 5.2.4, 5.2.5, 5.2.6, 5.2.7, 5.2.8, 6.5.2, 6.5.3, 6.5.6, 7.1.3, 7.2.2, and 7.2.3

The PBL is referenced in the following SOW clauses: 6.5.2, 6.5.4, 6.5.5 and 6.5.6.

Further Reading: EIA-649 *National Consensus Standard for Configuration Management*

DMH (ENG) 12-2-002 *Configuration Management Handbook*

6.5 Configuration Control

Status: Core

Purpose: To ensure that all formal Configuration Baselines are managed and controlled and that the Commonwealth has the appropriate input into any significant changes.

Policy: Refer to clause 6.1.

Guidance: Configuration Control is the systematic proposal, justification, evaluation, coordination, approval or disapproval of proposed changes, and the implementation

of all approved changes, in the configuration of a CI after establishment of the Configuration Baseline(s) for the CI.

The Configuration Control program established by the Contractor should:

a. ensure effective control of all CIs and their approved configuration documentation (eg, release of only approved configuration changes into CIs and their related configuration documentation);

b. establish effective change procedures for use during the design, development and production of the item including, as a minimum, procedures for Major Changes, Minor Changes, and Deviations / variances; and

c. ensure implementation and Verification of approved changes.

The procedures for Configuration Control are to be described in the CMP, for Approval by the Commonwealth.

A clear understanding should be displayed by the Contractor as to when and why Commonwealth involvement is required as part of the Configuration Control process (eg, in the case of a Major Change to an existing system, the Configuration Control process should clearly articulate the relationship between Configuration Control activities under the Contract and the Commonwealth's Configuration Control processes for the system being modified).

In clause 6.5, Commonwealth involvement (for most programs) is required if there is a change to an FBL, as the FBL represents Commonwealth requirements through the specifications. A Major Change to the PBL, after the PCA, also affects the function of applicable CIs and may affect the FBL. As specifications for the FBL are 'on contract' some changes will require a CCP.

Drafter's Action: Configuration Control practices may, depending upon the support concept, migrate into the in-service phase and in-service Configuration Control requirements may influence these clauses. Strategies for Configuration Control during acquisition should allow for a clean migration to the CM system used in the support phase.

Related Clauses: All other clauses under clause 6.

Further Reading: Nil

6.6 Configuration Status Accounting

Status: Core

Purpose: To ensure that the Contractor records and reports information on Mission System and Support System designated CIs in an effective and efficient manner.

Policy: DEFLOGMAN Part 2 Volume 10 Chapter 4, *Defence Policy on Configuration Management*

DEFLOGMAN Part 2 Volume 10 Chapter 5, *Defence Policy on Acquisition and Management of Technical Data*

DMI (ENG) 12-2-002, *Configuration Management*

Guidance: Clause 6.6.1 requires the Contractor to establish and maintain an effective Configuration Status Accounting (CSA) system to meet the needs of the Contract. In general, the CSA system should:

a. identify the current approved configuration documentation and identification number associated with each CI;

b. record and report the status of Major Changes and Minor Changes from initial proposal to final approval and implementation status;

c. record and report the results of Configuration Audits, including the status and final disposition of identified discrepancies;

d. record and report the status of all critical and major Applications for Deviations / requests for variance that affect the configuration of a CI;

e. provide traceability of all Major Changes and Minor Changes from the original baselined configuration documentation of each CI; and

f. report the effectivity and installation status of configuration changes to all CIs at all locations.

Electronic transfer of configuration data is receiving worldwide attention; however, there is currently no single CSA process or CSA record used throughout Defence and electronic transfers of CM data need to be addressed on a case-by-case basis.

Clause 6.6 includes three options to access and transfer CSA data, and more than one option may be selected. The first option, clauses 6.6.2 and 6.6.3, can be tailored for Commonwealth access to the CSA system via a DMS or for Resident Personnel with access to the Contractor's IT system. The second option, clause 6.6.4, allows delivery of discrete CSA reports (defined by DID-CM-DATA-CSAR and preferably in electronic format). Both options may be included; for example, to provide the Commonwealth project office with access via the DMS and separate CSA reports provided to other stakeholders when preparing for specific MSRs.

The third option, clauses 6.6.5 and 6.6.6, allows for electronic transfer of CSA system data. This option could be used during the Contract (eg, if live DMS access wasn't available) and/or at the end of the Contract to transfer CM data to a Defence CSA system. This option requires a DID for CSA system data exchange to be developed that, for practical reasons, may need to be finalised with the Contractor.

Drafter's Action: Clause 6.6.1 may be included in the RFT without alteration. Subsequent optional clauses are to be selected and tailored to the needs of the Contract. Drafters should also consider standards for the interchange of CM data, such as EIA-836..

Related Clauses: All other subclauses under clause 6.

Clause 2.3, Data Management System

Attachment L, Resident Personnel

DID-CM-DATA-CSAR provides the content requirements for the CSA Report.

Further Reading: DMH (ENG) 12-2-002 *Configuration Management Handbook*, Section 2.4, *Configuration Status Accounting*

6.7 Configuration Audits

Status: Core

Purpose: To ensure that the Contractor conducts both Functional Configuration Audits (FCAs) and Physical Configuration Audits (PCAs) on each Mission System product and Support System Component prior to Acceptance of the applicable CI.

Policy: Refer to clause 6.1.

Guidance: Configuration Audits consist of FCAs and PCAs, and are performed before establishing the PBL for an item.

An FCA is the formal examination of functional characteristics of a CI (ie, quantitative performance parameters and design constraints, including operational and logistic parameters and their respective tolerances) prior to Acceptance, to Verify that the item has achieved the requirements specified in its FCD. The FCA involves examination of test results from the AV&V process.

A PCA is the formal examination of the 'as-built' configuration or physical characteristics of a CI (ie, quantitative and qualitative expressions of material features, such as composition, dimensions, finishes, form, fit, and their respective tolerances) against its technical documentation to establish or verify the CI's PBL.

The Commonwealth's intent with respect to Configuration Audits is for an FCA and PCA to be conducted on each Mission System product or Support System Component (ie, if the system is delivered as a single element, then the FCA and PCA will only be on that element) prior to Acceptance.

Note that, in the case of the Support System Components, FCAs and PCAs should ensure that components correctly interface with each other and the existing support infrastructure.

FCAs and PCAs are MSRs conducted in accordance with the Approved SRP. The entry criteria, exit criteria and objectives for FCA and PCA are to include those defined in MSR-CHECKLIST-FCA and MSR-CHECKLIST-PCA, respectively.

Drafter's Action: Drafters are to review the checklists for FCA and PCA to ensure that these checklists are aligned to the requirements of the Contract.

Drafters are to identify whether or not specific FCA and PCA MSRs should be identified as Stop Payment Milestones in accordance with clause 7.9 of the COC.

Related Clauses: All other clauses within clause 6.

Clause 4.1.5, Conduct of System Reviews

Clause 7.2, Acceptance Verification and Validation

Clause 7.9 of the COC, Stop Payment

MSR-CHECKLIST-FCA defines the entry, review and exit criteria for the FCA.

MSR-CHECKLIST-PCA defines the entry, review and exit criteria for the PCA.

Annex C to Attachment B of the Contract includes Milestone entry and exit criteria.

Further Reading: DMH (ENG) 12-2-001 *Materiel System Review Guide*

EIA-632 *Processes for Engineering a System*

7. VERIFICATION AND VALIDATION

7.1 V&V Management

Status: Core

Purpose: To require the Contractor to implement appropriate practices for the management of the Verification and Validation (V&V) program.

Policy: CASG Policy (E&T) 12-5-001, *Verification and Validation in CASG*

DI(G) OPS 45-2, *Capability Acceptance Into Operational Service*

Guidance: The V&V philosophy adopted by *ASDEFCON (Strategic Materiel)* involves:

a. an integrated V&V approach where the Mission System and Support System are considered concurrently;

b. progressive Verification, for the duration of the Contract, to manage risks to the Mission System and Support System in meeting specified requirements; and

c. Validation for Acceptance purposes, in a real or synthetic operational environment, to the extent necessary to demonstrate an acceptable level of risk to the Commonwealth.

A technical risk assessment of the design effort for the Contract will guide the scope and depth of the V&V activities required. The project TEMP will also provide guidance on the approach for V&V for the total project (ie, including acceptance into operational service), under which the Contract is a major component.

Drafter's Action: Refer to subclauses.

Related Clauses: Clause 7.2, Acceptance Verification and Validation

Clause 6.8 of the COC, Acceptance

Further Reading: CASG Handbook (E&T) 12-5-001, *Verification and Validation Guide*

DMSP (ENG) 12-5-001, *Verification and Validation Risk Checklist*

7.1.1 General

Status: Core

Purpose: To establish the overall objectives for the V&V program.

Policy: Refer to clause 7.1.

Guidance: Clause 7.1.1 identifies the objectives for the V&V program, including an integrated approach for Mission System and Support System V&V, and employing a strategy of progressive Verification.

Progressive Verification may encompass a range of activities including MSRs, specialist program reviews, integration Verification / Developmental Verification[9] activities, and Acceptance Verification. In some circumstances, Verification may involve testing operational prototypes to evaluate the impact of the operational environment on the evolving design prior to the final design being completed.

The concept of progressive Verification is to ensure that the Commonwealth and the Contractor maintain appropriate oversight of the evolving design, so that risks are resolved as early as possible. The potential benefit of a progressive review approach is that a problem identified early in the design cycle will be less costly to correct than one identified late in the design cycle (eg, correcting a problem during the requirements-validation phase may avoid the substantial cost of modifications to the system after it has been delivered). This concept is illustrated in Figure 11.

[9] Also known as Developmental Test and Evaluation (DT&E).

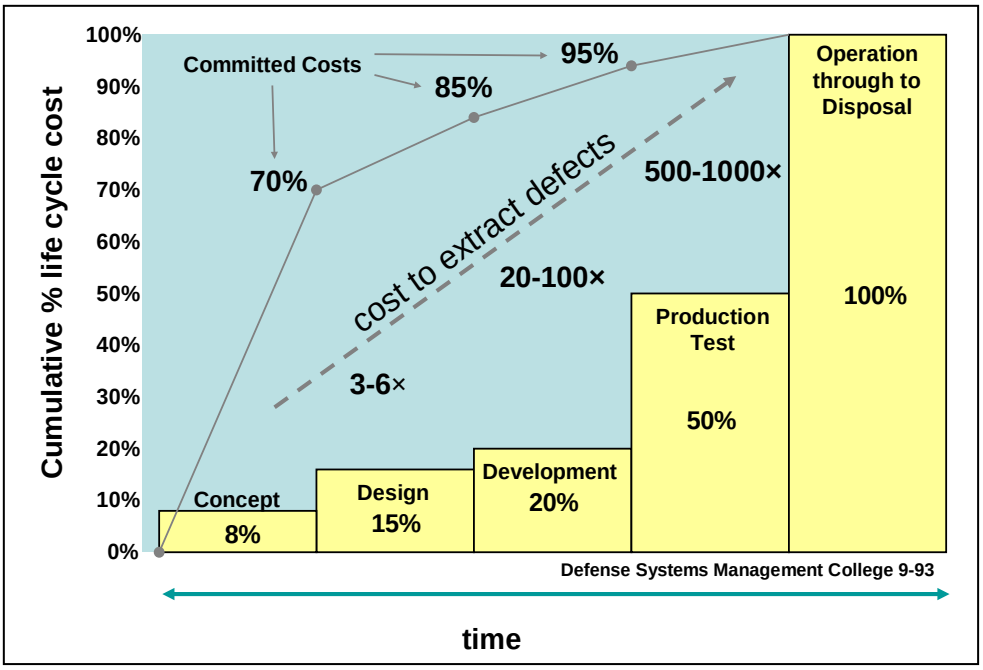


Figure 11 – Relative Cost through a Project Lifecycle

Drafter's Action: Clause 7.1.1 is to be included in the RFT without alteration.

Related Clauses: All other clauses under clause 7.

Further Reading: DMH (ENG) 12-5-001 *Materiel Verification and Validation Guide*

7.1.2 Verification and Validation Plan

Status: Core

Purpose: To require the Contractor to develop and deliver a V&VP for Approval, and to manage the V&V program in accordance with the Approved V&VP.

Policy: Refer to clause 7.1.

Guidance: The V&VP is used by the Contractor to provide overall direction to the conduct of the V&V program. The V&VP is also used by the Commonwealth for visibility of the Contractor's V&V planning and to provide input into Commonwealth planning for related activities.

The V&VP describes the whole of the V&V program under the Contract. Care should be taken to coordinate activities that perform a V&V function that are also part of another program (eg, FCAs and PCAs are both V&V and CM activities, but are detailed as part of the CM program). In such circumstances, the V&VP should summarise the activities and refer to the other management plan for further details.

Drafter's Action: Clause 7.1.2 is to be included in the RFT without alteration.

Related Clauses: Clause 4.1.5, Conduct of System Reviews

Clause 6.7, Configuration Audits

TDR E-1.5, Integration, Verification and Validation Strategy

DID-V&V-MGT-V&VP defines the content requirements for the V&VP.

