

1 INTRODUCTION

1.1 Defence Estate Information

- 1.1.1 E&IG has developed and endorsed the E&IG Information Management Framework, which sets out the how E&IG Information will be governed and managed by the business.
- 1.1.2 The Framework sets out seven information management principles to provide a reference point by which all IM processes, decisions and outcomes can be designed, implemented and assessed.
- 1.1.3 The E&IG IM principles are:
- Business Led – E&IG information is an enterprise level asset - defined by the needs of the business, not defined by the technology solution.
 - Governed – Information assets are governed in a transparent and accountable manner to ensure its business and authoritative value is maintained.
 - Managed – Information assets are actively managed and maintained in accordance with business and technical standards to ensure they are fit for purpose, usable, and available to the business user.
 - Organised – Information assets are structured and connected within a trusted single-source to enable Defence to manage and use the information according to its business requirements.
 - Secured – E&IG information is secured against unauthorised access, change, loss or deletion in order to ensure integrity and protect sensitive information.
 - Used – E&IG information supports enterprise-wide business processes and operating models and is accessible to authorised business users enabling informed business processes and decisions.
 - Quality – E&IG information assets meet quality standards defined by the business.
- 1.1.4 This SDMP is a key element of the management of data within E&IG by defining the specific requirements by which spatial data is to be managed according to the E&IG IM Principles.

1.2 GEMS and the Defence Estate Dictionary

- 1.2.1 The single source of data for Estate and Infrastructure information resides in the Garrison Estate Management System (GEMS). GEMS has been implemented to support the effective management of the Defence Estate by Defence and its Base Services Contractors. Estate data is maintained in GEMS and includes asset data describing the Defence Estate using spatial and non-spatial means.
- 1.2.2 GEMS provides timely and reliable information to support the planning and delivery of estate infrastructure, development of the Defence capability life cycle, the management of estate risks and environmental compliance and the delivery of estate support. GEMS also provides real time exchange of electronic information between Defence and Defence contractors.
- 1.2.3 GEMS is enhanced with basic geo-enabled functions. Geo-enablement provides users with an ability to visualise, contextualise and interpret GEMS information, thereby to

assure its truth and to better understand the relationships, patterns and trends for improved Defence estate decision making. GEMS Geo-enablement involves mandatory application of simple geometry representations that demonstrate existence, shape and location of all geo-enabled GEMS estate master records and transactions. Representative geometries are applied at creation of all master and transactional data, and these are maintained throughout the record lifecycle.

- 1.2.4 GEMS is both a creator and consumer of spatial data that is created by Defence, its stakeholders in industry and government and also commercial sources. These data are visualised, stored, analysed and managed within a GIS information environment that resides both within and alongside the GEMS system.
- 1.2.5 GEMS Geo-enablement will manage business GIS layer updates via workflow tasking, the E&IG GIS will provide the workflow tasking capability (i.e. packaging and issuing data for updates).
- 1.2.6 The SDMP spatial data specifications supports GEMS geo-enablement through the alignment of key spatial dataset with GEMS Estate Business Identifiers (EBI), GEMS data field values and Estate Register Information Model (ERIM) classes.
- 1.2.7 While the SDMP articulates the requirements for spatial data, the ERIM specifies SAP based data requirements. As Defence has Geo enabled its SAP implementation the data set requirements are integrated. This will eventually be reflected in the creation of one data dictionary developed consistent with the IM principles.
- 1.2.8 Refer to Section 15 GEMS Geo-Enabled Objects (features) and Appendix N for further details.

