Materiel System SOLUTION (CORE)

Note to tenderers: If the Function and Performance Specification, at Annex A to the draft SOW, specifies a standard (approved by a recognised body), tenderers are to show, in their tender responses, their ability to meet that standard.

If selected to participate in an ODIA or other pre-contract work, the tenderer may be required to further develop any of their response to this Annex in preparation for any resultant Contract.

1. OPERATIONAL DESCRIPTION (Core)

Note to drafters: In tailoring this section, avoid asking for information in ways that would result in tenderers just reflecting the details included in the Operational Concept Document (OCD).

**Critical Operational Issues**

Note to drafters: The OCD identifies Critical Operational Issues (COIs) and scenarios used to define the capability, including fundamental inputs to capability (FIC) and related systems. The requirements below are to be drafted for those COIs, or relevant parts of COIs, for the capabilities of the Materiel System, with external interfaces to provide context. Responses should allow the Commonwealth to assess the merits of each tendered proposal in relation to the COIs and OCD scenarios, and may include models for key aspects of system performance.

* 1. Tenderers are to describe how the proposed solution will […INSERT DESCRIPTION THAT ALLOWS THE COMMONWEALTH TO EVALUATE HOW THE PROPOSAL SATISFIES COI #1…] (refer Critical Operational Issue (COI) #1 in the Operational Concept Document (OCD)).
  2. Tenderers are to describe how the proposed solution will […INSERT DESCRIPTION THAT ALLOWS THE COMMONWEALTH TO EVALUATE HOW THE PROPOSAL SATISFIES COI n…] (refer COI [...INSERT NUMBER...] in the OCD).

**Operational Scenarios**

Note to drafters: Tailor the following clauses for the OCD. If OCD scenarios are broad (referring to other FIC elements and systems) descriptions should focus on the Materiel System. The page limit ensures a concise response; however, the number of pages may be amended for scope and complexity (eg, 1 – 5 pages per scenario). Drafters may identify specific risks in a scenario that are to be addressed.

Note to tenderers: The recommended number of pages for the response to this section, covering all operational scenarios, is [...INSERT NUMBER EG, 10...] pages. Responses should provide operational context, with more detailed aspects included in the response to TDR F-2.

* 1. Tenderers are to describe how the proposed solution will […INSERT DESCRIPTION THAT ALLOWS THE COMMONWEALTH TO EVALUATE HOW THE PROPOSAL SATISFIES OCD SCENARIO 1…] (refer OCD scenario [...INSERT NUMBER...]).
  2. Tenderers are to describe how the proposed solution will […INSERT DESCRIPTION THAT ALLOWS THE COMMONWEALTH TO EVALUATE HOW THE PROPOSAL SATISFIES OCD SCENARIO n…] (refer OCD scenario [...INSERT NUMBER...]).

1. TECHNICAL DESCRIPTION (Core)
   1. Tenderers are to provide a compliance matrix that:
      1. lists each of the requirements specified in Annex A to the draft SOW;
      2. identifies the extent to which the proposed technical solution (comprising the Mission System and the Support System) complies with each requirement, considering the assigned criticality ratings (eg, ‘Essential’ and ‘Highly Desirable’ ratings, etc); and
      3. cross-refers to the tenderer’s responses to this annex, in order to identify the systems, components and functions that illustrate how the requirement would be achieved.

Note to drafters: This section may be tailored to suit the required Materiel System (eg, platforms or a distributed system) and to request any additional information, such as:

1. a description of how key system functionality will be met (including areas such as human factors engineering and human-system interface); and
2. areas of risk that require specific information (eg, for a particular external interface).
   1. Tenderers are to describe their proposed Mission System solution, including:
      1. a description of the key design drivers and key design decisions;
      2. an architectural design description;
      3. a hierarchical description of the system, subsystems, and hardware and Software components, presented in a product breakdown structure (PBS) where:

Note to tenderers: Mission Systems are indentured at level 2 of a Contract Work Breakdown Structure (CWBS) prepared to accord with DEF(AUST)5664A (ie, a PBS forms part of the CWBS).