Further Reading: Nil

7.1.3 Verification Cross Reference Matrix

Status: Core

Purpose: To require the Contractor to define the methods by which specified requirements (at multiple levels in the design) are to be Verified.

Policy: Refer to guidance for clause 7.1.

Guidance: The VCRM is a table that cross-references specified requirements to the methods by which those requirements will be Verified. The minimum contents ('table columns' or 'data fields') for a VCRM are defined in DID-V&V-DEF-VCRM. A VCRM may be associated with a specification at any level in a specification hierarchy, so care is needed to ensure that the context of application within that hierarchy is clearly enunciated. SOW clauses are specifically targeted at those specifications that define the Mission System FBL and the Support System FBL.

The VCRM has two distinct roles under the Contract, namely to capture:

a. the Verification requirements (eg, proposed method(s) of Verification and the AV&V phase(s) in which the proposed method(s) will be applied); and

b. the Verification results (eg, pass/fail with reference to the test report and associated analyses, if required).

The first part of the VCRM is normally completed during system definition activities, culminating at SDR (ie, the Verification requirements form part of the FBL). The second part is completed progressively as AV&V phases are undertaken.

The FPS may include explicit Verification requirements for system-level requirements (potentially presented like a VCRM). In any case, the VCRM should be examined for consistency with those Verification requirements and other requirements in the FPS. Traceability between FPS Verification requirements and the VCRM should be documented by the Contractor in the RTM. Any differences should be negotiated with the Contractor to ensure that all FPS Verification requirements are coherently addressed.

One potential problem when a VCRM is aligned to lower-level specifications (eg, subsystem by subsystem) is the loss of the high-level view that ensures all component systems of the Mission System operate effectively together (eg, communication systems do not adversely interfere with navigation systems). To avoid this, the Commonwealth should ensure that the FPS contains high-level, whole-of-system Verification requirements that are carried through into the Contractor's VCRM. Note that consideration should be given to the Validation of the integrated Mission System and Support System solution under clause 7.2.4.

Drafter's Action: Clause 7.1.3 is to be included in the RFT without alteration.

Related Clauses: Clause 4.2.2, System Requirements Validation, for development of the Mission System FBL.

Clause 5.2.2, Support System Definition, for development of the Support System FBL.

Clause 6.4, Configuration Baselines

Clause 7.1.4, Previous V&V Results

Clause 7.2.3, Acceptance Verification

Clause 7.2.4, Acceptance Validation

DID-V&V-DEF-VCRM defines the content requirements for the VCRM.

Further Reading: CASG Handbook (E&T) 12-5-001, *Materiel Verification and Validation Guide*

7.1.4 Previous V&V Results

Status: Optional

Purpose: To enable a reduction in the cost and schedule of the V&V program by using the results from previous V&V activities that are external to the Contract.

Policy: Refer to clause 7.1.

Guidance: V&V provides assurance that the risk of Supplies not meeting requirements has been reduced to an acceptable level. However, particular V&V activities can be time-consuming and expensive. Prior V&V results, if suitably representative, offer a level of assurance while reducing the V&V effort and overall schedule.

Clause 7.1.4 allows the Contractor to claim the results from previously conducted Verification activities as precluding the requirement to conduct further specific Verification activities. A limiting factor is that for prior results to be suitable, they must be representative of the new system in terms of configuration and role, and must be operated under similar conditions in a similar environment. DID-V&V-DEF-PV&VRP defines requirements for the Contractor's Previous V&V Results Package (PV&VRP). The VCRM will identify the individual requirements where prior results are used.

Drafter's Action: If due to the significant level of development required, the Commonwealth is certain that no prior results will be suitable for the V&V program, then the clause can be replaced with 'Not used'. Otherwise, clause 7.1.3 should be included in the RFT without alteration.

Related Clauses: Clause 7.2.3, Acceptance Verification

Clause 7.2.4, Acceptance Validation

DID-V&V-DEF-PV&VRP defines the content requirements for the PV&VRP.

DID-V&V-DEF-VCRM defines the content requirements for the VCRM.

Further Reading: CASG Handbook (E&T) 12-5-001, *Verification and Validation Guide*

7.1.5 Test Readiness Reviews

Status: Core

Purpose: To require a formal review to be conducted prior to commencing a formal AV&V activity, to ensure that all parties are prepared and that it is appropriate to proceed.

Policy: Refer to clause 7.1.

Guidance: Prior to conducting formal test activity (ie, for System Acceptance) a Test Readiness Review (TRR) should be conducted. A TRR is an MSR held to assure the Commonwealth that all resources and procedures are, or will be, ready to commence testing (eg, test plans are prepared, Contractor and Commonwealth resources are available, and all test procedures are agreed).

A significant issue in preparing for a TRR is the readiness of any Commonwealth resources. The Commonwealth may provide substantial resources for AV&V such as firing ranges and other test facilities, and in-service systems needed to Verify interoperability, interfaces, and transportation, as applicable.

If Commonwealth Personnel participate in testing, rules are required to establish when a Failure identified is not attributable to the system but to the Commonwealth person operating the system. Attribution is important as Contractor Training provided to Commonwealth Personnel can be Validated during system Verification.

The requirement for Commonwealth resources should be included, at least broadly, in the V&VP with more specific details in the Acceptance Test Plan (ATP) for the V&V phase, and in the applicable Acceptance Test Procedures (ATProcs). Resource requirements should be confirmed prior to the TRR, so that at the TRR the Commonwealth can confirm the readiness of those resources.

TRRs are conducted in accordance with the Approved SRP and the Approved V&VP. The entry and exit criteria, review items and objectives for the TRR are defined in MSR-CHECKLIST-TRR.

Depending on the program, specific TRRs may be considered and defined in the SOW and Approved V&VP. For example, Ground Test Readiness Reviews and Flight Test Readiness Reviews may be specified for aircraft. Similarly, TRRs for Factory Acceptance Test and Site Acceptance Test might be deemed appropriate. Notwithstanding, the range of specific TRRs should align with the planned scope of AV&V activities under clause 7.2. As MSR-CHECKLIST-TRR applies to a system-level TRR, consistent requirements for other specific TRRs may need to be developed (eg, during ODIA or pre-contract work).

Drafters should consider if any TRRs should be Stop Payment Milestones under clause 7.9 of the COC. Specific TRRs should also be added to the Schedule of Milestone Entry and Exit Criteria, Annex C to Attachment B of the Contract.

Drafter's Action: Drafters are to consider whether or not any specific TRRs need to be inserted into clause 7.1.5. If not, clause 7.1.5 is to be included in the RFT without alteration.

Drafters are to ensure that the appropriate versions of the checklists for the system-level TRRs and any specific TRRs are inserted into Annex D.

Drafters are to identify whether or not specific TRRs should be identified as Stop Payment Milestones in accordance with clause 7.9 of the COC.

Related Clauses: Clause 4.1.5, Conduct of System Reviews

Clause 7.2, Acceptance Verification and Validation

Clause 7.9 of the draft COC, Stop Payment

MSR-CHECKLIST-TRR defines the entry, review and exit criteria for the system-level TRR.

Annex C to Attachment B, Schedule of Milestone Entry and Exit Criteria.

Further Reading: DMH (ENG) 12-2-001, *Materiel System Review Guide*

7.1.6 Commonwealth Involvement in AV&V

Status: Core

Purpose: To ensure that Commonwealth oversight of AV&V activities is catered for.

Policy: Refer to guidance for clause 7.1.

Guidance: The onus is on the Contractor to prove to the Commonwealth that the delivered systems meet the specified requirements. It is not recommended that the Commonwealth perform Verification activities because this may transfer the burden of proof away from the Contractor. However, witnessing Verification activities provides a greater level of confidence in the test activity and the reported results.

In many cases, Commonwealth Personnel will participate in Verification activities (eg, where military personnel, trained by the Contractor, are required to operate and/or support systems being tested). These personnel are resources for the test activity and should be identified in the relevant test plans and procedures.

Clauses 7.1.6.1 to 7.1.6.3 require that the Contractor to invite the Commonwealth to witness V&V activities where results will be used as evidence for the Acceptance of Supplies. The Commonwealth Representative has a choice to witness the V&V activity, send a representative, or to not witness an activity. The choice is often based on the level of risk in the requirements that an AV&V activity intends to test, and the resources available to witness many different AV&V activities.

Clause 7.1.6.4 requires the Contractor to provide advanced notice for individual AV&V activities, which should be consistent with the CMS and plans discussed at

the TRR. The clause specifies 20 Working Days; however, drafters may modify the clause to allow longer timeframes for testing performed overseas.

In developmental programs the Commonwealth may wish to attend high-risk DT&E activities. This enables the Commonwealth to witness the progress being made and to assess risks to the development and integration schedules. Therefore, clauses 7.1.6.5 and 7.1.6.6 require that the Contractor use reasonable endeavours to facilitate Commonwealth requests to attend these activities.

Drafter's Action: Clause 7.1.6 is to be included in the RFT without alteration. Prior to ED, the Commonwealth and preferred tenderer should consider the locations for AV&V and, if required, change clause 7.1.6.4 to include a longer notification period for testing to be conducted overseas or in remote locations.

Related Clauses: Clause 7.2, Acceptance Verification and Validation

Further Reading: Nil

7.1.7 Failure Reporting and Analysis

Status: Core

Purpose: To require that all Failures identified during AV&V be reported and analysed by the Contractor.

Policy: Refer to guidance for clause 7.1.

DMSP (ENG) 12-8-061, *Software Problem Reporting and Resolution*

Guidance: Failure Reporting and Analysis is an essential part of V&V. SOW clause 7.1.7 requires the Contractor to implement a Problem Resolution System to record all Failures, classify them according to severity, and propose corrective actions. Critical to this activity is the meaning of Failure and of Failure Severity. The term 'Failure' is defined in the Glossary as:

> "the inability of a system or component to perform its required functions within specified performance requirements. The fault tolerance discipline distinguishes between a human action (a mistake), its manifestation (a hardware or software fault), the result of the fault (a failure), and the amount by which the result is incorrect (the error)."

Clause 7.1.7.1 defines requirements for a Problem Resolution System and includes a table listing the various Failure Severity levels. Depending on the systems being acquired, this table may be improved with system-specific definitions.

The Problem Resolution System is to record the system configuration and relevant conditions, as any investigation will consider the conditions under which the Failure occurred. This is because overstress test conditions, beyond the use conditions specified, may invalidate the test results. Accurate configuration details also enable appropriate regression testing to be identified following a design change.

Note that it is insufficient to record a Defect and assume that the most apparent cause of Failure is correct. A root cause analysis should be conducted, in accordance with the Approved V&VP, to identify the actual cause of the apparent Failure.

The Problem Resolution System includes details of corrective actions and the method for Verifying that the applicable requirements can be met following corrective action.

Clause 7.1.7 requires on-going Commonwealth access to the Problem Resolution System, preferably through the DMS (see clause 2.3). The number and severity of outstanding Failures applicable to a system must also be presented to the System Acceptance Audit (SAA) required under clause 8.5.

MSR-CHECKLIST-SAA defines exit criteria for the SAA, including the maximum acceptable number of unresolved Failures in each of the Failure Severity

classifications identified in clause 7.1.7. Drafters must update this checklist with the acceptable numbers of Failures (noting that the default position is for no failures categorised as either Failure Severity 1 or Failure Severity 2).

Drafter's Action: Clause 7.1.7 is to be included in the RFT without alteration, unless additional system-specific definitions of Failure Severity are provided for context and clarity.

Related Clauses: Clause 2.3, Data Management System

Clause 7.1.8, Regression Testing

Clause 7.2, Acceptance Verification and Validation

Clause 6.2.10 of DID-V&V-MGT-V&VP defines the need to document the Problem Resolution System within the V&VP.

Clause 8.5, System Acceptance Audit

Further Reading: DMH (ENG) 12-2-006, *Root Cause Analysis Handbook*

7.1.8 Regression Testing

Status: Core

Purpose: Requires that corrective actions implemented by the Contractor to address Failures found during V&V, be Verified to ensure the effectiveness of the corrective actions.

Policy: Refer to guidance for clause 7.1.

Guidance: Any subsequent changes to a design, to rectify a Defect / identified Failure, need to be re-tested to prove that the design change was effective. This is the objective of regression testing. Care needs to be taken when determining the scope of regression testing to ensure that testing encompasses any systems that have a dependency on the area rectified by the design change. Configuration Management of items under Verification and through any consequent design change and re-testing is a key factor in ensuring the integrity of regression testing.

Drafter's Action: Clause 7.1.8 is to be included in the RFT without alteration.

Related Clauses: Clause 7.2, Acceptance Verification and Validation

Further Reading: Nil

7.2 Acceptance Verification and Validation

Purpose: To specify the program of AV&V activities to ensure that the Mission System and Support System developed by the Contractor are fit for purpose.

Policy: Refer to guidance for clause 7.1.

