DATA ITEM DESCRIPTION

1. DID NUMBER: -
2. TITLE: Elecromagnetic Environmental Effects Management plan
3. DESCRIPTION AND INTENDED USE

The Electromagnetic Environmental Effects (E3) Management Plan (E3MP) is used to describe the Contractor’s plans, systems and processes for meeting the E3 program requirements of the Contract, including the activities:

associated with the management of Electromagnetic Interference (EMI), Electromagnetic Compatibility (EMC) and, if applicable, lightning protection, Electromagnetic Pulse (EMP), and E3-related hazards (eg, electromagnetic Radiation Hazards (RADHAZ), Hazards of Electromagnetic Radiation to Ordnance (HERO) and Hazards of Electromagnetic Radiation to Fuel (HERF)) for the Materiel System;

required to acquire, validate and analyse data to prevent the occurrence of adverse electromagnetic interactions, including co‑site interference issues and analysis; and

required to evaluate, and eliminate/control adverse E3 interactions throughout the system life cycle, including the interactions:

within the Mission System;

between the Mission System and the Support System, including relevant Support System Components that connect to, or operate in close proximity to, the Mission System; and

between the Mission System and the broader operating and support environments, including (where applicable) other systems and equipment within a higher-level system (eg, a platform).

The Contractor uses the E3MP to:

define, manage and monitor the E3 program, including how it will be undertaken to meet contractual requirements;

ensure that those parties (including Subcontractors) who are undertaking E3-related activities understand their respective responsibilities, the processes to be used, and the time-frames involved;

integrate the E3 activities being performed by Approved Subcontractors with the Contractor’s E3 activities to ensure that a coherent and cohesive E3 program is realised; and

provide assurance to the Commonwealth that the Contractor’s plan for the E3 program will satisfy the E3 requirements of the Contract.

The Commonwealth uses the E3MP to:

gain visibility into the Contractor’s planning for meeting the E3 requirements of the Contract;

gain assurance that the Contractor’s E3 program will satisfactorily meet the E3 requirements of the Contract;

provide a basis for monitoring and assessing the Contractor's E3 program;

determine whether the program will achieve a level of electromagnetic compatibility that is compliant with the E3 requirements of the Mission System Functional Baseline (FBL); and

as input into the Commonwealth’s own planning.

1. INTER-RELATIONSHIPS

The E3MP is subordinate to the following data items, where these data items are required under the Contract:

System Engineering Management Plan (SEMP); and

Integrated Support Plan (ISP).

The E3MP inter-relates with the following data items, where these data items are required under the Contract:

System Specification (SS) for each different type of Mission System;

Support System Specification (SSSPEC);

System Review Plan (SRP);

Verification and Validation Plan (V&VP);

Verification Cross Reference Matrix (VCRM);

all system safety data items (ie, for the safety aspects associated with E3, such as radiation hazards);

Health and Safety Management Plan (HSMP) (eg, in relation to the management of Problematic Sources);

all data items relating to Emanation Security (EMSEC), Information and Communications Technology (ICT) security and cyber security (ie, for security aspects associated with E3);

Equipment Certification to Access Radiofrequency Spectrum (ECARS); and

Contract Master Schedule (CMS).

1. APPLICABLE DOCUMENTS

The following documents form part of this DID, to the extent specified herein:

|  |  |
| --- | --- |
| ARPANS Act | *Australian Radiation Protection and Nuclear Safety Act 1998* |
| ARPANS Regulations | *Australian Radiation Protection and Nuclear Safety Regulations 1999* |
|  | The E3-related standards identified under the Electromagnetic Environmental Effects Program clause of the SOW. |

1. PREPARATION INSTRUCTIONS
   1. Generic Format and Content

The data item shall comply with the general format, content and preparation instructions contained in the CDRL clause entitled “General Requirements for Data Items”.

When the Contract has specified delivery of another data item that contains aspects of the required information, the E3MP shall summarise these aspects and refer to the other data item.

The data item shall include a traceability matrix that defines how each specific content requirement, as contained in this DID, is addressed by sections within the data item.

* 1. Specific Content
     1. Overview

The E3MP shall describe the Contractor’s strategy for satisfying the E3 requirements of the Contract, including the associated objectives, scope, constraints, and assumptions. Any risks associated with the Contractor’s E3 program shall be documented in the Risk Register; however, the E3MP shall describe the risk-management strategies associated with any global risks relating to the E3 program.

The E3MP shall describe the organisational arrangements for conducting the E3 program for the Contract, including identifying any Subcontractors involved in the Contractor’s E3 program and their associated roles and responsibilities.

* + 1. Activities and Standards

The E3MP shall:

1. identify and outline the activities to be conducted as part of the E3 program for each level of the Mission System design, including any specific analysis techniques to be employed;

relate the identified E3 program activities to the specified E3 program outcomes in the Statement of Work (SOW);

describe how E3 program activities will be integrated with other specialty engineering activities and the overall engineering program to achieve concurrent and integrated design outcomes, particularly including the interactions and interrelationships with:

the system safety program in relation to the management of RADHAZ, including hazards to personnel, ordnance and fuel; and

the system security program in relation to the management of EMSEC, ICT security and cyber security;

identify, for each activity, the internal Contractor’s procedures to be used to conduct the identified activities or, where no internal Contractor’s procedures exist, how this procedural deficiency will be overcome; and

identify, for each activity, the positions within the organisation assigned to perform that activity, and provide an outline of the role of each position in the activity.

The E3MP shall identify the applicable legislation and the standards to be utilised by the Contractor and Subcontractors to undertake the E3 program, including:

subject to clause 6.2.2.3, the standards identified at clause 5; and

to the extent not identified at clause 5, standards pertaining to EMI, EMC, RADHAZ, EMP, and lightning and other electrostatic discharges.

Where the standards identified by the Contractor differ from those identified at clause 5, the E3MP shall describe the rationale for use of these standards to the Commonwealth, including how any shortfalls between the Contractor’s proposed standards and the identified standards will be satisfied.

The E3MP shall describe (within annexes to the E3MP for each standard (if required due to the size of the standard)), the Contractor’s tailoring of the identified standards to meet the E3 requirements of the Contract, including:

1. the tasks or processes from each standard to be undertaken, including the rationale for either including or excluding a task or process;

the expected outcomes from each task and/or process to be undertaken;

how the expected outcomes relate to the requirements of the Contract and the Contractor’s proposed solutions for the Mission System and the Support System;

how the outcomes will be documented/captured;

the data required by the E3 program from other programs (eg, engineering program) to enable the outcomes to be achieved;

the tools to be utilised to undertake the tasks or processes; and

the expected role of the Commonwealth in reviewing the outcomes.

The E3MP shall describe how the Contractor’s E3 program will achieve compliance with the applicable legislation identified in response to clause 6.2.2.2, including the Australian Radiation Protection and Nuclear Safety Act 1998 and Australian Radiation Protection and Nuclear Safety Regulations 1999.

* + 1. System Reviews

The E3MP shall describe how E3 program outputs are integrated into System Reviews, cross-referring to the Approved SRP where appropriate.

The E3MP shall outline the procedures for conducting formal and informal reviews of E3 program outputs.

* + 1. Verification and Validation

The E3MP shall describe how the E3 requirements of the Contract will be Verified and Validated, cross-referring to the V&VP where appropriate.