MSR ChecklisT

1. Identification: MSR-CHECKLIST-SRR-V5.3
2. TITLE: System Requirements Review Checklist
3. DESCRIPTION and intended use

The objectives of the System Requirements Review (SRR) are to:

validate that the system requirements for both the Mission System and the Support System are complete and well formulated, both individually and in sets;

ensure that the OCD, FPS, System Specification (SS), Support System Specification (SSSPEC), and the Contractor’s designs for the Mission System and Support System are consistent and coherent for this stage of the design process;

ensure that the set of system requirements are consistent with the Commonwealth’s intent; and

ensure that both the Commonwealth and the Contractor have a common understanding of the requirements.

This MSR Checklist sets out the Commonwealth’s requirements and minimum expectations for the conduct of an SRR.

1. INTER-RELATIONSHIPS

The SRR shall be conducted in accordance with the Approved System Review Plan (SRP), and shall be consistent with the following data items, where these data items are required under the Contract:

Systems Engineering Management Plan (SEMP);

Integrated Support Plan (ISP); and

Verification and Validation Plan (V&VP).

Primarily, the SRR addresses the requirements embodied in the:

System Specification (SS); and

Support System Specification (SSSPEC),

which have been derived from analyses of such documents as the Function and Performance Specification (FPS), the Operational Concept Document (OCD), and other regulatory and stakeholder requirements as defined by the SOW.

Note: The Status column in the following three tables indicates whether or not the associated Checklist items are able to be tailored by the Contractor in its SRP, based on the following definitions:

1. Mandatory items are not to be tailored;
2. Highly Desirable items should not be tailored, but may be tailored depending upon the specifics of the Contract and the Contractor’s internal processes; and
3. Optional items may be tailored, based upon the specifics of the Contract and the Contractor’s internal processes.

Notwithstanding the Status assigned to each Checklist item, the items are to be included in the SRP if they are applicable.

1. Review Entry Criteria

| Item | Entry Criteria | Status |
| --- | --- | --- |
|  | 1. All data items required to be delivered before, and linked to, the SRR have been delivered and the Commonwealth Representative considers these data items to be suitable for the purposes of conducting SRR. | 1. Mandatory |
|  | 1. Operational and support concepts and scenarios for the Mission System and Support System have been established and are current. Proposed changes to the OCD to address any inconsistencies between the OCD and the SS/SSSPEC have been received by the Commonwealth Representative. | 1. Mandatory |
|  | 1. Proposed Deviations to the FPS, to address any conflicts between the proposed SS or SSSPEC requirements and the FPS, have been advised to the Commonwealth Representative. | 1. Mandatory |
|  | 1. Stakeholder (eg, sponsor, user, operator, maintainer, other system managers) needs, expectations, constraints and interfaces for all phases of each system’s life cycle have been identified, collected, analysed and transformed into system requirements. | 1. Mandatory |
|  | 1. WHS, Environmental, legal, and other constraints have been analysed to identify system requirements for both the Mission System and the Support System. | 1. Mandatory |
|  | 1. A preliminary Hazard Analysis, covering both the Mission System and the Support System, has been completed and reviewed with relevant stakeholders. | 1. Mandatory |
|  | 1. Verification and Validation requirements and techniques, for both the Mission System and the Support System, have been identified. | 1. Mandatory |
|  | 1. Traceability of specification requirements, for both the Mission System and the Support System, to their source has been established. | 1. Mandatory |
|  | 1. Traceability of Verification methods, for both the Mission System and the Support System, to their source has been established. | 1. Mandatory |
|  | 1. The Contractor has reviewed the Contract plans to assess their consistency with the system requirements. | 1. Highly Desirable |
|  | 1. Action items from any previous System Reviews affecting SRR have been successfully addressed or action plans agreed with the Commonwealth Representative. | 1. Mandatory |
|  | 1. Objective review criteria have been agreed with the Commonwealth Representative for the system-level requirements. Example review criteria include completeness, consistency, singularity, verifiability, traceability and that the level of detail describing the requirements is appropriate and suitable as the basis for Acceptance. | 1. Mandatory |
|  | 1. The Commonwealth Representative has reviewed the system requirements for both the Mission System and the Support System and all comments have been addressed to the satisfaction of the Commonwealth Representative. | 1. Highly Desirable |