Guidance: AV&V is undertaken for the purpose of collecting evidence to support the Acceptance of Supplies under clause 6.8 of the COC. Acceptance relates to individual Supplies.

Two fundamental groups of activities are performed before systems can be formally Accepted. The first is the Verification of the Mission System and Support System against their respective Functional Baselines (Acceptance Verification); the second is Validation that these systems perform when operated in actual use environments or agreed representations of the actual use environment (Acceptance Validation).

Acceptance Test and Evaluation (AT&E) is one process by which evidence for the purpose of Acceptance Verification and Acceptance Validation may be obtained. Other processes include design reviews, audits, modelling and simulation.

A special form of Acceptance, termed 'System Acceptance', occurs when each Mission System (or set of Mission Systems) is offered for Acceptance. System Acceptance occurs after a successful SAA, which is defined through clause 8.5.

AV&V activities under clause 7.2 have been drafted to accord with Acceptance provisions for both the Mission System and Support System. Any amendments to clause 7.2 must continue to be aligned with the Acceptance provisions.

Drafter's Action: Refer to subclauses.

Related Clauses: Clause 7.1, V&V Management

Clause 6.8 of the COC, Acceptance

Further Reading: CASG Handbook (E&T) 12-5-001, *Verification and Validation Guide*

DMSP (ENG) 12-5-001 *Verification and Validation Risk Checklist*

7.2.1 General

Status: Core

Purpose: To define the conditions under which AV&V of the Mission System(s) and Support System are to occur and to require the Contractor to ensure that the test environment and equipment meet the requirements for AV&V.

Policy: Refer to guidance for clause 7.2.

Guidance: Clause 7.2.1.1 requires the Contractor to conduct AV&V activities on products of the same configuration as those offered for Acceptance. This is important given the complexity of systems, especially where minor changes in Software may result in quite different behaviour. Notwithstanding, the clause allows the Commonwealth Representative to agree to an alternative approach.

All test environments and test equipment to be used during the V&V phases are to be controlled and assessed to confirm that they will meet their objectives when used in the program. This includes the straightforward actions, such as the calibration of test equipment, and the need to evaluate more elaborate models used for V&V (eg, underwater propagation models used to evaluate a sonar system). If the models were well-established and known to be valid, then they might be evaluated by reference to Commonwealth subject matter experts or an IV&V agent. If the models are relatively new or developed specifically for the project, then they might need further scrutiny and potential supplementation by real world trials (ie, as part of the Acceptance Validation under clause 7.2.4). Drafters need to consider the time and resources for the Commonwealth to assess the CIs, test environment and resources, and insert the details in clause 7.2.1.3.

Clause 7.2.1.4 requires the Contractor to maintain a log of all relevant activities during the test process, including any changes to the configuration of items being tested (including from maintenance) and deviation from the Approved ATProcs. The logs are delivered as part of the ATRs (refer DID-V&V-TST-ATREP).

Due to the complexity of the systems acquired and the significant time and effort required to conduct a comprehensive V&V program, the likelihood of completing a V&V program without rework is low but a complete retest would be expensive. Where a configuration change is made during the V&V program, an alternative approach is to conduct regression testing based on the knowledge of the changes implemented. This more flexible approach is included at clause 7.1.8.

Drafter's Action: Drafters may need to consider the visibility and evaluation of test equipment and environments by the Commonwealth prior to their use, and include additional requirements if necessary. Otherwise, clause 7.2.1 should be included in the RFT without alteration.

Related Clauses: Other subclauses under clause 7.2.

Further Reading: Nil

7.2.2 AV&V Phases

Status: Core

Purpose: To require the Contractor to conduct AV&V activities through a minimum number of prescribed phases.

Policy: Refer to guidance for clause 7.2.

Guidance: Clause 7.2.2 describes the number and scope of phases for the AV&V program. These may consist of a factory (or laboratory environment) Verification phase, one or more site-based phases (eg, harbour or operating base trials), and one or more operationally focussed Validation phases (eg, sea acceptance trails and deployed operations trials). Other phases could include ground and flight tests for aircraft and specialty tests such as EMI/EMC testing. Drafters are to amend clause 7.2.2 to define the relevant phases for the AV&V program.

It may be desirable to minimise the cost of V&V by progressing to a final system-level V&V phase as quickly as possible. However, the likelihood of encountering problems in complex developmental programs, and having to repeat expensive testing, is high. Accordingly, AV&V phases should be programmed to allow progressive V&V activities to build a body of evidence while reducing the risk of unnecessarily repeating Verification activities and causing delay. Draft clause 7.2.2 provides example descriptions of AV&V phases and needs to be amended by the drafter to suit the individual Contract. Applicable AV&V phases should have been identified in the project's TEMP. An outline of each phase, similar to the examples given, should be incorporated in clause 7.2.2.1.

As different tenderers may have materiel solutions at different levels of maturity, the AV&V phase descriptions may need amendment during pre-contract work. Drafters should also be aware that the Contractor's Approved V&VP will detail the AV&V and other internal V&V program phases. Additionally, an ATP is required to describe the activities for each Acceptance Verification phase (clause 7.2.3) and each Acceptance Validation phase (clause 7.2.4).

Drafters should note that optional clause 7.2.2.2 is used to clarify the term Mission System when testing a networked or segmented system. Each Mission System / segment is subject to each AV&V phase to the extent set out in the Approved V&VP and the Approved VCRM. For example, an Air Traffic system has distributed Mission Systems, and test activities would be applied to each air traffic control site (ie, segment) in that system to the extent specified.

Drafter's Action: Drafters are to amend clause 7.2.2.1 with descriptions of applicable AV&V phases. Clause 7.2.2.2 should be included or deleted as appropriate. Clause 7.2.2.3 should be retained in the RFT without alteration.

Drafters should also develop the associated Milestone criteria for each V&V Phase in Annex C to Attachment B to the draft Contract.

Related Clauses: Other subclauses of clause 7.2.

Further Reading: CASG Handbook (E&T) 12-5-001, *Verification and Validation Guide*

7.2.3 Acceptance Verification

Status: Core

Purpose: To require the Contractor to Verify that the 'as built' Mission System and Support System satisfy their specified requirements as defined by their respective FBLs.

Policy: Refer to clause 7.2.

Guidance: Clause 7.2.3 states the purpose of Acceptance Verification and specifies the documentation required for all Acceptance Verification phases. Within clause 7.2.3, subclauses may be added to capture the scope of Acceptance Verification consistent with the phases described in clause 7.2.2 (once tailored) and the systems being acquired.

Verification of the Mission System involves Verifying that each requirement in the Mission System FBL has been satisfied. Additional clauses are required to define the scope of test phases / activities for the Verification of the Mission System. Where there are multiple types of Mission System being acquired, descriptions may be needed for each type of Mission System.

Verification of the Support System should confirm that the Support System satisfies the requirements in the Support System FBL. Example descriptions for Validation activities in clauses 7.2.4.2 to 7.2.4.5 may provide some guidance for Support System Verification descriptions to be added to this clause.

Verification of Support System Components should confirm that each component satisfies its relevant specification.

Clause 7.2.3 also requires ATPs for each applicable AV&V phase, from clause 7.2.2, and for ATProcs and ATRs to be prepared for each test activity.

Drafter's Action: Existing subclauses for clause 7.2.3 may be included in the RFT without change. Additional clauses should be added define the scope of Acceptance Verification activities for the Mission System and Support System. When developing clauses, drafters need to ensure consistency with the AV&V phases in clause 7.2.2.

Related Clauses: Other clauses under clause 7.2.

DID-V&V-TST-ATPLAN defines the content requirements for ATPs.

DID-V&V-TST-ATPROC defines the content requirements for ATProcs.

DID-V&V-TST-ATREP defines the content requirements for ATRs.

DID-V&V-DEF-VCRM defines the content requirements for the VCRM.

Further Reading: CASG Handbook (E&T) 12-5-001, *Verification and Validation Guide*

7.2.4 Acceptance Validation

Status: Core

Purpose: To require the Contractor to Verify that the 'as built' Mission System and Support System satisfy their specified requirements when operated in actual use environments and when interfacing with extant in-service capabilities and systems.

Policy: Refer to clause 7.2.

Guidance: Specific clauses need to be drafted to ensure that the scope of Acceptance Validation is consistent with the project office TEMP and clause 7.2.2.

The drafter needs to incorporate requirements for Acceptance Validation of the Mission System under clause 7.2.4.1. The template includes a framework for Acceptance Validation of the Support System; however, these clauses need to be tailored to accord with the specific requirements of the project.

LSA Activities include the design of Operating Support (clause 5.2.3); however, Operating Support is not included in Support System Validation because the outputs enable the operation of a Mission System in its intended role. Therefore, Operating Support (including Support Resources) is addressed by Validating the operation of the Mission System. For example, operator manuals can be evaluated by operators following those manuals to operate the Mission System.

7.2.4.1 Mission System Validation

The purpose of this clause is to have the Contractor demonstrate that the Mission System will satisfy the Mission System FBL when operated in scenarios like those described in the OCD (Annex B to the SOW), in order to assess fitness for purpose in the actual (or simulated) operating environment.

In-contract Operational Test and Evaluation (OT&E) provides evidence for Mission System Validation, which under a contract is limited to that required for Acceptance

purposes. The Validation of other inputs into Capability, from sources outside of the Contract, are not applicable to Acceptance under the Contract.

The note to drafters highlights that Acceptance Validation should be based on the scenarios in the OCD. This approach has been included for two reasons:

a. Firstly, the OCD is attached to the Contract to define the purpose of the system; hence, it would be unreasonable and obtuse to Validate it against a different purpose (although this could be the subject of post-Contract OT&E).

b. Secondly, Contractors are understandably nervous when a Mission System is operated by Defence under semi-controlled or uncontrolled conditions. The Contractor will be reluctant to rectify design defects when there is doubt as to whether or not the system was operated (and supported) in accordance with specified requirements (eg, Contract specifications, stated operating limits, and operating and maintenance manuals).

Given the above rationale, the Commonwealth project team should ensure that Validation activities, for the purposes of Acceptance, are explicitly included in the SOW. Other considerations that may need to be addressed include:

a. Who will draft the Acceptance Validation Plan (eg, the Commonwealth with Contractor input)?

b. Who will operate the Mission System during Acceptance Validation?

c. Who will support the Mission System during Acceptance Validation?

d. How will the results be recorded?

e. How will success or failure be determined?

f. What Contractor input or support is required during Acceptance Validation?

g. How long will the Acceptance Validation phase be (noting that this needs to be factored into the Contractor's schedule leading to Acceptance)?

h. What are the relationships between Mission System Validation and Support System Validation?

i. What is the relationship between Validation and the SAA under clause 8.5?

The project office's TEMP should provide much of the input needed to draft the scope of Mission System Validation activities for this clause. The scope should also be consistent with the AV&V phases defined in clause 7.2.2.

For Supportability, this aspect of V&V would Validate that Supportability Factors, such as operational availability and the ability to deploy and perform basic repairs autonomously, would achieve requirements defined in the FPS. Validation of Mission System characteristics should be undertaken to the extent practicable (ie, some factors such as reliability cannot be Validated in a relatively short test period).

7.2.4.2 Engineering Support Effectiveness Demonstration

The purpose of this clause is for the Contractor to Validate, by demonstration, the effectiveness of the implemented Engineering Support SSCC.

The demonstration requires new Engineering Support elements to be integrated into the existing support infrastructure, meaning that the demonstration cannot commence until sufficient elements (Support Resources and Training) have been delivered and integrated into Defence and/or the relevant Contractor (Support) organisations (eg, a contractor run Software Support Facility).

This activity may include various Validation methods; for example: practical demonstration or a desktop review and analysis of operating procedures, the physical demonstration of Configuration Management tools, or a detailed review of QMS procedures for processing Deviations and modifications involving the relevant stakeholders and approval authorities. In this last example, it may not be practical to demonstrate the processing of a modification if no modifications are required;

however, the review process and acceptance by the relevant parties may be sufficient to Validate the successful transition into service of the process.

Software maintenance is an on-going development process within Engineering Support (ie, Software maintenance involves design modification, even if on a small scale). As examples, programming tools, compilers and hardware in the test program environment could be Validated by demonstration.

When tailoring clause 7.2.4.2, drafters should consider the Support Concept in the OCD, the Specifications (SOW Annex A), any changes to the Engineering Support Design clauses of SOW clause 5.2, tailored Acceptance Verification clauses, and the implementation of Software Support in SOW clause 5.3.7.

7.2.4.3 Maintenance Support Effectiveness Demonstration

The purpose of this clause is for the Contractor to Validate, by demonstration, the effectiveness of the implemented Maintenance Support SSCC.

The demonstration requires Maintenance Support elements to be integrated into the existing support infrastructure, meaning that the demonstration cannot commence until sufficient elements (Support Resources and Training) have been delivered and integrated into Defence and/or the relevant maintenance Contractor (Support) / Subcontractors (Support).

The difference between a Maintenance Support effectiveness demonstration and a Maintainability demonstration is that a Maintainability demonstration assesses the inherent maintainability of the Mission System, while a Maintenance Support effectiveness demonstration is focused on Maintenance Support as an SSCC. In practice, both Mission System Maintainability and Maintenance Support can be demonstrated through the same test activities and the Commonwealth should consider drafting clauses to achieve both.

