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DATA ITEM DESCRIPTION

1. TITLE	**2. Identification Number**
CONCEPT OF OPERATIONS (CONOPS) **(OPERATIONAL SOLUTION DESCRIPTION-OSD)**	PPA-004023-5 22 August 2020

3. DESCRIPTION/PURPOSE OF THE CONOPS

3.1 The Concept of Operations (CONOPS) describes the conceptual approach to achieving an enterprise outcome or capability, focussing on operations, as contrasted to the whole of the solution to the whole of the problem on a life cycle basis. The CONOPS also may contain a description of solution or solution element external behavior (how the solution/solution element will behave, from a user's point of view, in meeting its requirements, to the extent that the design defines behavior more detailed than, and consistent with, solution requirements, and ignoring internal implementation).

3.2 The CONOPS is used to communicate the conceptual solution within the solution development team, to internal and external stakeholders (especially to system and solution element users), to independent verifiers, to acquirers of solution elements, maintainers and modifiers, as applicable.

3.3 The term “system” is used throughout section 5.2 “Content Requirements”, to mean the solution, within the scope of the CONOPS, to provision of the outcome or capability.

3.4 Note that a CONOPS is not an Operational Concept Description (OCD) – see PPA-000950.

4. APPLICATION/INTERRELATIONSHIP

4.1 This Data Item Description (DID) contains the format and content preparation instructions for the data product generated by the performance of design of a solution to the end-use aspects of requirements and goals relating to an enterprise capability. The solution description is at the architectural level of detail, viz the level which defines a concept of implementation, the set of system major solution elements and their interfaces (external and internal to the solution), the key characteristics of each solution element, and the concept of interoperation of solution elements to satisfy solution requirements. The CONOPS is often used where human-based solution elements are involved.

4.2 This DID can be used when the capability developer seeks to define and record the conceptual solution to provide a capability, and wishes to communicate the operational aspects of the solution to stakeholders.

4.3 Alternative to the CONOPS, a System/Subsystem Design Description (SSDD) to DID PPA-003461 may be used. The SSDD describes the whole of the architectural (conceptual) design to the whole of the problem definition (not only the operational aspects of the problem definition). Thus, the SSDD is of broader scope than the CONOPS. The content of the CONOPS is subsumed within this broader scope.

5. PREPARATION INSTRUCTIONS

5.1 General Instructions

The term “document” in this DID means data and its medium, regardless of the manner in which the data are recorded.

5.2 Content Requirements

Content requirements begin on the following page. The numbers shown designate the paragraph numbers to be used in the document. Each such number is understood to have the prefix "5.2" within this DID. For example, the paragraph numbered 1.1 is understood to be paragraph 5.2.1.1 within this DID.

6. SOURCE

1. SCOPE

This section should be divided into the following paragraphs.

1.1 Identification

This paragraph should contain a full identification of the capability/problem/system to which the CONOPS applies, including, as applicable, identification number(s), title(s), abbreviation(s), and version number(s). Where the system to which the CONOPS applies includes variants of the system, the above information should be provided for each variant.

1.2 Background and Intended Use of the System

This paragraph should briefly state the intended use of the system to which the CONOPS applies, relating it to any larger system, of which the system which is the subject of the CONOPS is to form a part. The paragraph should describe the general nature of the system, place the CONOPS in context of the history and future of the system, and identify relevant stakeholders, especially intended user(s).

1.3 System Overview

This paragraph should summarize the conceptual solution of the system as described in the remainder of the CONOPS.

1.4 CONOPS Document Overview

This paragraph should summarize the purpose and contents of the CONOPS and should describe any security or privacy considerations associated with its use.

2. APPLICABLE AND REFERENCED DOCUMENTS

This section should list the number, title, revision and date of each document referenced in the CONOPS. This section should also identify the source of each document not available through normal channels.

2.1 Applicable Documents

This paragraph should list each document, which is invoked in whole or in part within the CONOPS as a part of the conceptual solution description.

2.2 Other Referenced Documents

This paragraph should list each document which is referenced in the CONOPS but which does not comprise a part of the conceptual solution description.