* + - 1. Mission Systems, including any variants (ie, all major ‘end products’), are identified at level 1 of the PBS, and hardware components are identified down to level 4 (eg, in accordance with DEF(AUST)5664A);
      2. additional lower-level hardware components are nominated by the tenderer, due to their key role in the tendered solution;
      3. Software components are identified at an equivalent level (ie, Software resident on hardware components identified for (i) and (ii)); and
      4. if the Mission System solution includes variants, the subsystems, hardware and Software components that differ from the baseline Mission System are identified,

(ie, where levels 2 to 4 of the PBS comprise the ‘***system components***’);

* + 1. the purpose of each system component;
    2. a description of how the system components interact (eg, functional flow or dynamic relationships) to achieve a functional output (eg, communications, propulsion, etc);
    3. the maturity of the design for each system component (including hardware, Software, internal and external interfaces, as applicable), in accordance with the following table:

| Maturity Classification | Index |
| --- | --- |
| 1. **Innovative Development.** The system component is indicative of the configuration required for the Supplies, is in the early/conceptual stage of development, and features new technologies or processes, or a significant technological advancement. | 1. 1 |
| 1. **New Development.** The system component is indicative of the configuration required for the Supplies, is in the early stages of development, and requires no new technologies or processes. | 1. 2a |
| 1. **Significant Development.** The system component is indicative of the configuration required for the Supplies, is in an advanced stage of development, and requires no new technologies or processes. | 1. 2b |
| 1. **Minor Development.** The system component is indicative of the configuration required for the Supplies, requires a minor change of a type normally required for this item but which does not affect the interfaces of other components or external systems. A similar item (eg, prototype or prior variant) has been successfully fielded. | 1. 3 |
| 1. **Developed – Functional.** The system component has the specific configuration required for the Supplies (without any development required), and has been successfully tested in a controlled environment that is indicative of that required for the system component, including the interfaces with external systems. | 1. 4a |
| 1. **Production Ready.** The system component has the specific configuration required for the Supplies (without any development required), and has been fielded (eg, in user trials) and is verified in the operational role and environment described in the OCD, including the interfaces with external systems. | 1. 4b |
| 1. **In use.** The system component has the specific configuration required for the Supplies (without any development required), is in production, and is in current use with end users operating the system component in the operational role and environment described in the OCD, as intended for the Supplies. | 1. 5 |

* + 1. any assumptions or constraints underpinning the proposed solution, including in relation to Defence systems and infrastructure;
    2. the identification of:
       1. those external interfaces that will be connected to, or that enable interoperation with, other Defence systems, including the maturity of those interfaces; and
       2. the significant internal interfaces, and the maturity of those interfaces;
    3. if applicable, an explanation of technological risks for key areas of evolving technology;
    4. if functionality will be delivered in phases (ie, increased functionality and/or programmed upgrades for successive deliveries of Mission Systems), a description of the delivery schedule, including the increments in functionality and the number of Mission Systems delivered or upgraded in each phase (referring to the response to TDR F-3 if applicable);
    5. if installation into a Defence facility or host platform is required, a description of any significant installation requirements (other than those identified for external interfaces) such as the expected duration of installation activities or the space needed within a host platform that is not a Supply;
    6. cross-references to the tendered risk register for related risks and mitigation; and
    7. [...DRAFTER TO INSERT...].
  1. For clause 2.2f, the maturity classification of a system component is to reflect the maturity classifications of its subordinate components such that:
     1. the system component has the same classification as its most developmental subordinate component when the number of subordinate components (with a unique configuration) requiring any form of development equals or exceeds 25%; and
     2. if a system component includes any developmental components (ie, indices 1 to 3 in clause 2.2f) it will, as a minimum, be classified as ‘minor development’.

Note to tenderers: As an example for clause 2.3a, a system component at PBS level 4 with subordinate components as: one ‘new development’, one (or more identical items) ‘minor development’ and six ‘in use’, would be categorised as ‘new development’ (ie, index 2a).

1. SYSTEM EVOLUTION AND GROWTH (OPTIONAL)

Note to drafters: Include this section if major Materiel System components are likely to be subject to significant change over life and for items with a short production or market life.