Maintenance Support effectiveness demonstrations assess the implementation of numerous Support Resources and will be dependent on contributions from other SSCCs, such as the supply of spare parts. The analysis, following demonstrations, needs to identify the contributing factors from the various inputs involved in order to isolate shortfalls and identify any corrective actions. Tailoring the Maintenance Support effectiveness demonstration clauses should consider any changes to the Support System Implementation clauses of SOW clause 5.3 and vice versa.

In-Service support and interim support Contracts that include Maintenance must also be considered. If an interim support Contract provides Maintenance, the Maintenance Support effectiveness demonstration may need to be delayed, in whole or part, until Defence assumes Maintenance responsibilities. Refer also to the Support System Endurance Demonstration discussed below.

7.2.4.4 Supply Support Effectiveness Demonstration

The purpose of this clause is for the Contractor to Validate, by demonstration, the effectiveness of the implemented Supply Support SSCC.

The demonstration requires Supply Support elements to be integrated into the existing support infrastructure, meaning that the demonstration cannot commence until sufficient elements (Support Resources and Training) have been integrated into Defence and/or the relevant Contractor (Support) / Subcontractors (Support).

Validation of Supply Support effectiveness can involve a wide variety of activities conducted within Defence and the Contractor (Support) / Subcontractors (Support). Some Validation activities may involve physical demonstration while others may be via audit or analysis of new in-service processes. Tailoring should be consistent with Support System Implementation in clause 5.3.

Supply Support effectiveness demonstration results, measured through short-term demonstrations or over an extended period, can be distorted in a positive way, before all Mission Systems have been delivered, if there is an excess of Support Resources (eg, Spares) per Mission System. Alternatively, results can be distorted negatively while personal skills and organisational processes convert to the new system.

Accordingly, some Supply Support Validation activities may need to be delayed or results adjusted. Tailoring of these clauses should, in addition to the Support System Implementation clause, be coordinated with the Transition requirements and related support contracts.

7.2.4.5 Training Support Effectiveness Demonstration

The purpose of this clause is for the Contractor to Validate, by demonstration, the effectiveness of the implemented Training Support SSCC.

The demonstration requires Training Support elements to be integrated into the existing support infrastructure, meaning that the demonstration cannot commence until sufficient elements (Support Resources and Training of Training Support staff) have been integrated into the broader Training systems that are already in place.

The effectiveness of Training Support should consider Training delivery, support functions, and Support Resources. Training delivery has significant quantitative and qualitative aspects in relation to knowledge and skills imparted, which should be described in the LMPs (eg, Units of Competency) along with both course and workplace assessment requirements. Demonstrations may include the workplace assessments defined in the LMPs; however, in some cases true effectiveness may not be known until individuals complete a number of Training activities.

Validation of training development systems, via physical demonstration, may not be realistically achieved until actual Training course updates are required. However, demonstrations of tools and processes involved may be sufficient, without demonstrating the complete process.

The Commonwealth needs to consider the scheduling of the Training Support effectiveness demonstrations in the context of implementing the Training solution (clause 5.3.4) and Transition, including Contractor Transition Support (clause 3.12.5), that can delay the need for Defence Training. Consideration should also be given to Training in order to support other Acceptance activities (eg, Training Maintenance Personnel before Maintenance effectiveness demonstrations).

7.2.4.6 Support System Endurance Demonstration

The purpose of this clause is for the Contractor to demonstrate that the complete Support System, integrating the elements delivered from the Contract, performs effectively over an extended period. The extended period could extend beyond other AV&V activities and the formal end of the Contract. Hence, an endurance demonstration may need to be linked to a provision that survives the end of the Contract (eg, performance guarantee or warranties) similar to a Mission System reliability demonstration, which can be conducted over several years.

The rationale for an extended period is due to a number of measures being statistical in nature, and needing a reasonable amount of time for sufficient events to occur and for the results to be considered valid. Additionally, implementation problems discovered and addressed during rollout can produce results that differ from what will be achieved in the long-term. For these reasons, the start of endurance demonstration may also be delayed until later in the Transition period, once systems and processes are ‘bedded down’.

Due to the timing of endurance demonstrations, the Commonwealth should ensure the co-ordination with any linked Contract (Support). For example, failure to meet maintenance turn-around times from a Contractor (Support) may effect performance payments for the Contractor (Support), but the real cause of the problem could be deficiencies in the Maintenance Support system designed under the Contractor (Acquisition). In this case, remediation under the Contract (Acquisition) may be more appropriate. Deficiencies may also occur in the support provided by the ADF, caused by deficiencies in the Training provided under the Contract (Acquisition).

Due to the timing and relationships between the Contract (Support) and the Contract (Acquisition), the Commonwealth Representative should review the clauses in the draft SOW and make necessary amendments to suit the Contract (eg, regarding a performance guarantee or warranties) and the Contract (Support).

Drafter's Action: Clause 7.2.4 is to be tailored for the scope of Acceptance Validation activities, for both the Mission System and Support System, using the guidance above.

Related Clauses: Clause 7.2.3 Acceptance Verification

Further Reading: CASG Handbook (E&T) 12-5-001 *Verification and Validation Guide*

8. QUALITY MANAGEMENT

8.1 Contractor Quality Responsibilities

Status: Core

Purpose: To increase confidence that the Supplies will meet Contract requirements through the effective management of Quality by the Contractor. To notify the Contractor of the Quality standards that must be applied and maintained by the Contractor.

Policy: DEFLOGMAN Part 2 Volume 7 Chapter 1, *Defence Supplier Quality Assurance*

AS/NZS ISO 9001:2016, *Quality Management Systems – Requirements*

AS/NZS ISO 9000:2015, *Quality Management Systems – Fundamentals and Vocabulary*

Guidance: The *ISO 9000* series of Quality Management standards used in Defence contracts are commercial standards. This approach is consistent with the Commonwealth Procurement Rules and Defence policy on Quality Assurance.

Requirement for a Quality Management System:

The application of a formal QMS, aligned to specific work requirements under the Contract, gives the Commonwealth a high level of assurance of suitably managed processes. Without such a QMS, Quality Management may be unstructured and product Quality could be compromised for cost and schedule, with no visibility by the Commonwealth. For high-risk contracts this is unacceptable.

Clause 8.1 enables:

a. the implementation and use of a Certified QMS;

b. the flow down of the QMS requirements to Approved Subcontractors; and

c. the Commonwealth to perform Audits and Surveillance.

Selection of a Quality System Standard:

Clause 8.1.1 places an obligation on the Contractor to be certified to AS/NZS ISO 9001:2015 (or agreed equivalent) by the ED. The quality system standard and any appropriate software standards and guidelines, etc, may be updated, if required, during pre-contract work or after Contract negotiations. For example, the template identifies ISO 9001:2015; however, if the successful tenderer is already certified to a later standard then the clause can be updated before ED. The standards and guidelines to be included will generally be derived from the successful tenderer's response to Annex E to the COT (ie, TDRE-8).

Clauses 8.1.3 and 8.1.4 are included to cover the Contractor's support of Quality Audit and Surveillance activities by the Commonwealth under COC clause 11.7, Commonwealth Access.

Clauses 8.1.5 and 8.1.6 include Approved Subcontractors within the quality management regime for the Contract.

Maintenance of Quality Records:

To ensure that the Commonwealth can access records relating to the Contractor's QMS, and the quality of the Supplies, clause 8.1.6 places an obligation on the Contractor to maintain records relating to the planning and Verification of the quality of the Supplies for a minimum period of seven years after Final Acceptance.

Drafter's Action: The Quality standard(s) that will apply to the Contract should be included in clause 8.1.1 and may be updated prior to ED. All other subclauses within clause 8.1 are to be included in the RFT without alteration, or only changed with appropriate advice.

Related Clauses: COT Attachment A, Annex E TDR E-8, Mandated Systems and Processes, requests information about the tenderer's QMS and applicability to the Contract.

Clause 8.2, Quality Management Planning

Clause 8.3, Quality Systems, Process and Product Non-Conformances

Clause 8.4, Non-Conforming Supplies

COC Clause 11.7, Commonwealth Access

Further Reading: Nil

8.2 Quality Management Planning

Status: Core

Purpose: To require the Contractor to submit a Quality Plan and maintain and apply the Approved Quality Plan to the work performed under the Contract.

Policy: DEFLOGMAN Part 2 Volume 7 Chapter 1, *Defence Supplier Quality Assurance*

Guidance: For the Contractor, the Quality Plan (QP) defines the application of the Contractor's QMS and activities to the quality requirements of the Contract. For the Commonwealth, the QP provides evidence of quality planning and acts as a baseline for Commonwealth Auditing and Surveillance activities.

Contract Data Requirements:

DID-PM-MGT-QP, for the QP, requires the Contractor's QP to apply commercial guidelines, namely ISO 10005:1995. Where Software development is involved AS/NZS ISO/IEC 12207:2013, paragraph 6.3, is also to be addressed. Drafters should seek advice from QA advisers to assist in the development of any Contract-specific QP requirements that, if required, add to the existing DID.

Quality Plan Delivery and Approval:

Drafters should note that tenderers are only required to submit a statement about their QMS and applicability to the draft Contract, not a draft QP. The Commonwealth may require a draft QP to be developed as pre-contract work. The CDRL specifies that the QP will be delivered 60 Working Days after ED. If a draft QP was developed as pre-contract work it would be included in Attachment K (see clause 2.5) and the final version delivered in accordance with the CDRL would supersede the draft QP. Careful consideration should be given to the time period in the CDRL, particularly if it is likely that critical or significant Contract work (eg, design, development or integration) will be undertaken shortly after Contract signature.

Drafters are advised that the preferred approach for the development of the QP is to include this activity, at least as a draft, as part of pre-contract work. The two principal benefits with this approach are that:

a. the QP will be specifically tailored for the Contract before ED; and

b. the risks associated with having uncontrolled or ineffective processes being applied in the early stages of significant Contract work is mitigated.

Drafter's Action: Clause 8.2 is to be included in the draft RFT without alteration. Additional requirements may be added with guidance from appropriate QA advisers.

Drafters may amend the CDRL for the delivery of the QP for Approval, based on the development of a QP or draft QP as pre-contract work. In all cases, advice should be sought from QA advisers for specific additions to DID-PM-MGT-QP.

Related Clauses: COT Attachment A, Annex E TDR E-8, information relating to the tenderer's QMS

Clause 8.1, Contractor Quality Responsibilities

Clause 8.3, Quality Systems, Process and Product Non-Conformances

Clause 8.4, Non-Conforming Supplies

DID-PM-MGT-QP defines the content requirements for the Quality Plan.

Further Reading: Nil

8.3 Quality Systems, Process and Product Non-Conformances

Status: Core. The optional SOW clause 8.3.3 should be included where the Contract contains significant technical risk.

Purpose: To set out as contractual obligations the mechanism for establishing corrective actions on quality system, process and product non-conformances.

Policy: DEFLOGMAN Part 2 Volume 7 Chapter 1, *Defence Supplier Quality Assurance*

Guidance: This clause provides the mechanism for establishing Commonwealth control of corrective actions on quality system, process and product non-conformances prior to the delivery of the applicable Supplies. Such requirements are included in Contracts in order to increase the probability that the Supplies will conform to quality requirements and applicable standards.

Correction of Non-Conformances:

Clause 8.3 entitles the Commonwealth Representative to require the Contractor to correct quality system, process and product non-conformances within the period specified in a notice. In determining the period in which a non-conformance must be corrected, consideration should be given to the nature and criticality of the non-conformance. Clause 8.3.2 entitles the Commonwealth Representative to undertake an Audit to verify that the non-conformance has been corrected.

Where the Contractor fails to remedy a quality system, process or product non-conformance within the time period specified in the notice, the Contractor will be in breach and Contract remedies may apply. In extreme cases, the Commonwealth could terminate the Contract for default under clause 13 of the COC.

Option for Contracts Containing Significant Technical Risk:

The optional SOW clause 8.3.3 allows the Commonwealth Representative to direct the Contractor to cease work where the identified quality system, process or product non-conformances may affect the Supplies. Clause 8.3.3 should only be included in Contracts containing significant technical risk and where Contract work includes the production of Supplies that will be sealed (ie, inaccessible) after production. In these circumstances, access to the Supplies for inspection or rework (ie, sealed compartments in an aircraft airframe or ship's hull) would not be possible and unless production was ceased there would be little or no opportunity for corrective action. Drafters should seek advice from QA advisers within their organisations for advice in determining the applicability of optional clause 8.3.3.

Drafter's Action: Drafters must determine the applicability of optional clause 8.3.3. Other subclauses should be included in the RFT without alteration. If required, clause 8.3 should only be changed with advice and assistance from QA advisers.

Related Clauses: COT Attachment A, Annex E, TDR E-8, information relating to the tenderer's QMS.