1.3 Purpose of SDMP

- 1.3.1 The Estate and Infrastructure Group (E&IG) Spatial Data Management Plan (SDMP) has been developed to provide standards and specifications for spatial data management and has been developed with reference to spatial standards both within Defence and the spatial industry.
- 1.3.2 The standards and specifications within the SDMP will improve data quality, availability of information and facilitate spatial information dissemination and sharing within E&IG and its stakeholders in the broader Commonwealth, State and Local Government community. With its use, E&IG will achieve a standardised approach to spatial data management that will realise many benefits to both the organisation and its staff including:
 - Consistent and more reliable data that will lead to more informed decision making;
 - Closer integration with other E&IG information systems and Defence spatial data users;
 - Portability of staff skills; and
 - Greater interoperability with organisations outside of Defence.
- 1.3.3 The SDMP provides the Spatial Data Specification for all data stored and managed within E&IG Estate Information Management Systems including but not limited to;
 - the GEMS GIS environment

- the Defence records management system (Objective)
- NSIMS

1.3.4 All spatial data shall meet the SDMP Specification to allow data to be accessed within E&IG Estate Information Management Systems.

1.4 Spatial Data Definitions

1.4.1 Spatial data is information that defines the geographic location and spatial dimension of natural or constructed features on Earth. Spatial data stores geographic locations in vector form as a series of points, lines, polygons and raster images using coordinate systems and topology to record and inform the location of information. Spatial data can be mapped using Computer Aided Design (CAD) or Geographic Information Systems (GIS) software. E&IG conducts business with the assistance of spatial data in many forms and for many different purposes.

1.4.2 E&IG relies on two key or Foundation Spatial Datasets upon which other spatial data is developed and referenced. These key Spatial Datasets types are:

- Master Site Plan Dataset
- Spaces Plan Dataset

1.4.3 A Master Site Plan Dataset should exist for all Defence Properties. It contains the locations of natural and man-made features such as vegetation, water features, buildings, road, runways, and services. This dataset is used to plan and design new infrastructure on properties and is used as a basis for the capture of Land Management data. A sample of data from a Master Site Plan Dataset is shown in Figure 1-1. See Section 3 Master Site Plan Datasets

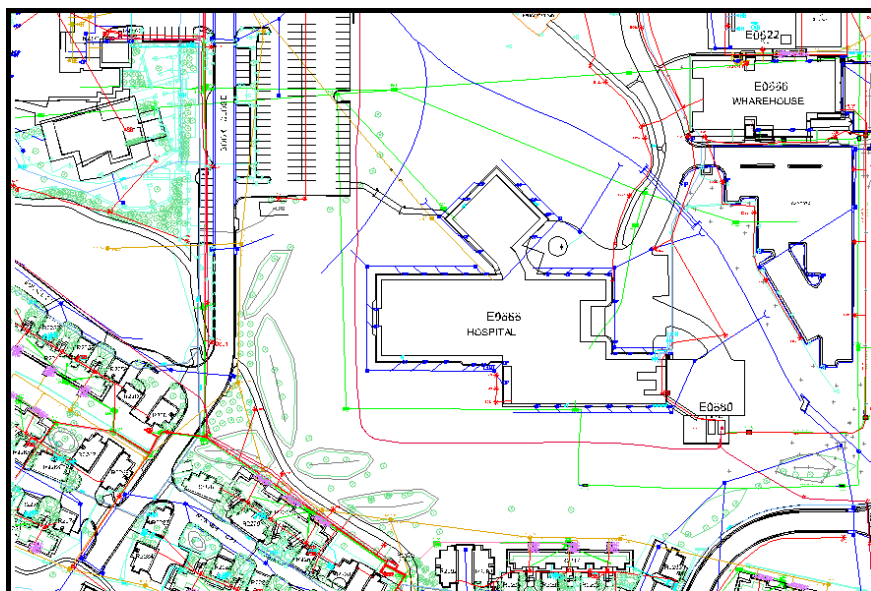


Figure 1-1 Master Site Plan Dataset - example data

1.4.4 A Spaces Plan Dataset (a form of simplified Floor Plan) is created for all buildings to show the size, shape, layout and identification number of spaces and rooms, door openings, staircases and fittings. This plan is distinct from an architectural floor plan. The data captured is used to assist in building management through the allotment of rooms, cleaning services, management of information technology assets and changes

to buildings. A sample of data from a Spaces Plan Dataset is shown in Figure 1-2. See Section 4 Space Plans