Note to tenderers: The Commonwealth intends to review the draft Growth Plan (GP) in conjunction with the strategy for growth, evolution and Obsolescence (refer to TDR E-1.4).

* 1. Tenderers are to provide a draft Growth Plan (GP) in accordance with at least the sections of DID-ENG-MGT-GP identified in Table F-1.

Table F-1: Minimum requirements for the draft Growth Plan

| Section | Name / subject and modifications to scope |
| --- | --- |
| 1. 6.2.2 | 1. Candidate Elements (for significant / high value items / interfaces only) |
| 1. 6.2.3 | 1. Design Aspects (6.2.3.1 and 6.2.3.2 only) |
| 1. 6.2.5 | 1. Support Phase (6.2.5.1 only) |

1. MISSION SYSTEM TECHNICAL DOCUMENTATION TREE (Core)

Note to tenderers: A draft Mission System Technical Documentation Tree (MSTDT) assists the Commonwealth to understand the scope of the development program. If development is to be subcontracted, the MSTDT is to include technical documentation of proposed Subcontracts.

The MSTDT is one list that can be produced by a Master Technical Data Index (MTDI); the Support System Technical Data List (SSTDL) is another. Tenderers may submit a draft MSTDT and draft SSTDL (for TDR F-9.6) as one data file, provided that individual lists can be filtered from the file.

* 1. Tenderers are to provide a draft Mission System Technical Documentation Tree in accordance with DID-ILS-TDATA-MTDI, which includes the specifications and design documentation for the system components identified in response to TDR F-2.2.

1. SOFTWARE LIST (Optional)

Note to drafters: Include this requirement for all Software intensive development programs.

Note to tenderers: The Commonwealth will assess the scope and risk of Software development. In Table F-2, for clause 6.2.1 of the DID, the ‘highest level Software product’ where the criticality and category are the same, means, for example, if all Software products subordinate to ‘Product X’ have the same or a lesser criticality and category, only ‘Product X’ is to be listed.

* 1. Tenderers are to provide a draft Software List (SWLIST) in accordance with at least the sections of DID-ENG-SW-SWLIST, and the ‘modifications to scope’, identified in Table F-2.

Table F-2: Minimum requirements for the draft Software List

| Section | Name | Modifications to scope |
| --- | --- | --- |
| 1. 6.2.1 | 1. Identity | 1. Identified to the highest level Software product where the criticality and category of all subordinate Software products are the same as the Software product listed. |
| 1. 6.2.2 | 1. Location in the System Hierarchy | 1. As per DID, to the level required for clause 6.2.1, Identity (above). |
| 1. 6.2.3 | 1. Description | 1. As per DID. |
| 1. 6.2.4 | 1. Software Criticality | 1. As per DID. |
| 1. 6.2.9.2 | 1. Estimated Total Size | 1. For Application Software to be developed, reused or modified. |
| 1. 6.2.9.3 | 1. Reused Unmodified Code Required | 1. For Application Software to be developed, reused or modified. |
| 1. 6.2.9.4 | 1. Estimated Modified Code Required | 1. For Application Software to be developed, reused or modified. |
| 1. 6.2.9.5 | 1. Estimated New Code Required | 1. For Application Software to be developed, reused or modified. |
| 1. 6.2.11 | 1. Assurance Standard | 1. For Software with a criticality of 0, 1 or 2. |
| 1. 6.2.12 | 1. Software Assurance Level | 1. For Software with a criticality of 0, 1 or 2. |

1. Equipment Certification to Access the Radiofrequency Spectrum (OPTIONAL)

Note to drafters: If access to the Radiofrequency Spectrum could influence tender evaluations, then include this requirement. Defence Spectrum Office (DSO) should be consulted for viable spectrum options for operation in the domestic environment, and interpretation of the ARSP.

Note to tenderers: Systems offering manoeuvrability in the electromagnetic spectrum (EMS) represent a lower risk for Defence.   EMS manoeuvrability that incorporates, but is not limited to, parts of the radiofrequency spectrum designated for Defence purposes in the Australian Radiofrequency Spectrum Plan reduces risk for system operation in the domestic environment.