Clause 8.1, Contractor Quality Responsibilities

Clause 8.2, Quality Management Planning

Clause 8.4, Non-Conforming Supplies

Further Reading: Nil

8.4 Non-Conforming Supplies

Status: Core

Purpose: To define the mechanism for seeking Commonwealth Representative Approval of non-conforming Supplies, materials or work.

Policy: DEFLOGMAN Part 2 Volume 7 Chapter 1, *Defence Supplier Quality Assurance*

Departmental Quality Assurance Instruction (DQAI) 014, *Applying for a Deviation*

Guidance: Requirements for the control of non-conforming Supplies should be included in all contracts in order to increase the probability that Supplies conform to quality requirements and are free of reworked or repaired components that do not have Commonwealth Representative Approval. This clause provides the mechanism by which the Contractor may apply for the Approval of non-conforming Supplies.

The Contractor needs to apply to the Commonwealth Representative to use non-conforming work or materials in the production of the Supplies. The Defence mechanism for processing and Approving these applications is the *Application for a Deviation* (also known as a form SG-002). This form is available on the DRN and is included within DID-PM-MGT-AFD. Departmental Quality Assurance Instruction (DQAI) 014, *Applying for a Deviation*, provides guidance on the use of these forms.

The Commonwealth Representative is under no obligation to Approve non-conforming work or materials. Care must be taken when Approving the use of non-conforming work or materials as the Commonwealth will be bound by the Approval and may be prevented from claiming that the Supplies are otherwise defective and rejecting the Supplies under clause 6.8 of the COC.

Clause 8.4.1 requires the Contractor to submit the Application for a Deviation and identify if the Deviation is temporary (with a planned resolution) or permanent (requiring an update to the configuration) and to provide supporting evidence for consideration by the Commonwealth in accordance with clause 8.4.2. Clause 8.4.3 states the Commonwealth's right of refusal, or to Approve subject to additional conditions, while clause 8.4.4 limits the extent to which the Contractor's other obligations under the Contract are affected by an Approved Application for a Deviation. Clauses 8.4.6 and 8.4.7 require resolution of temporary Deviations that were Approved and clauses 8.4.8 and 8.4.9 describe the process for closure.

Drafter's Action: Clause 8.4 is to be included in the RFT without alteration. If required, clause 8.4 should only be changed with advice and assistance from QA advisers.

Related Clauses: COT Attachment A, Annex E, TDR E-8, information relating to the tenderer's QMS

Clause 8.1, Contractor Quality Responsibilities

Clause 8.2, Quality Management Planning

Clause 8.3, Quality Systems, Process and Product Non-Conformances

DID-PM-MGT-AFD defines requirements for an Application for a Deviation.

Further Reading: Nil

8.5 System Acceptance Audit

Status: Core

Policy: DI(G) OPS 45-2, *Capability Acceptance Into Operational Service*

Guidance: A System Acceptance Audit (SAA) is to be conducted for each Mission System, or group of Mission Systems, submitted for Acceptance. The SAA encompasses the delivery of associated Support Resources and initial Training, commensurate with the requirements to use and support of the Mission System(s) being delivered.

The SAA is essentially a broad-ranging Quality Audit, encompassing a review of preceding activities and documentation. Applicable documentation includes: test results, Configuration Audit reports, conformance certificates, certificates of compliance (with legislation and regulatory requirements), and any other evidence that documents Materiel System compliance with system requirements.

The SAA is an MSR and clause 8.5 identifies that the detailed requirements for the SAA are included within the SAA Checklist. The SAA Checklist must be tailored by the drafter but is not tailorable through the Contractor's SRP.

Drafter's Action: Clause 8.5 is to be included in the draft RFT without alteration. Drafter's must review and tailor MSR-CHECKLIST-SAA to suit the specific needs of the Contract.

Related Clauses: Clause 4.1.5, Conduct of System Reviews

Clause 4.6, Specialty Engineering, includes requirements for the System Safety Program, System Certification and other related requirements.

Clause 5.3, Support System Implementation

Clause 6.7, Configuration Audits, for FCA and PCA, which are prerequisite MSRs.

Clause 7, Verification and Validation, for AV&V activities that are prerequisites for System Acceptance.

Clause 8.3, Quality Systems, Process and Product Non-Conformances

Clause 8.4, Non-Conforming Supplies

MSR-CHECKLIST-SAA

Clause 6.8 of the COC, Acceptance

Clause 7.8 of the COC, Stop Payment

Further Reading: Nil

9. HEALTH, SAFETY AND ENVIRONMENT

9.1 Problematic Substances and Problematic Sources

Status: Core

Purpose: To define the requirements for the management of Problematic Substances and Problematic Sources.

Policy: Work *Health and Safety Regulations 2011* (Cth)

Environment Protection and Biodiversity Conservation Act 1999 (Cth)

Ozone Protection and Synthetic Greenhouse Gas Management Act 1989 (Cth)

Defence Radiation Safety Manual (DRSM)

Defence Safety Manual (SafetyMan)

DEFLOGMAN Part 3 Volume 4 Section 13, *Identification and Management of Problematic Items in MILIS*

Guidance: Clause 9.1 requires that the Contractor (including Subcontractors) only bring Problematic Substances and Problematic Sources onto Commonwealth Premises that have been Approved, and then only for the purpose(s) for which they are Approved. Applicable Contract work includes the installation of equipment on Commonwealth Premises and specific AV&V program activities.

Problematic Substances and Problematic Sources represent a subset of WHS-related hazards. Figure 12 identifies where different hazards are recorded in a contract that uses the *ASDEFCON (Strategic Materiel)* template.

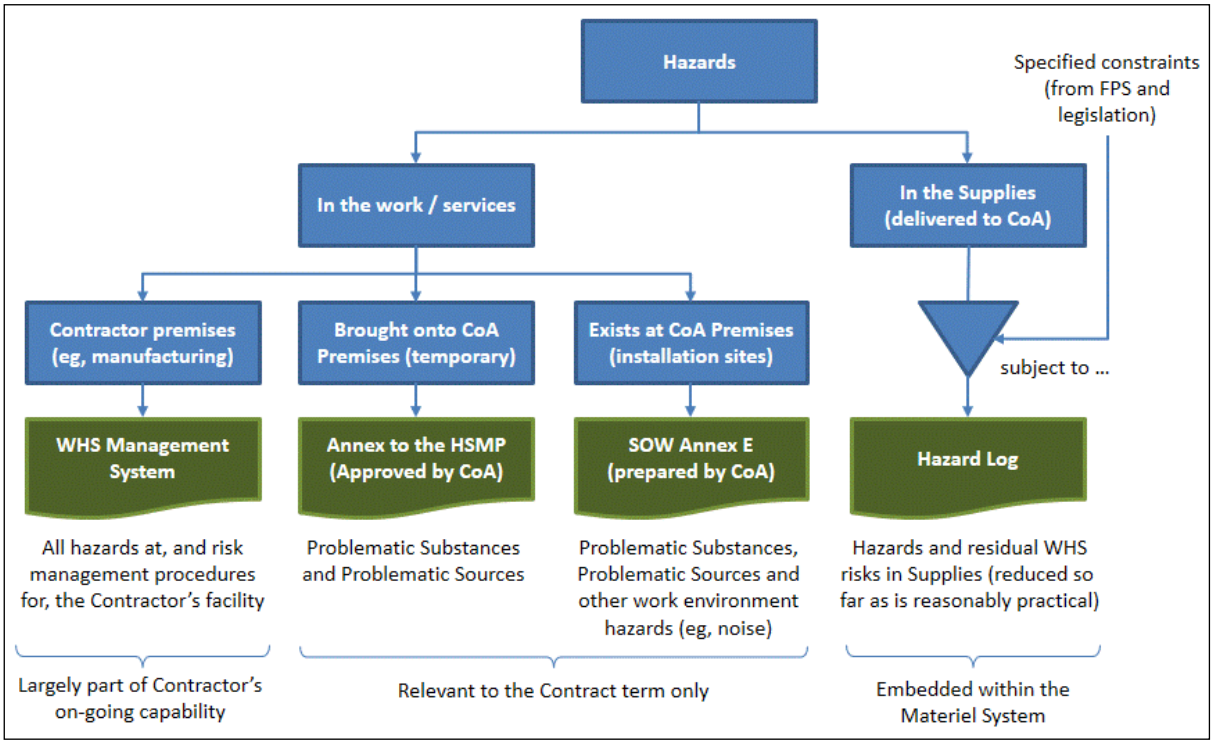


Figure 12 – Recording of Hazards

As illustrated in Figure 12, Approval is required for Problematic Substances and Problematic Sources to be brought onto Commonwealth Premises. An annex to the HSMP is used to list the Approved Problematic Substances and Problematic Sources and inclusion in this annex is part of the Approval process.

Note that Problematic Substances and Problematic Sources that form part of the Materiel System (ie, within Supplies or which are Supplies) will also be delivered to Commonwealth Premises. These hazards are listed in the HL where Approval of the

Problematic Substance and/or Problematic Source is recorded on an item-by-item basis (refer to DID-ENG-SOL-HL and clause 4.6.6.3). Being Approved as part of the Supplies, these items do not need to be included again in the HSMP.

If the Contractor will be present at Commonwealth Premises (eg, to perform installations) then, as Figure 12 identifies, the Contractor must be informed of relevant hazards at those locations through SOW Annex E.

There will also be hazards at the Contractor's premises (eg, chemical processes used in production). Not being expert in production and other Contractor activities, the Commonwealth does not Approve Problematic Substances or Problematic Sources used in this context (unless they form part of the Supplies and then only within that context). Under clause 9.3, the Contractor may be required to have a WHS Management System (WHSMS) that captures WHS risks and risk assessments, and therefore identifies notable Problematic Substances and Problematic Sources used on Contractor premises. Access to the WHSMS is required under COC clause 11.7, while on-line access using the DMS clause 2.3 is preferred).

Problematic Substances

SOW clause 9.1.1 states that Problematic Substances within Supplies are Approved in the Hazard Log (clause 4.6.6). Hence, they do not need to be Approved under clause 9. This clause does not require tailoring.

The clause contains an option to be included if Contract work will be performed on Commonwealth Premises that could involve Problematic Substances (ie, during installations or V&V, but not usual for a resident contractor team in an office). If it can be determined that Contract work will or will not be performed on Commonwealth Premises, then the option can be selected or deleted. If unsure, a note to tenderers may be inserted before the option box, identifying that the option would be included based on RFT responses in regards to Contract work on Commonwealth Premises.

Problematic Substances that are Approved (ie, Approved Substances) are to be listed in an Annex to the Approved HSMP (delivered under clause 9.3). The optional clauses define a process whereby the Contractor seeks Approval for a new Problematic Substance that is required or discovered, or a new purpose for an already Approved Substance. Discovery refers to a Problematic Substance that was not Approved being 'discovered' on Commonwealth Premises (eg, introduced by a person who was unaware of the Approval requirement).

When Approval is sought the request is to be supported by Safety Data Sheets (SDSs), which meet the requirements of DID-PM-HSE-SDS, and any required Authorisations. In accordance with DID-PM-HSE-SDS, the Contractor does not need to deliver an actual SDS if they can uniquely identify it in the *ChemAlert* database (ie, an SDS is not required if Defence can access a copy in *ChemAlert*).

The Contractor is required to advise the Commonwealth before an Approved Substance is brought onto Commonwealth Premises, which enables the Commonwealth to update the quantities for the Defence records in *ChemAlert*.

The final clause in the option box is a general requirement for the Contractor to seek lower-risk substitutes for Approved Substances.

Problematic Sources. Clauses under clause 9.1.2, Problematic Sources, are optional. If work under the Contract will be performed on Commonwealth Premises and require the use of a Problematic Source, the note to tenderers should be deleted. If it can be determined that no Contract work will be performed on Commonwealth Premises, or that no Problematic Source will be required then the clauses under the heading may be replaced with a single 'Not used'. If unsure, the draft clauses and note to tenderers should be retained for the RFT.

If Problematic Sources are to be used, then depending on the types of Problematic Source(s) (eg, non-ionising or ionising radiation, or lasers specifically), drafters should identify the relevant references to the DRSM (and any other applicable

documents) at clause 9.1.2.2. If the types of Problematic Sources cannot be determined, reference to the DRSM as a whole may be inserted in this clause.

Problematic Sources that are Approved are to be listed in an Annex to the Approved HSMP. The Contractor is also to advise the Commonwealth if it proposes to bring a new Problematic Source onto Commonwealth Premises, or if the Contractor proposes a new purpose for an Approved Problematic Source.

Clause 9.1.2.4 is optional and, when included, requires the Commonwealth to advise the Contractor of the Problematic Sources supplied by the Commonwealth to the Contractor (along with applicable safety information as necessary to comply with WHS Legislation and COC clause 12.4). For example, Problematic Sources within items provided as GFE.

Drafter's Action: Drafters should review clause 9.1 and include the optional clauses and notes to tenderers as indicated above.

Related Clauses: Annex E to Attachment A to the COT (TDR E-10).