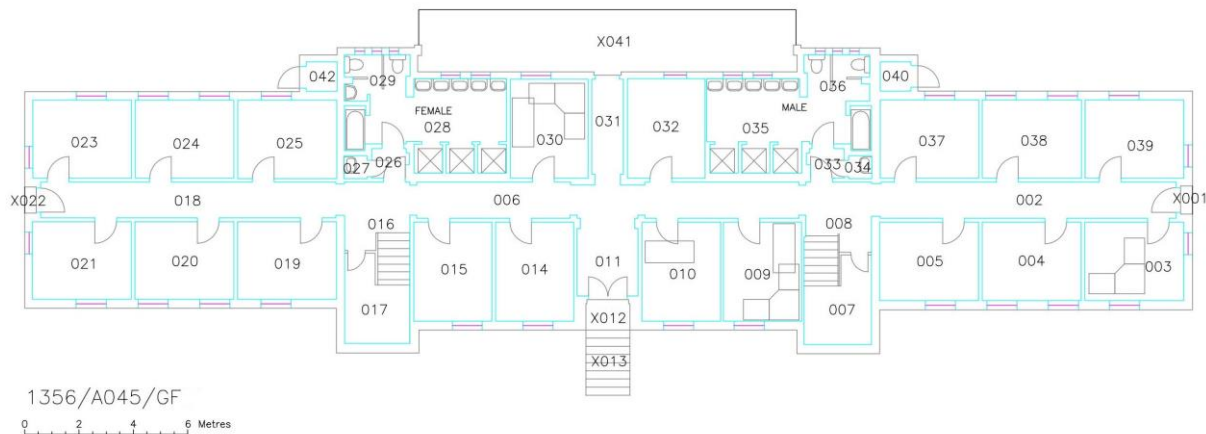


Figure 1-2 Spaces Plan Dataset - example data

1.4.5 Other common spatial data used by E&IG includes:

- Aerial photography and satellite imagery;
- Reference documentation including design and as-constructed design certified (ACDC) plans of E&IG structures, assets and infrastructure, and associated reports; and
- Environmental data and information overlays including licensed areas, environmental monitoring, heritage, contaminated sites data, weed and fire mapping.

1.5 Intended Audience

1.5.1 The SDMP is intended for use by those creating, using and managing spatial data within, and on behalf of, the Estate and Infrastructure Group (E&IG).

1.5.2 There are three key SDMP User Groups that are referred to within the SDMP; these are listed in Table 1-1.

Table 1-1 SDMP User Groups

SDMP User Group	Description of Group
Data Suppliers	E&IG personnel and contractors who create, use and analyse spatial data.
Business Managers	E&IG personnel and head contractors with a responsibility to manage and facilitate use of spatial data within their region or nationally.
Information Stewards	E&IG personnel with responsibility to define and manage data (including and/or related to spatial data) to be made available to Business Managers and Data Suppliers and users.

1.6 Structure of SDMP

1.6.1 The SDMP contains two types of Standards:

- The General Data Specification (Section 2).
- Specialised Data Specifications (Section 3 onwards).

The General Data Specification (Section 2) contains the Data Specification that applies to all spatial data. The General Specification prescribes the data formats, file naming conventions, metadata requirements, the approved datum and coordinate systems, measurement units, accuracy and other E&IG data standards.

Specialised Data Specifications (Sections 3 onwards) contain a set of specifications for specific types of spatial datasets. The specifications for the two E&IG Key Spatial Datasets are detailed, and specifications for other types of Spatial Data.

Appendices provide additional support to the SDMP. The appendices include the Spatial Data Management Specification, the full Metadata Specification and additional appendices to support the general data specification and specialised data specifications.

Table 1-2 summarises the information held within each Section and Appendix.