* 1. Tenderers are to provide a preliminary Equipment Certification to Access Radiofrequency Spectrum (ECARS, also known as form AA763) in accordance with DID-ENG-SOL-ECARS, as tailored by the following requirements:
     1. the information required for the ‘System General Information Page’ and field 5 (Tuning Range(s)) on the ‘Transmitter’ pages, for each system / sub-system that requires access to the Radiofrequency Spectrum for its operation; and
     2. completion of the ‘Transmitter’ fields, and ‘Receiver’ and ‘Antenna’ pages, are optional; however, these details should be provided if this will allow the Commonwealth to properly evaluate Radiofrequency Spectrum requirements. Attach additional information as appropriate.

1. Cyber Security (Optional)

Note to tenderers: The Commonwealth intends to assess the cyber security aspects of the tenderer’s proposed solution in order to gauge the potential existing compliance and identify any possible security risks that may need to be addressed under any resultant Contract.

* 1. Tenderers are to provide Cyber Security Assessment Information in accordance with TDID-ENG-SOL-CSAI.

1. SUPPORT SYSTEM (CORE)

Note to drafters: This section and the clauses listed in Table F-3 may be tailored to project needs. For example, changes may be required if a contractor-owned Spares model is being considered. A single support concept should be used as the basis for tenders and on which to evaluate tenders. If significant alternative support concepts will be investigated, ODIA would be more appropriate for this activity and, if so, a note to tenderers should be added to identify this.

Note that clause 6.2.3.3 of DID-ILS-DES-SSDESC is also applicable to TDR F-9.

Note to tenderers: The following information is being sought to allow the Commonwealth to assess the suitability, risk and the maturity of the proposed Support System.

* 1. Tenderers are to provide a description of their proposed Support System solution in accordance with at least the sections of DID-ILS-DES-SSDESC identified in Table F-3.

Table F-3: Minimum requirements for the draft Support System Description

|  |  |
| --- | --- |
| Section | Name / subject and modifications to scope |
| 1. 6.2.1 | 1. Mission System and Support System Overview (Support System only) |
| 1. 6.2.2 | 1. System-wide Design Decisions (6.2.2.1 only) |
| 1. 6.2.3.1 | 1. Support Locations (6.2.3.1.1 only) |
| 1. 6.2.3.2 | 1. Support Service Management |
| 1. 6.2.3.3 | 1. Support Resources (6.2.3.3.1, 6.2.3.3.2, 6.2.3.3.4 (if known) and 6.2.3.3.5 only) |
| 1. 6.2.4 | 1. Concept of Execution |
| 1. 6.2.5 | 1. Support System Performance (6.2.5.1, 6.2.5.2 and 6.2.5.4 only) |
| 1. 6.2.6 | 1. System Interface Design |
| 1. 6.4.2 | 1. Operating Support |
| 1. 6.4.3 | 1. Engineering Support (6.4.3.1a to 6.4.3.1e only) |
| 1. 6.4.4 | 1. Maintenance Support (6.4.4.1a, 6.4.4.1b and 6.4.4.2 only) |
| 1. 6.4.5 | 1. Supply Support (6.4.5.1a to 6.4.5.1c and 6.4.5.2 only) |
| 1. 6.4.6 | 1. Training Support (6.4.6.1a and 6.4.6.2 only) |

1. SUPPORT RESOURCES (CORE)

Note to tenderers: Full lists of Support Resources are not to be tendered as these can only be finalised under any resultant Contract. Tendered information should enhance Commonwealth understanding of the draft Support System Description and Not-To-Exceed (NTE) prices for Support Resources (refer TDR D-1). The response should focus on items that influence the Support System Description and/or that represent a significant portion of the NTE prices.