Clause 12.4 of the COC, Work Health and Safety

Clause 4.6.6, System Safety Program

DID-PM-HSE-HSMP requires an annex to the HSMP for Problematic Substances and Problematic Sources Approved for work on Commonwealth Premises.

DID-PM-HSE-SDS defines requirements for Safety Data Sheets.

Further Reading: Nil

9.2 Environmental Management

Status: Optional

Purpose: To obtain a description of how the Contractor proposes to manage environmental issues and comply with environmental requirements under the Contract.

Policy: *Environment Protection and Biodiversity Conservation Act 1999* (Cth)

Other environmental legislation, such as the *Hazardous Waste (Regulation of Exports and Imports) Act 1989* (Cth)

DMSP (ENG) 12-8-043, *Materiel Systems Environmental Management*

Guidance: Contractors are obliged to comply with relevant legislation, including environmental legislation (see clauses 12.2 and 12.5 of the COC). Accordingly, environmental management requirements will not normally be required in the Contract when work will be undertaken at the Contractor's (and Subcontractors') own facilities. If there are no other special environmental requirements (described below) the clauses under clause 9.2 may be deleted and replaced with a single 'Not used'.

Note that environmental requirements for the Materiel System (the Supplies) should be addressed under clause 4.6.10, Environmental Engineering Program.

Any construction of facilities associated with a major project is normally managed through an E&IG contract, which will contain any environmental requirements specific to that task. However, if extended occupation of Commonwealth Premises is expected, then additional environmental issues (eg, treatment of trade waste) may need to be defined in the GFF Licence. Additionally, in limited cases, there may be special environmental requirements (eg, ministerial approval may be needed) for work conducted at Contractor premises. Clause 9.2 is required when significant environmental issues may be involved for Contract work performed in Australia. In these instances, these clauses should be seen as a starting point and further advice should be sought from E&IG and the CASG Directorate Health Safety & Environment (cas.safe@defence.gov.au).

Clause 9.2, when included, requires the Contractor to plan environmental management activities in the PMP and have an Environmental Management System

(ENVMS). An ENVMS includes information such audit, review and reporting procedures, and processes for identifying and managing specific environmental risks. Commonwealth access to Contractor sites for environment-related inspections is possible under clause 11.7 of the COC, Commonwealth Access.

Clause 9.2 includes a set of optional clauses for use when the Contractor will be located on Commonwealth Premises. Applicable references to Defence and site specific policies should be added where these are relevant to the work that will be performed (eg, for installation work in heritage-listed buildings).

Drafter's Action: Drafters are to determine if there is a need to address any special requirements for environmental management. If not, the clauses under the heading may be replaced with a single 'Not used'. If required, the clauses should be seen as a starting point and further advice from E&IG should be sought.

If the Contractor will occupy Commonwealth Premises then the optional clause should also be included and coordinated with the GFF Licence. Additional requirements may also apply and advice should be sought from E&IG.

Related Clauses: Clause 11.7 of the draft COC, Commonwealth Access

Clause 12.5 of the draft COC, Environmental Obligations

Clause 2.3, Data Management System

DID-PM-STAT-CSR defines requirements for CSRs, including a Health, Safety and Environment report.

Further Reading: Nil

9.3 Work Health and Safety

Status: Core

Purpose: To require the Contractor to manage WHS and to enable the Commonwealth to discharge its duties under the WHS Legislation.

Policy: WHS Legislation

SafetyMan

CASG WHS Management System (CASsafe)

Codes of Practice approved under section 274 of the *Work Health and Safety Act 2011* (Cth)

Guidance: Under the WHS Legislation, the Commonwealth bears a duty to ensure the health and safety of workers engaged, or caused to be engaged, by the Commonwealth, or whose work activities are influenced or directed by the Commonwealth (eg, through a contract). Accordingly, clause 9.3 is a core clause.

Clause 9.3 includes subclauses covering:

a. the acknowledgement of advice regarding GFE and GFF, if applicable;

c. the management of WHS; and

d. additional requirements for Contractor personnel located on Commonwealth Premises and Commonwealth Personnel located on Contractor premises.

Acknowledgement of WHS Advice – GFE. Clause 9.3.1 contains an option to be included when the Commonwealth provides GFE, such as subsystems or components to be integrated into the Materiel System, or S&TE to be used for V&V activities. If no GFE will be provided, the option can be replaced with 'Not used'. If required, drafters should also ensure that related safety information (refer to CASsafe Requirement 10.2) is provided to the Contractor (as GFI or GFD) with the GFE. GFE and supporting information must be included in Attachment E.

Acknowledgement of WHS Advice – Commonwealth Premises. Clause 9.3.2 contains an option to be included when the Commonwealth provides the Contractor with access to Commonwealth Premises to perform work under the Contract (eg, to install equipment or for the AV&V program). If there will be no requirement for the Contractor to access Commonwealth Premises, the option can be replaced with 'Not used' and Annex E to the SOW may also be designated as 'Not used'.

If the Contractor is to perform work at Commonwealth Premises, the drafter will need to prepare Annex E to identify and provide information regarding relevant WHS hazards at the Commonwealth Premises, including Problematic Substances, Problematic Sources, ACM and other hazards such as noise and machinery in the proximity of the work areas Within Annex E, details may be included for one or more Commonwealth Premises – refer to Annex E (below) for additional guidance.

Planning for and Management of WHS Duties. The WHS Legislation requires all Contractors working within the jurisdiction of the legislation (ie, within Australia and some other locations), and the Commonwealth, to manage WHS. As the Commonwealth's duty under the WHS Legislation extends to persons caused to be engaged by the Commonwealth, the Commonwealth shares a duty of care for the health and safety of Contractor and Subcontractor personnel. Accordingly, the Contract requires the Contractor to undertake certain functions and provide certain information to enable the Commonwealth to fulfil its obligations under the WHS Legislation with respect to those shared duties. These requirements include appropriate planning and management of WHS matters, including WHS risks.

The draft Contract requires that the Commonwealth is provided with visibility of Contractor activities to ensure that WHS is appropriately addressed. The required level of visibility will depend largely on whether the work is subject to the WHS Legislation (versus being performed overseas) and if performed on Commonwealth Premises, with optional clauses selected as appropriate.

While not being prescriptive, the following table compares example contracting situations with the provisions in the template. Examples in the table are not 'rules' and each case must be judged on its merits. Further advice may be sought from the ASDEFCON Help Desk, e-mail: procurement.ASDEFCON@defence.gov.au.

	Work on CoA Premises	**Australian work of industrial nature**	**Australian office work only**	**Overseas work only (no CoA personnel)**	**Overseas CoA personnel**
COC clause 11.7	●	●	●	●	●
HSMP	●	●	○		○
WHS in PMP			○	●	○
WHSMS	●	●			
WHSMS on DMS	●	●			
SOW Annex E	●				

Key: ● – generally required ○ – optional (HSMP or PMP) CoA – Commonwealth

Explanation:

- COC clause 11.7 provides the Commonwealth with the right to access Contractor premises to view safety policy and procedures, including the WHSMS when applicable. This clause is used for a range of other purposes and is core to all contracts.
- The HSMP covers Contract-specific WHS planning when the required level of visibility is high (eg, work on Commonwealth Premises applying base-specific requirements) or the work is subject to the WHS Legislation and is of an industrial nature (eg, the production of Supplies in Australia). Planning may

be rolled-up into the PMP (and should refer to the Contractor's existing company WHS plans that will be accessible to the Commonwealth) if the risks are low (eg, contract management in Australia and all production overseas). If Commonwealth Personnel are located at the Contractor's overseas premises, the PMP requirement for WHS management may be adequate for Resident Personnel (in an office environment at the overseas facility) but a stand-alone HSMP may be required if Commonwealth Personnel are actively involved in test programs or extensive Training (eg, for operators and maintenance staff). Hence, 'HSMP' and 'WHS in PMP' are shown as options in the fourth and last columns of the table above.

- When required, the WHSMS records details of safety-related procedures, Authorisations and risk assessments. A WHSMS can provide a high level of visibility for managing WHS matters related to work and is included in the Contract for work on Commonwealth Premises and other work of an industrial nature that is subject to the WHS Legislation.
- The WHSMS, with up-to-date information, may be made accessible, on-line, to the Commonwealth via a DMS (refer clause 2.3). Access to the WHSMS via the DMS reduces the need for significant amounts of low-level detail in the HSMP.
- SOW Annex E identifies WHS hazards at Commonwealth Premises. It is only required if work will be performed on Commonwealth Premises, such as the installation of equipment or for V&V activities.

Following the above logic, clause 9.3.3 requires:

a. planning in a HSMP or the PMP, as applicable to the nature of the work;

b. the application of the Approved HSMP or PMP, whichever is applicable;

c. a WHSMS for work of an industrial nature that is subject to the WHS Legislation, including work on Commonwealth Premises; and

d. consultation, co-operation and co-ordination with the Commonwealth in executing WHS obligations.

The first option (clause 9.3.3.1) is included when work will be performed on Commonwealth Premises. For this option, drafters need to insert references to Defence policies and local base or site-specific policies applicable to the Contractor's plans for work at those premises. If no work will be performed by the Contractor on Commonwealth Premises, then the optional clause may be deleted.

For WHS planning, clauses 9.3.3.2 and 9.3.3.3 are core options and one of them must be included. If work will be performed on Commonwealth Premises, a stand-alone HSMP (Option A) is required to address WHS issues specific to those premises (including the references under clause 9.3.3.1) but it may also refer to other Contractor plans and management systems for other work. If no work is to be conducted on Commonwealth Premises, planning within the PMP (Option B) may be sufficient and this should include references to the Contractor's existing HSMP for their premises. The option that is not required is to be deleted and drafters are to insert the name of the governing plan (ie, HSMP or PMP) into the clauses that follow.

WHS Legislation requires an organisation to have a WHSMS if they are operating a major hazard facility (as defined in WHS Legislation). However, a WHSMS is an organised ensemble of WHS-related information (automated or otherwise) and an effective management tool that provides visibility of WHS issues. Access to a WHSMS facilitates Defence's ability to meet its shared duty of care responsibilities and assists the Commonwealth to fulfil due diligence obligations under section 27 of the *Work Health and Safety Act 2011* (Cth).

A WHSMS is required when work of an industrial nature is to be performed under the Contract and is subject to the WHS Legislation. Work of an industrial nature is intended to mean production, fabrication or installations at Contractor premises, Commonwealth Premises, or other sites. Conversely, a WHSMS would not be

required if the Contractor does not perform work subject to the WHS Legislation (eg, all work is performed overseas) or if the Contractor's Australian-based activity is all 'office work' as a local representative for contract management, computer-aided design, or similar work in an office environment.

When a WHSMS is required, drafters need to include optional clauses 9.3.3.5 and 9.3.3.6. Subclause 9.3.3.5b only applies to work on Commonwealth Premises and may be deleted if not applicable. Reference to the governing plan (ie, HSMP or PMP) should be inserted as indicated. If a WHSMS is required, DMS access should be included under clause 2.3.

Drafters will need to determine if the Contractor's WHSMS should be, or would benefit from being, certified to the Australian/New Zealand standard. Certification is not mandated by CASG policy but, if required, optional clauses 9.3.3.7 and 9.3.3.8 may be included without tailoring; otherwise this option can be deleted.

Clause 9.3.3.9 reinforces the obligation to consult, co-operate and co-ordinate, consistent with clause 3.19. This clause should be included without change.

Work on Commonwealth Premises. Clause 9.3.4 includes requirements for work on Commonwealth Premises. These activities (eg, safety-related training and induction briefs) are required under the WHS Legislation and the clauses add detail that is specific to work on Commonwealth Premises. If no work will be performed on Commonwealth Premises, clauses under clause 9.3.4 can be replaced with a single 'Not used'.

Clause 9.3.4.1 requires that the Contractor's WHSMS (required for Contractor work on Commonwealth Premises) be applied to the work performed by Subcontractors on Commonwealth Premises. Note that it is not practicable to have a Contractor's WHSMS apply to all Subcontractor work (ie, in their own premises).

When work will be performed on Commonwealth Premises, clause 9.3.4.2 may be tailored with specific requirements; for example, the types of induction training and/or briefings, schedules, application requests, or references to where these details can be found may be added.

Clause 9.3.4.3 details Contractor participation in Defence WHS programs. For example, for the Contractor to keep local WHS representatives informed regarding new installations, or have on-going participation in local working groups if located on-site for a lengthy period. Drafters should insert applicable details in the clause. If the Contractor will work at several sites (eg, installations at several bases) then a sub-clause should be added for each site. If work on Commonwealth Premises is minimal, the Commonwealth project office may perform required liaison functions and the clause can be deleted.

Clause 9.3.4.4 defines a process for when additional WHS hazards are discovered on Commonwealth Premises (ie, not already identified in SOW Annex E). Drafters should review clause 9.3.4.4 but, in most cases, it can be included without change.

WHS of Commonwealth Personnel on Contractor or Approved Subcontractor Premises. Clause 9.3.5 sets requirements for ensuring the health and safety of Commonwealth Personnel on Contractor premises, including Resident Personnel, personnel undertaking training, Commonwealth Service Providers, and others.