Table 1-2 SDMP Sections and Appendices

SDMP Section	Description of Contents	Implementation Responsibility
Section 1	Introduction: Introduction to the SDMP, the scope of implementation and background information	All Users
Section 2	General Data Specification Applicable to all spatial data	All Users
Specialised Data Specifications Specifications for specific types of spatial datasets		
Section 3	Master Site Plan Datasets	All users working with data that falls within the scope of the Specification
Section 4	Spaces Plan Datasets	
Section 5	Reference Data	
Section 6	Engineering Detail Survey for Infrastructure and Assets	
Section 7	Land Management Data	
Section 8	Communications Data	
Section 9	Aerial Photography	
Section 10	Satellite Imagery	
Section 11	Master Planning Datasets	
Section 12	Contaminated Sites Data	
Section 13	Environmental Data	
Section 14	Hazards Data	
Section 15	GEMS Geo-Enabled Objects	
Appendices Additional supporting information		

Appendix A	Glossary	For Information Purposes Only
Appendix B	References	For Information Purposes Only
Appendix C	Contaminated Sites Data Standards - Retired	Retired – Refer Appendix K for requirements
Appendix D	Metadata Specification	SDMP Technical Authority
Appendix E	Directory Structure	All users
Appendix F	Scale and Accuracy	For Information Purposes Only
Appendix G	Master Site Plan AutoCAD Standards	All users working with data that falls within the scope of the Specification
Appendix H	Space Plan Standards	
Appendix I	Land Management Spatial Data Standards	
Appendix J	Master Planning CAD Standards	
Appendix K	Environmental Data Model	
Appendix L	Space Plan Labelling Standards - Retired	Refer Estate & Infrastructure Group Defence Signage And Labelling Standard for requirements
Appendix M	Hazards Spatial Data Standards	All users working with data that falls within the scope of the Specification
Appendix N	GEMS Geo-Enabled Objects	
Associated Documents		
<p>A set of template datasets are provided as part of the SDMP to assist in the implementation of the SDMP specification. The templates are available on the Defence Estate Quality Management System (DEQMS) site and include example data that has been collected in accordance with the SDMP specifications.</p> <p>http://www.defence.gov.au/estatemangement</p>		

1.7 Application of the SDMP

- 1.7.1 The SDMP applies to all E&IG business units and E&IG contractors. All are responsible for the appropriate application of standards and the implementation of the SDMP requirement accordingly.
- 1.7.2 The SDMP specification process flow shall be applied as described below in Figure 1-3.