1. Review Checklist

| Item | Checklist Item | Status |
| --- | --- | --- |
|  | 1. Were all entry criteria satisfied before starting SRR? | 1. Mandatory |
|  | 1. Has the impact of Approved and pending CCPs been assessed? | 1. Highly Desirable |
|  | 1. Have all Commonwealth Representative review comments against data items delivered for the purposes of SRR, been adequately addressed? | 1. Mandatory |
|  | 1. Are all sources of requirements valid, appropriate and Approved by the Commonwealth Representative? | 1. Mandatory |
|  | 1. Do the system requirements for both the Mission System and the Support System accurately reflect the needs, expectations, constraints and interfaces of stakeholders (eg, sponsor, user, operator, maintainer, and other system managers)? | 1. Mandatory |
|  | 1. Have conflicts between the initial Commonwealth requirements and other stakeholder (eg, government regulatory organisations and other Defence stakeholders) requirements been resolved? | 1. Mandatory |
|  | 1. Are the Mission System requirements necessary and sufficient to ensure that the system can be used in accordance with the operational concepts and scenarios documented in the OCD? | 1. Mandatory |
|  | 1. Are the Support System requirements necessary and sufficient to ensure that the Mission System can be supported in accordance with the operational and support concepts and scenarios documented in the OCD? | 1. Mandatory |
|  | 1. Has an appropriate allocation of functions and requirements between the Mission System and Support System been made (eg, trade-offs associated with the levels of built-in test / diagnostics)? | 1. Highly Desirable |
|  | 1. Have conflicts between the Mission System and Support System requirements been resolved? | 1. Highly Desirable |
|  | 1. Have all assumptions made, with respect to defining system requirements for both the Mission System and the Support System, been analysed to ensure that they are consistent with the systems being designed and developed? | 1. Mandatory |
|  | 1. Are all external interface requirements for the Mission System consistent with the documentation of the external interfaces? | 1. Mandatory |
|  | 1. Are all system interface requirements for the new elements of the Support System consistent with the documentation of the interfaces for the existing support infrastructure? | 1. Highly Desirable |
|  | 1. Do the system requirements, for both the Mission System and the Support System, satisfy the requirements of the Contract and, if applicable, the Contract (Support) (eg, applicable standards, practices, SOW, SEMP and ISP)? | 1. Mandatory |
|  | 1. Are the requirement statements well formulated individually and as sets? | 1. Mandatory |
|  | 1. Is each system requirement for both the Mission System and the Support System:    1. uniquely identifiable; and    2. traceable to its source (eg, FPS, OCD)? | 1. Mandatory |
|  | 1. Do all FPS requirements trace to the Mission System and Support System requirements? | 1. Mandatory |
|  | 1. Do all FPS requirements, which have been modified in tracing to the Mission System and Support System requirements, have adequate rationale supporting the changes? | 1. Mandatory |
|  | 1. Do all Mission System and Support System requirements that have been derived from parent documentation have adequate rationale? | 1. Mandatory |
|  | 1. Do all Mission System and Support System requirements satisfy the agreed objective review criteria? | 1. Mandatory |
|  | 1. Have remaining areas of requirements variances, voids and conflicts been identified and an approach defined to address them? | 1. Mandatory |
|  | 1. Can the Mission System and Support System be verified to show that the systems satisfy their respective system requirements? | 1. Mandatory |
|  | 1. Are the Acceptance Verification criteria agreed with the Commonwealth Representative? | 1. Mandatory |
|  | 1. Are interface requirements for both the Mission System and the Support System defined to an appropriate level of detail for this stage of the Contract? | 1. Mandatory |
|  | 1. Are the system boundaries for both the Mission System and Support System well defined? | 1. Mandatory |
|  | 1. Are all system interfaces well understood and do all external systems have matching expectations for the system? For example, for any external interfaces that are under development, both sides of the interface need to be developed as a coordinated effort. | 1. Mandatory |
|  | 1. Have Logical Solution Representations for both the Mission System and the Support System and their external behaviours been established? Examples of Logical Solution Representations include Functional Flow Block Diagrams, Timelines, and Context Diagrams. | 1. Mandatory |
|  | 1. Are the system Logical Solution Representations internally consistent? | 1. Mandatory |
|  | 1. Are the system Logical Solution Representations of sufficient scope to address the risk areas of the Mission System and Support System? | 1. Mandatory |
|  | 1. Are the initial set of states and modes for the Mission System and Support System adequately defined? | 1. Mandatory |
|  | 1. Have constraints affecting the designs of both the Mission System and the Support System been identified and their impact analysed (eg, critical timing analysis has been completed)? | 1. Mandatory |
|  | 1. Are alternative system and Software architectures for the Mission System being considered? | 1. Highly Desirable |
|  | 1. Are Support System alternatives being considered? | 1. Highly Desirable |
|  | 1. Have potential Support System alternatives been evaluated with respect to Life Cycle Cost (LCC), benefits, and risks? | 1. Mandatory |