* 1. Tenderers are to provide a draft provisioning lists for:
     1. Spares (for Mission Systems and other Support Resources);
     2. Support and Test Equipment (S&TE);
     3. Training Equipment; and
     4. if applicable, high-value (typically special-to-type) Packaging.
  2. The draft provisioning lists, required by clause 9.1, are to list the high-value items and groups of other items (eg, spare ‘engine’ and ‘lower value engine spares’) and include:
     1. the item name for high-value items, or a name for each group of other items;
     2. for existing high-value items, the reference number / part number, and NSN if available;
     3. for high-value items, the estimated/recommended quantity required; and
     4. the unit price and a price for the recommended quantity for each of the high-value items, and the estimated price for each group of other items, in source currencies.
  3. Tenderers are to describe the method and rationale used to determine each draft provisioning list required by clause 9.1, consistent with the requirements and support concepts in the FPS and the OCD, and the draft Support System Description (cross-referencing the response to TDR F-7, for clause 6.2.3.3 of DID-ILS-DES-SSDESC, as applicable).
  4. For each major item of S&TE and Training Equipment or facility (eg, a Software support facility or Training facility) that requires design and development, tenderers are to describe the:
     1. functions to be performed including, if applicable, for different states or modes;
     2. major design drivers, assumptions, constraints and key dependencies, including any interfaces to Defence systems and infrastructure; and
     3. design maturity of the item / facility, summarising the development strategy and referring to the applicable engineering and ILS strategies provided in response to TDR-E.

Note to drafters: If new/modified Commonwealth Facilities are likely, liaise with SEG for further information. Refer to DID-ILS-FAC-FRAR and amend the following clause if required.

Note to tenderers: The Commonwealth wants to understand the scope of new Commonwealth Facilities and/or any changes that may be required.

* 1. **Facilities.** Tenderers are to provide a summary of any new and/or modified Commonwealth Facilities required to enable the Commonwealth, and other parties (including contractors), to undertake the operation, sustainment and disposal of components of the Materiel System.
  2. **Technical Data.** Tenderers are to provide a draft Support System Technical Data List (SSTDL), for Technical Data that would be required for the purposes of in-service support, identifying for each item of Technical Data:
     1. the item reference number, document number or drawing number, as applicable;
     2. the name or title of the item of Technical Data;
     3. its purpose or use (if not self-evident from the name or title);
     4. the product identifier and the name for the system / sub-system / Configuration Item (CI) / end-product (including hardware and Software) to which the Technical Data relates;
     5. the source (eg, internal, or the name of Subcontractor / supplier that would provide it);
     6. if applicable, cross-reference to the ‘Unique Line Item Description’ entry in the tendered Technical Data and Software Rights (TDSR) Schedule (refer TDR C-5);
     7. any other restrictions (eg, Export Approval), identifying the related licence or agreement;
     8. if applicable, the Australian or foreign security classification;
     9. the end-user of the Technical Data (eg, system operator, ADF maintenance unit, Contractor (Support), or other Associated Party); and
     10. its developmental status (eg, existing, to be modified, or to be developed).

1. Problematic Substances in Supplies (CORE)

Note to drafters: Check Defence’s internet site for availability of the Defence policies in the note to tenderers. If no longer available, copies should be provided with the RFT.

Note to tenderers: Refer to the Defence Safety Manual for Hazardous Chemicals, and the Product Support Manual for Ozone Depleting Substances and Synthetic Greenhouse Gases. Problematic Substances in Supplies require Approval under any resultant Contract, which will not be given if it infringes any Commonwealth, State or Territory legislation. The tender response is to identify the following hazards in known system components and, to the extent practicable, the components yet to be selected or developed.

* 1. Tenderers are to summarise the following hazards if they are to be contained in the Supplies:
     1. Hazardous Chemicals comprising:
        1. prohibited carcinogens and restricted carcinogens, each as defined in subregulation 5(1) of the *Work Health and Safety Regulations 2011* (Cth);
        2. those for which use is restricted under regulation 382 of the *Work Health and Safety Regulations 2011* (Cth), including polychlorinated biphenyls; and
        3. lead that, for in-service support, requires a lead process as described by regulation 392 of the *Work Health and Safety Regulations 2011* (Cth);
     2. Dangerous Goods;
     3. Ozone Depleting Substances; and
     4. Synthetic Greenhouse Gases.

1. Environmental considerations (OPTIONAL)

Note to drafters: If there are likely to be significant environmental issues relating to the Supplies, develop clauses to obtain relevant information. Otherwise, replace this clause with ‘Not used’.

* 1. [...DRAFTER TO INSERT...]