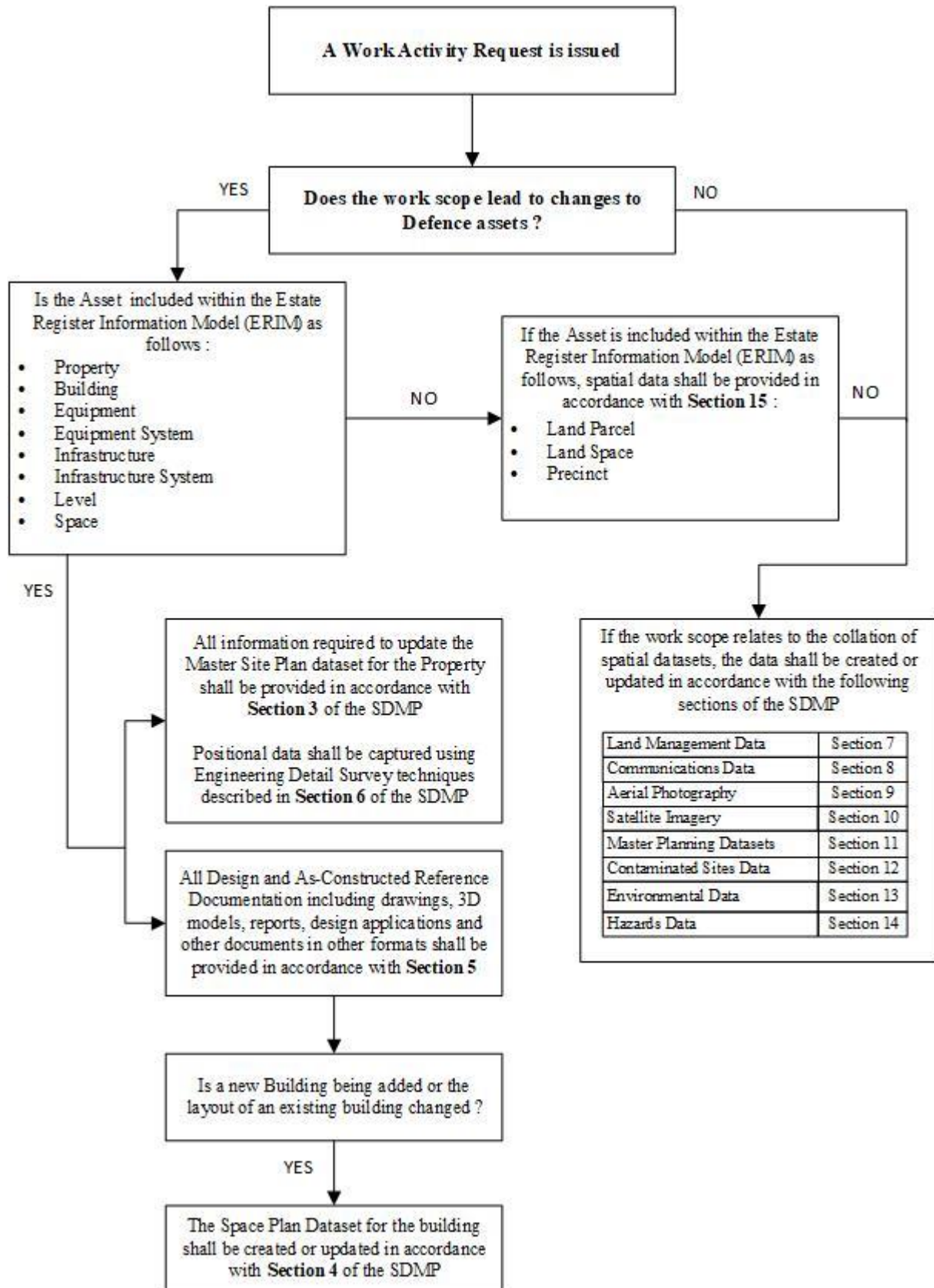


Figure 1-3 Specification Process Flow Diagram

1.8 SDMP Point of Contact

General note about data: Queries related to the SDMP should be addressed to the GEMS and Business Transformation team via email to defenceeiggems.sustainment@defence.gov.au

- 1.8.1 Constructive feedback at any time on any aspect of the SDMP is welcomed from all within its user community, Defence and non-Defence users alike. Feedback can be provided at any time to defenceeiggems.sustainment@defence.gov.au.
- 1.8.2 GEMS has a change request process that covers documentation and system enhancements. Please contact our user support team in the first instance to discuss your requirement: defenceeiggems.sustainment@defence.gov.au.

1.9 Linkages with NSIMS

- 1.9.1 Defence has a suite of information systems brought together through GEMS for estate information. The National Spatial Information Management System (NSIMS) is currently the repository for Defence staff and contractors to place spatial information. NSIMS is located within the Defence Restricted Network (DRN) and is access managed.
- 1.9.2 NSIMS includes the following components:
- A spatial dataset metadata catalogue for searching and locating spatial and non spatial data;
 - A gazetteer for defining and performing searches on geographic extents of a named feature;
 - A viewing tool that allows spatial datasets to be displayed; and
 - A tool to allow datasets to be uploaded to, and downloaded from, the system.
- 1.9.3 All E&IG spatial data shall be stored within NSIMS if the data meets the specifications of the SDMP.

NSIMS is currently being reviewed for retirement but should continue to be used until further instructions are released regarding transition to the alternate solution.