Clause 9.3.5.1 requires the Contractor to ensure that a suitable standard of work environment is provided to Commonwealth Personnel. It includes two subclauses that address (a) for locations where the WHS Legislation applies, by referring to the applicable code of practice, and (b) other locations (eg, for teams located overseas) where the Contractor's assistance is required for the Commonwealth to fulfil its duty of care for Commonwealth Personnel.

Clauses 9.3.5.2, 9.3.5.3 and 9.3.5.6 allow for Commonwealth supervision of WHS matters for Commonwealth Personnel through an initial site familiarisation (to confirm, for example, WHS-related suitability and access to first aid resources), induction / site-specific WHS training / briefings, and on-going visibility of WHS issues applicable to the work areas for the Commonwealth Personnel.

Clause 9.3.5.4 compels the Commonwealth to ensure that Commonwealth Personnel on Contractor / Subcontractor premises undertake WHS training / site briefs. This clause reciprocates the Contractor's obligation under clause 9.3.4.2.

Drafters should review clause 9.3.5 but, in most cases, the clause should be included without change.

Drafter's Action: Drafters should review clause 9.3 and tailor the clauses as indicated above. Further guidance may be sought from the CASG Directorate Health Safety & Environment (cas.safe@defence.gov.au).

Related Clauses: Annex E to Attachment A to the COT (TDR E-10).

Attachment E, Government Furnished Material

Clause 11.7 of the COC, Commonwealth Access

Clause 12.4 of the COC, Work Health and Safety

Clause 2.3, Data Management System

Annex E to the SOW, Known Hazards at Commonwealth Premises

DID-PM-MGT-PMP defines requirements for the PMP, including a requirement for WHS planning.

DID-PM-STAT-CSR defines requirements for CSRs, including a Health, Safety and Environment report.

DID-PM-HSE-HSMP defines requirements for a HSMP.

DID-PM-HSE-SDS defines requirements for Safety Data Sheets.

Further Reading: Nil

9.4 Incident Reporting

Status: Core, with optional sub-clauses

Purpose: To identify the requirements for WHS and Environment incident reporting.

Policy: *Environment Protection and Biodiversity Conservation Act 1999* (Cth)

Ozone Protection and Synthetic Greenhouse Gas Management Act 1989 (Cth)

WHS Legislation

SafetyMan Part 1 Chapter 1, *Work Health and Safety Event (Incident) Reporting Policy and Guidance*

DEFLOGMAN Part 2 Volume 3 Chapter 1, *Ozone Depleting Substances and Synthetic Greenhouse Gases Manual*

WHS029 *Guide to Work Health and Safety Incident Notification* (Comcare)

Guidance: This clause creates obligations that enable the Commonwealth to meet the incident notification requirements under the WHS Legislation and the reporting of Environmental Incidents under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth).

Notifiable Incidents (WHS). Clause 9.4.1 defines the reporting requirements for Notifiable Incidents, as defined in the WHS Legislation (and the Glossary) to mean the death of a person, a serious injury or illness of a person, or a dangerous incident (including a 'near miss'). Under the WHS Legislation, these incidents must be reported to the applicable WHS regulator. The regulator may subsequently undertake investigations and issue directives in relation to the Notifiable Incident. Note that *SafetyMan* refers to 'events' as not all incidents are Notifiable Incidents.

Under the WHS Legislation, Defence must report Notifiable Incidents to Comcare. The Contractor and Subcontractors must report Notifiable Incidents to their respective regulator, usually a State or Territory WHS regulator. For a small number

of companies the regulator may be Comcare; if they are a corporation licensed under the *Safety Rehabilitation and Compensation Act 1988* (Cth) (non-Commonwealth licensees). Clause 9.4.1 requires that the Contractor and Subcontractors immediately inform the Commonwealth of Notifiable Incidents where the Commonwealth may need to notify Comcare. Notifiable Incidents that are reportable to Comcare include those involving Commonwealth Personnel, those on Commonwealth Premises, and Notifiable Incidents that arise directly out of the conduct of Defence's business or undertaking (eg, if GFM was relevant to an incident on Contractor premises).

Clause 9.4.2 describes the mechanisms for reporting Notifiable Incidents, consistent with *SafetyMan*. A form AE527 is required, or if the Contractor has DRN access then the *Sentinel Event Kiosk* (preferred in *SafetyMan*) can be used.

In addition to the report required under clause 9.4.1, clause 9.4.3 requires that the Commonwealth receive copies of notices and other communications, relating to Notifiable Incidents, between the Contractor and Subcontractors and their regulator. The Contractor is also to provide a summary of its investigations to the Commonwealth for the purposes of assessing risk and avoiding that type of incident in the future. WHS issues, including a list of Notifiable Incidents, are included in the Health Safety and Environment sub-report of the CSR.

Clause 9.4.4 requires the Commonwealth to report Notifiable Incidents to the Contractor when they involve Contractor personnel on Commonwealth Premises, and to also provide copies of the Commonwealth's report to Comcare. For example, if an incident were to occur to a member of the Contractor's staff while installing equipment or assisting the Commonwealth with V&V activities this reporting enables the Contractor to provide a full report to their regulator. This clause reciprocates the obligation under clause 9.4.1.

Environmental Incidents. Clause 9.4.5 is an optional clause to be included when Environmental management and reporting requirements apply to the Contract. The decision to include this optional clause uses the same criteria for including clause 9.2 (ie, clauses 9.2 and 9.4.5 are included or not included as a set).

In addition to reporting Environmental Incidents under clause 9.4.5, environmental issues are reported in the Health Safety and Environment sub-report of the CSR, which includes a summary of any Environmental Incidents for the reporting period.

Clause 9.4.6 should be included in all contracts where CMCA that contains Ozone Depleting Substances (ODSs) or Synthetic Greenhouse Gases (SGGs) will be provided to the Contractor. ODSs and SGGs include chemicals such as refrigerants and the contents of some fire extinguishers. If no CMCA will contain these substances, then the optional clause may be deleted. Quantities of these chemicals are strictly managed and accounted for and must be reported accordingly. For further information, refer to DEFLOGMAN Part 2 Volume 3.

Drafter's Action: Drafters should review clause 9.4 and tailor the options as indicated above.

Related Clauses: COC clause 12.4, Work Health and Safety

COC clause 12.5, Environmental Obligations

DID-PM-STAT-CSR defines requirements for CSRs, including a Health, Safety and Environment sub-report.

Further Reading: Nil

ANNEX A – FUNCTION AND PERFORMANCE SPECIFICATION

Status: Core

Purpose: To specify the function and performance requirements for the Materiel System.

Policy: Functional Policy (ENG) 12-3-001, *Requirements Engineering*

Guidance: The FPS defines the Commonwealth's requirements for the new Materiel System in terms of its functions and associated performance requirements and constraints.

Generally, specified requirements should be derived from and traceable to Defence's capability needs, as described by the operational and support concepts in the OCD at SOW Annex B. The FPS also identifies other constraints (not performance related) that can be traced to legislation, policy, regulations and other 'boundary conditions'.

Some requirements may be derived from strategic Defence initiatives or contracting strategies, such as a need for local industry support (ie, from Australian Industry Capability policy) or the ability to compete support services (eg, requiring an ability to sublicense Intellectual Property rights in Technical Data and Software).

The FPS annexed to the draft SOW for the RFT may have priorities / importance levels assigned to individual requirements, such as 'Essential' or 'Important'. Pre-contract, the FPS is updated for the winning tenderer's offer, at which time all FPS requirements are included in the Contract (and the priority assignments are deleted). External to the Contract, the FPS is part of the 'acquisition baseline' and the agreement between the procurement authority (eg, CASG) and the sponsor (eg, Capability Manager).

Within the Contract, the FPS is the basis for the initial Functional Baselines for both the Mission System and the Support System. Even though the Contractor's SS and the SSSPEC will be added to the Contract and supersede the FPS as the basis for the Functional Baselines the FPS remains on the Contract for the life of the Contract as the statement of the Commonwealth's requirements. Approved Deviations and the Requirements Traceability Matrix track any differences that emerge between the FPS and the SS and SSSPEC over the life of the Contract.

Drafter's Action: Drafters are to ensure that the most current version of the FPS is included in Annex A prior to release of the RFT.

Drafters must also include the negotiated FPS, updated to capture the successful tenderer's offer, in this Annex prior to Contract signature.

Related Clauses: The FPS is referenced in a number of clauses in the draft SOW, including:

a. clause 2.1, Scope of Work;

b. clause 3.11, Life Cycle Cost;

c. clause 4.2.2, System Requirements Validation; and

d. clause 5.2.2.1, Support System Requirements Validation.

Further Reading: Functional Handbook (ENG) 12-3-001, *Requirements Management Guide*

Functional Handbook (ENG) 12-3-003, *Capability Definition Documents Guide*

Functional Handbook (ENG) 12-3-005, *Function and Performance Specification Development Guide*

Functional Procedure (ENG) 12-3-005, *Developing Function and Performance Specifications*

ANNEX B – OPERATIONAL CONCEPT DOCUMENT

Status: Core

Purpose: To detail the operational and support concepts for the Materiel System.

Policy: Functional Handbook (ENG) 12-3-001 *Requirements Management Guide*

Guidance: Drafters should note that the OCD remains on the Contract for the life of the Contract, providing a significant source of information for assessing "fitness for purpose" of the Contractor's design. Outside the Contract, the OCD is owned by the sponsor (eg, Capability Manager) and forms part of the agreement between the procurement authority and the sponsor. Accordingly, any change to the OCD requires the owner's / sponsor's approval (external to the parties to the Contract). To control any change to the OCD, and facilitate sponsor consideration of the change, the OCD can only be amended by a CCP.

Drafter's Action: Drafters are to ensure that the most current version of the OCD is included in Annex B prior to release of the RFT. Drafters must also include any negotiated changes to the OCD (including negotiations with the sponsor / OCD owner) in this annex prior to Contract signature.

Related Clauses: The OCD is referenced in a number of clauses in the draft SOW, including:

a. clause 2.1, Scope of Work;

b. clause 3.11, Life Cycle Cost;

c. clause 3.12, Transition into Operational Service;

d. clause 4.1.7, Technical Performance Measures;

e. clause 4.2.1, Operational Concept Document;

f. clause 4.2.2, System Requirements Validation;

g. clause 5.2.2.1, Support System Requirements Validation;

h. clause 5.2.8.1, General (under Support System Synthesis); and

i. clause 7.2.4, Acceptance Validation.

Further Reading: Functional Handbook (ENG) 12-3-003 *Capability Definition Documents Guide*

ANNEX C – CONTRACT DATA REQUIREMENTS LIST

Status: Core

Purpose: To:

a. list the data deliverables required under the Contract and to define their parameters, including required delivery times, Commonwealth actions, and required standards; and

b. set out the processes and procedures for preparation, delivery, management and maintenance of data items by the Contractor.

Policy: Nil

Guidance: This guidance explains each clause within Annex C. Annex C also includes guidance through the notes to drafters.

1. PURPOSE

Clause 1 explains the purpose of the Contract Data Requirements List (CDRL). There is no requirement for drafters to amend this clause.

Contract data items, listed in the CDRL, form one of the primary methods for information transfer between the Contractor and the Commonwealth.

Data items should be considered in the context of the relevant processes. Data items listed in the CDRL can be divided into two basic types:

a. data items that define processes, such as the Contractor's plans; and

b. data items that are products that result from undertaking these processes or reporting on these processes, such as a Specification or a Contract Status Report.

Data items that define processes should be delivered before those processes are implemented and, in general, are required at the start of the Contract. Ideally, these should be considered as a set to ensure that the processes form a complete set and are harmonised across the scope of the Contract (even though it may not be practical to deliver and review all of these data items simultaneously).

Data items that are the products of the process should be delivered as they are produced. Of course, these data items will also pass through the Contractor's internal review and approval processes. For iterative processes such as Human Machine Interface (HMI) development, draft data items may be required to reflect the current status.

2. MANAGEMENT OF DATA ITEM DESCRIPTIONS

A common misconception is that a CDRL 'item' and Data Item Description (DID) are the same thing. The CDRL line number that is referenced in the SOW refers to a particular line number of the CDRL table (identified in column 'a') under clause 7. Each numbered line in the CDRL table refers to a DID (named in column 'i'). A DID is a specification that defines the purpose and content required for a specific deliverable data item. There is no 1:1 relationship between CDRL lines and DIDs because one DID may be listed on a number of CDRL lines. Some DIDs are also included in more than one ASDEFCON template (in different CDRL lines).

Depending on the significance of the deliverable, the Commonwealth action results in differing levels of endorsement. These are, in order of most to least significance:

a. CCP approval,

b. Accept,

c. Approve, and

d. Review.

These differing levels of endorsement are defined in clause 2.4 of the draft SOW, with related guidance included in this *Guide* in relation to SOW clause 2.4.

All data items should be internally reviewed and, if necessary, approved by the Contractor before presentation to the Commonwealth Representative.

Data items that define Contract processes (eg, plans) must be Approved by the Commonwealth Representative.