|  | 1. Has an initial allocation of Mission System requirements to subsystems been performed to assess the convergence of initial design concepts to a range of viable solutions? | 1. Mandatory |
|  | 1. Has an initial allocation of Support System requirements been made to each of the Support System Constituent Capabilities? | 1. Mandatory |
|  | 1. Have key technologies for the Mission System and Support System Components been identified and their maturity assessed and maturation processes identified where necessary? | 1. Mandatory |
|  | 1. Has a hierarchy of Measures Of Effectiveness (MOEs) for both the Mission System and Support System been developed that derive from critical operational issues and lead to specific performance measures in the SS and SSSPEC? | 1. Highly Desirable |
|  | 1. Have key Technical Performance Measures (TPMs) been identified and reported against? | 1. Highly Desirable |
|  | 1. Has an assessment of the feasibility of Mission System and Support System requirements in terms of technology, design constraints, producibility, deployability, operability, supportability, trainability, disposability, etc, been performed? | 1. Mandatory |
|  | 1. Have Mission System and Support System requirements been analysed with the purpose of minimising LCC, and reducing development schedule and risk? | 1. Mandatory |
|  | 1. Have trade-offs among stated system/subsystem specification requirements/constraints and resulting engineering design requirements/constraints, and logistic/cost-of-ownership requirements/constraints been performed? | 1. Highly Desirable |
|  | 1. Have the results of Commonwealth-directed trade studies been presented, and have the implications for the requirements for the Mission System and Support System been addressed? | 1. Optional |
|  | 1. Have the likely areas for future change or expansion for both the Mission System and Support System over the LOT been considered? | 1. Mandatory |
|  | 1. Have the system requirements for both the Mission System and Support System adequately captured the need for future change or expansion in the likely areas? | 1. Mandatory |
|  | 1. Have the appropriate standards for external interfaces and, if applicable, for internal architecture been considered to ensure the solution for the Mission System is robust over the LOT? | 1. Highly Desirable |
|  | 1. Have quality factors (eg, availability, reliability, standardisation, interoperability and obsolescence) been specified as measurable requirements or prioritised design goals for both the Mission System and Support System Components? | 1. Mandatory |
|  | 1. Has human engineering including personnel numbers, skill levels and workload, both for operation and support, been analysed and adequately addressed in the system requirements for both the Mission System and the Support System? | 1. Highly Desirable |
|  | 1. Have appropriate regulatory issues been addressed in the system requirements for both the Mission System and the Support System? For example, consider:    1. Australian Communications and Media Authority (ACMA) regulatory requirements;    2. environmental requirements;    3. EMI/EMC regulatory requirements;    4. Materiel Safety requirements;    5. system security requirements; and    6. ADF regulatory / assurance framework requirements. | 1. Mandatory |
|  | 1. Have the identified hazards and their classification been Approved by the Commonwealth Representative? | 1. Mandatory |
|  | 1. Have alternative approaches for implementing system security requirements been evaluated? | 1. Highly Desirable |
|  | 1. Have all risks identified prior to SRR been reported against? | 1. Mandatory |
|  | 1. Does the Contractor’s proposed solution for both the Mission System and Support System represent a minimised LCC solution, as demonstrated in accordance with the Approved governing plan for LCC (eg, LCC Management Plan (LCCMP))? | 1. Mandatory |
|  | 1. Have any Contractor-provided proposals to reduce LCC been addressed (eg, as documented in the LCC Report and Model (LCCRM))? | 1. Highly Desirable |
|  | 1. Are Contract plans and schedules consistent with the system requirements for both the Mission System and the Support System? | 1. Highly Desirable |
|  | 1. Has the process for managing changes to the system requirements post SRR been agreed? | 1. Mandatory |

1. Review Exit Criteria

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| Item | Exit Criteria | Status |
|  | 1. All checklist items have been addressed to the satisfaction of the Contractor and the Commonwealth Representative. | 1. Mandatory |
|  | 1. All major problem and risk areas have been identified and resolved and, for minor problems and risks, corrective action plans have been recorded and agreed by the Commonwealth Representative. | 1. Mandatory |
|  | 1. Plans for the next phase are deemed to be realistic and achievable by both the Contractor and the Commonwealth Representative. | 1. Mandatory |
|  | 1. Plans for the measurement and analysis program for the next phase have been agreed by the Commonwealth Representative, including the measures to be collected, associated collection methods, and analysis techniques. | 1. Mandatory |
|  | 1. All risks identified during the course of SRR have been documented and analysed. | 1. Mandatory |
|  | 1. The risks with proceeding to the next phase are acceptable to the Commonwealth Representative. | 1. Mandatory |
|  | 1. All major action items have been closed. | 1. Mandatory |
|  | 1. All minor action items have been documented and assigned with agreed closure dates. | 1. Mandatory |
|  | 1. Review minutes have been prepared, Approved, and distributed in accordance with the Contract. | 1. Mandatory |