1.10 Spatial Data in the E&IG Information Management Framework

- 1.10.1 E&IG has an Information Management Framework with seven principles to guide information and data management processes and decisions across E&IG:
- Business Led
 - Governed
 - Managed
 - Organised
 - Secured
 - Used
 - Quality

1.10.2 Table 1-3 below explains how the principles apply to spatial data. The E&IG Information Management principles shall be adhered to by all E&IG spatial data user groups.

1.10.3 Refer to Appendix B for policies that the SDMP applies within.

Table 1-3 Principles of the E&IG Spatial Data Policy

Principle	Description	User Responsibility
Business Led	Data shall be gathered in a manner that is independent of specific vendor applications and readily integrated with other systems that adhere to this principle.	To the extent practicable, all spatial data that is provided in reports, and designed and produced for Defence shall have the widest benefit to the broader E&IG business, and to existing data and information systems.
Governed	DRN users shall have access to valid, reliable, complete data they can use with confidence to support improved decision making.	NSIMS shall be used to store and access spatial data to ensure that the most current and complete spatial data is available to DRN users.
Managed	Spatial Information shall be valued and protected as a key Defence asset. Errors or omissions found in any dataset shall be rectified prior to final delivery or reported as soon as practical to the E&IG business owner or NSIMS Custodian.	Arrangements shall be in place to protect E&IG's information from complete or partial loss, or destruction. NSIMS validates spatial dataset against SDMP requirements prior to upload in NSIMS. DRN users should report errors, omissions and improvement actions via the NSIMS issue feedback link.
Organised	The Standards and Specifications within the SDMP apply to E&IG Spatial Data. Specific standards apply to specific spatial datasets including the E&IG Key Spatial Datasets and other spatial data. Metadata documentation shall be collected and maintained. Accurate documentation of spatial data will ensure data is stored and can be retrieved logically and appropriately in support of E&IG operations and decision making.	When considering the relevance and application of the SDMP specification, spatial data providers and managers should consider which section of the SDMP specification shall be applied to spatial datasets. The E&IG Metadata Entry Tool (DSG MET) shall be used to create and edit metadata to provide documentation of spatial datasets. The MET can be downloaded from the DEQMS website and: http://intranet.defence.gov.au/estatemangement/support/MET/Default.asp
Secured	Management of spatial data shall include arrangements to preserve confidentiality, privacy, security and intellectual property rights which will protect the rights of data owners and appropriate sectors of the Defence stakeholder community.	The provision of Defence information is permitted on a "Need to Know" basis. Defence data shall not be provided to a third-party without direct approval and the implementation of a Data License. Data shall be managed in such a way that security is maintained at all times.

Principle	Description	User Responsibility
Used	<p>Spatial information shall be made accessible and leveraged across the Defence Restricted Network (DRN) to enable improved decision making and minimise costs to Defence e.g. due to duplication.</p> <p>Data shall be openly available to all DRN users through the use of NSIMS to maximise the benefit of the data to the organisation as a whole.</p>	<p>NSIMS shall be used to store and access spatial data to ensure that data is shared between DRN users. Data gathering initiatives shall avoid unnecessary duplication of effort, and the consequent risks of unnecessary expenditure and inconsistent data.</p>
Quality	<p>Data shall be collected, stored and disseminated according to Defence Standards and specifications.</p> <p>Data shall be acquired from a point as close to its (the data's) source as possible.</p> <p>Data shall be entered only once into Defence systems. There shall be a single authoritative source for each data element.</p>	<p>The SDMP identifies the applicability and scope of minimum spatial data standards and shall be applied for E&IG Spatial Data.</p> <p>E&IG "Contract Documents" may identify additional specific requirements that shall be applied.</p> <p>All finalised spatial and non-spatial data should be stored within NSIMS to allow E&IG staff to access a single data source and minimise the requirement to obtain multiple versions of data from external sources.</p> <p>NSIMS custodian and user roles shall be used to manage spatial data integrity within NSIMS.</p>