Data items that will become an Attachment (eg, System Specification and AIC Plan) should be subject to CCP approval by the Commonwealth Representative.

Data items that form part of the operational system (eg, operator manuals) should be Accepted by the Commonwealth Representative.

Data items that define the output from key design stages (eg, design review minutes) should be Approved by the Commonwealth Representative.

Data items that permit the ongoing support and development of updates to the system are divided into two cases. Where the Contractor provides the whole-of-life support for the system, these data items should be Reviewed. Where the Contractor may not support the system over its entire life and the data will be used by Defence or a third party, these data items should be Approved or Accepted.

Data items that monitor progress (eg, CSR), and verify that the processes are being followed, should be Reviewed by the Commonwealth Representative. As the series of CSRs represents the history of the Contract, the comments by the Commonwealth Representative are needed to ensure accuracy. Note that some progress reports need Approval for contractual reasons (eg, EVPRs).

Data items that provide visibility of activities (eg, engineering databases) or provide early feedback on the design (eg, design documents) should be supplied to the Commonwealth Representative for Review.

There is no requirement for drafters to amend clause 2.

3. MANAGEMENT OF DATA ITEMS

Clause 3 sets out a number of obligations that the Contractor is to undertake in relation to the management of data items, including configuration management. There is no requirement for drafters to amend clause 3.

4. EXPLANATION OF THE CDRL

Clause 4 describes the meaning for each of the columns in the CDRL table that appears under clause 7. To a large extent, the clause is self-explanatory.

The drafter needs to amend the subclauses within clause 4.1 depending upon whether or not a DMS has been included at clause 2.3 of the draft SOW. Unless additional codes are needed for ‘delivery schedule’ or ‘maintenance’ columns, this clause should not require any further amendment.

5. DELIVERY ADDRESSES

Drafters should think carefully about the distribution of data items listed in the CDRL before the RFT is released. Wherever possible, arrange via the Contract for the Contractor to send data items to all Commonwealth locations that require the data item particularly for hard copies. Add to the distribution list in the CDRL as required. Also consider using Resident Personnel for distribution to stakeholders.

6. GENERAL REQUIREMENTS FOR DATA ITEMS

6.1 Data Item Media

Clause 6.1 sets requirements for hard copy and soft copy data item deliverables.

For hard copies, ‘metric’ ISO 216 ‘A-series’ paper is specified. As per the note to drafters, USA-based contractors will base normal business practices on letter size

paper and requiring the use of A4 type paper will increase administrative costs. One option is to obtain plans and reports on letter size paper with margins suitable for photocopying to A4 (sometimes referred to in the US as 'international A4').

Drafters should consider the preferred electronic formats. The ILS section of the SOW specifies the electronic format requirements for all deliverable Technical Data and the requirements specified here should be consistent with the requirements in the SOW and DIDs. Where these formats do not apply, the drafter should identify the standard Microsoft Office® products used by Defence, including the applicable versions.

6.2 Format Instructions

Clause 6.2 outlines basic format requirements to avoid repeating this information in each DID. The requirements in this area may be expanded or reduced as assessed by the procurement team on a risk basis. For example, Commonwealth Representative staff may need to control the document reference numbers and format to integrate with an existing suite of documentation.

6.3 Content Instructions

The requirement for submitted data items (e.g. manuals) to satisfy a certain reading grade level (eg, RGL 9) could be included as necessary. This is to ensure that the data item is written focussed at an acceptable level of reading difficulty. Otherwise, drafters may include this clause without alteration.

6.4 Use of Existing Data

There is no requirement for drafters to amend clause.

7. CONTRACT DATA REQUIREMENTS LIST

As identified by the note to drafters, DIDs are to be included as schedules to the Annex. DIDs can be downloaded from the ASDEFCON website (see: http://drnet.defence.gov.au/DMO/Commercial/Commercial%20Policy%20Framework/Pages/ASDEFCON-Templates.aspx). Drafters should note that some DIDs in *ASDEFCON (Strategic Materiel)* are re-used from *ASDEFCON (Support).* These DIDs can be recognised by the three-part title (eg, DID-ENG-AEOA), DIDs originating in other templates are usually included in a separate download as 'supplementary DIDs'.

Drafters should download the most recent DID versions from the website and specify the version under the Data Item Description Reference column of the CDRL table. For example, Version 3.1 of the Project Management Plan DID will be referenced as DID-PM-MGT-PMP-V3.1.

If Contract-specific data items are required (eg, to meet regulatory requirements) drafters should generate these additional DIDs using the standard format and approach used for the existing ASDEFCON DIDs. The data item should then be incorporated into the CDRL, including a CDRL number, the DID number and the other information required. To the extent practicable, drafters should avoid using Contract-specific DIDs unless no other option is available. Drafters need to ensure that all DIDs are provided to tenderers in accordance with the 'Note to drafters'.

In reviewing and preparing the CDRL table, drafters should consider the factors discussed below.

Each line number in the CDRL should be referenced from the SOW (or COC). If a CDRL line (and data item) is not required then the line should be deleted.

Each CDRL line needs a unique identifier (line number, which may be subdivided by the reference column), and a cross-reference that is consistent with the SOW.

Delivery schedules for data items should consider the expected maturity of each data item for the stage of the Contract, the ability of the Commonwealth to adequately disposition it in the action period, and the risk to the program. When considering the

actual period required for the Commonwealth to disposition a data item the following factors should be included:

a. the size and complexity of the document;

b. whether a preliminary or draft version would already have been reviewed;

c. the need to involve external agencies or Approval authorities; and

d. conflicting requirements (eg, the need to review multiple data items concurrently).

Due to archiving requirements, government policy is to minimise the use of hard copy documents and a hard copy should only be requested when essential (eg, because an original signature is required). Wherever possible, the use of the DMS or soft copies is encouraged, although the ability of the Commonwealth to interpret and review the relevant file format needs to be addressed in the wording of the CDRL (refer clause 6.1) and the SOW (eg, in specialist areas, such as the scheduling software and the Life Cycle Cost (LCC) model).

Drafter's Action: The CDRL is to be amended, both prior to release of the RFT and prior to Contract signature, to:

a. depending upon whether or not the draft SOW has included a requirement for a DMS, ensure that the references to the DMS in CDRL clauses have been included or omitted, as applicable;

b. ensure that all (and only) those data items called up in the draft SOW (including though other DIDs (eg, Risk Register)) are invoked;

c. ensure that the latest versions of the data items are referenced;

d. ensure that the appropriate Commonwealth action (ie, Review, Approval, Acceptance or CCP approval) is applied to each version of each data item, consistent with the guidance provided herein and the principle of Clear Accountability In Design (CAID);

e. ensure that the scheduling of the delivery times for data items reflects the requirements of the Contract, the interactions between data items, and the developmental cycles for the Mission System and Support System;

f. ensure that the Commonwealth action times for data items are manageable and reflect the factors discussed in the guidance;

g. reflect the method of delivery (eg, hard copy, soft copy, or via the DMS);

h. reflect the required distribution of data items;

i. reflect those data items for which prior Approval would be provided (eg, 'by ED' following either ODIA or pre-contract work): and

j. for any draft versions of data items, include a reason for the draft in the Notes column.

Drafters must attach the DIDs to the CDRL as 'Schedule 1 to Annex C – Data Item Descriptions'.

Related Clauses: Clause 2.3 of the draft SOW is an optional clause that requires the Contractor to implement a DMS.

Clause 2.4 of the draft SOW requires the Contractor to produce, update and deliver the data items referenced in the CDRL. The clause also details the Contractor's obligations and the Commonwealth's rights with respect to actioning data items.

Further Reading: Nil

ANNEX D – LIST OF MSR CHECKLISTS

Status: Core

Purpose: To provide checklists of Commonwealth requirements to be addressed at MSRs.

Policy: Nil

Guidance: This Annex identifies the checklists that are invoked by the SOW for MSRs. Each MSR Checklist defines review entry criteria, a checklist of issues to be addressed during the review, and a set of exit criteria for that review.

Although the standard MSR Checklists should be suitable for use, if the Commonwealth Representative needs to tailor a checklist, the modified checklist should be included in this annex. Additionally, if the project needs new MSRs for which standard checklists do not exist, drafters should generate the additional checklists and add them to the annex.

Drafters need to tailor MSR-CHECKLIST-SAA. Also note that the Approved System Review Plan can tailor the MSR Checklists (except for MSR-CHECKLIST-SAA) to suit the individual needs of the Contract.

Annex C to Attachment B of the draft Contract is the Schedule of Milestone Entry and Exit Criteria for the Milestones identified in the Contract. These Milestone Entry and Exit Criteria specifically refer to the MSR Checklists and that annex needs to be updated for changes made to the MSRs (eg, if a new MSR is added).

Drafter's Action: Drafters are to ensure that Annex D lists the checklists for those MSRs invoked by the SOW.

Drafters are to ensure consistency between the MSR Checklists attached as schedules to SOW Annex D and the Schedule of Milestone Entry and Exit Criteria contained at Annex C to Attachment B to the draft Contract.

Prior to RFT release and again prior to Contract signature, drafters must attach the MSR checklists to the Annex as 'Schedule 1 to Annex D – MSR Checklists'. The checklists may be attached as hard copies or in soft copy, or both, appropriately identifiable as Schedule 1.

Related Clauses: Annex C to Attachment B of the draft Contract provides the Schedule of Milestone Entry and Exit Criteria.

SOW clause, 4.1.5, Conduct of System Reviews, and each clause within the SOW, that requires an MSR to be held.

DID-ENG-RVW-SRP defines the requirements for the System Review Plan, including the conduct of MSRs and the tailoring of applicable checklists.

Refer to the checklists at Annex D to the SOW.

Further Reading: Nil

ANNEX E – KNOWN HAZARDS AT COMMONWEALTH PREMISES

Status:	Optional
Purpose:	To list and summarises, when required, the hazards to health and safety that are or may be present at Commonwealth Premises to be used by the Contractor.
Policy:	Refer to guidance for SOW clause 9.
Guidance:	Guidance is embedded into the template for this Annex, which should be read in conjunction with the guidance for SOW clause 9.
Drafter's Action:	As described in the template.
Related Clauses:	SOW clause 9, HEALTH, SAFETY AND ENVIRONMENT
Further Reading:	Refer to guidance for SOW clause 9.

ANNEX F – COMMONWEALTH DIRECTED TRADE STUDIES

Status: Optional

Purpose: To enable the definition of work and deliverables from Commonwealth-directed trade studies, undertaken for clause 2.6 of the SOW.

Policy: Policy requirements will depend upon the nature of the Trade Study.

Guidance: This Annex supports the function of clause 2.6 of the SOW and guidance for that clause should be reviewed in the first instance. Functionally, SOW clause 2.6 calls up the SOWs for the identified trade studies included in Annex F.

Drafters should include details for each Commonwealth-directed trade study required, either directly within the Annex or as referenced enclosures. Each trade study will have unique aspects; however, for consistency and completeness each trade study requirement should include:

a. an introduction, defining the scope and overall nature of the study;

b. objectives for the study, which may include quantified requirements (eg, to reduce LCC or limit personnel requirements) or more qualitative objectives;

c. background information, including prerequisites (e.g. based on outcomes of another study) or outcomes of studies already undertaken by Defence;

d. the nature of the work required / expected, including identified alternatives, related function and performance requirements, evaluation and trade-off criteria, modelling tools (eg, for LCC impact) to be used, and the need for a risk assessment;

e. how findings and recommendations are to be presented to the Commonwealth; and

f. schedule milestones applicable to the trade studies (eg, requiring the delivery of results before SDR, PDR, etc).

Drafters should note that the checklists for the SRR, SDR, PDR, DDR and SSDDR MSRs include review criteria to address and report on the outcomes of Commonwealth-directed trade studies, if they are applicable. While outcomes are presented at reviews, DID-ENG-SOL-TSREP may also be used.

ODIA provides an opportunity for Commonwealth and tenderer subject matter experts to develop trade study definitions (ie, 'SOWs'). If developed this way, the general requirements for the trade studies and the need to define them in detail should be included within the ODIA process document.

Drafter's Action: Drafters must determine the need to include Commonwealth-directed trade studies (as described in the guidance for clause 2.6 of the draft SOW). When required, either develop the definitions/SOWs for each trade study in Annex F or include the activity to define them during ODIA. If not required, the annex need not be included in the Contract, noting that SOW clause 2.6 would then be replaced with 'Not used'.

Related Clauses: Clause 2.6 of the draft SOW.

DID-ENG-SOL-TSREP.

Checklists for SRR, SDR, PDR, DDR and SSDDR.

Further Reading: Guidance for clause 2.6 of the draft SOW.

EIA-632 Requirement 23, Trade-off Analysis.

ADO LSA Manual Annex A to Chapter 6 of Part 3, Supportability Trade Study Requests, provides a general description but has partially been superseded by updates to *ASDEFCON (Strategic Materiel)*, such as the inclusion of the checklists.

APPENDIX 1 – ASDEFCON (STRATEGIC MATERIEL) TEMPLATE STRUCTURE