3. DEFINITIONS, ACRONYMS AND ABBREVIATIONS

This section should be divided into the following paragraphs.

3.1 Definitions

This paragraph should list alphabetically and define each word or term used in the CONOPS for which reliance on dictionary definitions or usage in a relevant technical or user community is not appropriate. As a guide, terms which are not likely to be in the vocabulary of the intended users of the CONOPS, terms which have multiple dictionary meanings but only a single CONOPS meaning, specialist technical terms and terms which are used with special meanings should be defined in this paragraph.

Alternatively, this paragraph may specify by name and issue a suitable technical dictionary or other reference publication to be used in the interpretation of terms used in the CONOPS and which meets the criteria above for definition of terms.

3.2 Acronyms

This section should list alphabetically each acronym used in the document, together with the acronym’s expanded meaning.

3.3 Abbreviations

This section should list alphabetically each abbreviation used in the document, together with the abbreviation’s expanded meaning, except that abbreviations within the International System (Si) system of units should not be listed.

4. SYSTEM-WIDE CONCEPTS

This section should be divided into paragraphs as needed to present system-wide conceptual solution decisions (if any), that is:

a. decisions about the system's behavioral conceptual solution (how the system will behave, from a user's point of view, in meeting its requirements, consistent with but in more detail than the requirements, and ignoring internal implementation); and

b. other conceptual solution decisions affecting the selection and specification of solution elements.

Examples of system-wide conceptual solution decisions are:

a. conceptual solution decisions, within the decision envelope permitted by requirements, on system behavior in response to permitted or expected inputs or external conditions, including actions the system will perform, response times and other performance characteristics, and handling of unallowed inputs or conditions;

b. selected approach, within the decision envelope permitted by requirements, to meeting any safety, security, and privacy requirements;

c. conceptual solution decisions relating to common personnel, hardware, software, within the decision envelope permitted by requirements; and

d. other system-wide conceptual solution decisions made in response to requirements, such as selected approaches to providing required configurability, flexibility, availability, and sustainability.

Solution description conventions needed to understand the CONOPS should be presented or referenced.

5. SYSTEM CONCEPT OF OPERATIONS

This section should clearly distinguish, for that part of the overall solution involved directly in mission operations, between:

a. conceptual solution viewed in terms of a defined set of system elements; and

b. conceptual solution from a logical viewpoint (for the CONOPS, functional logic); and

c. conceptual solution from a viewpoint of superimposition of the logic on the physical view, to describe the interaction of system elements via interfaces to meet requirements.

The paragraph titles and numbering below, of 5.1 to 5.5, may be departed from if desired, to better suit the nature of the system, provided that the information as specified is presented in a clear and logical way.

5.1 Identification of System Physical Elements

This paragraph should:

a. identify the elements of the system (hardware, software, human, procedural) serving a direct operational (mission) purpose;

b. show the static (such as "consists of" and "connected to") relationships of the elements. Multiple relationships may be presented; and

c. state the broad purpose(s) of each element.

5.2 System Logical Concept

This paragraph should, to the degree applicable:

a. describe at a conceptual level of detail, the functional concept of solution in terms of a set of functions, related hierarchically to mission-related system functional requirements, such that, at the lowest level(s) of functions in the hierarchy, each function is able to be allocated for its performance to a single system element in 5.1;

b. describe the logical sequence and concurrency in which functions are to be performed, together with the logic of any conditional relationships between functions;

c. describe the interfaces and associated flows of items (information, physical items, forces, supplies, continuous flows of liquids or gasses, etc.) between functions;

d. associate with each allocatable function the applicable set of key performance characteristics;

e. relate allocatable functions to states and modes of the system, where such relationships exist.

5.3 Characteristics of System Elements

This paragraph should:

a. identify, for each system element, the function(s) in the functional concept to be performed by that element. Key measures and values of performance may also be identified; and

b. identify, for each element, key non-functional characteristics required of that element.

5.4 Concept of Interoperation

This paragraph should describe the concept of interoperation among the system elements and relate this concept to key requirements on the system. The description should include diagrams and descriptions showing the dynamic relationships between the elements, that is, how they will interact over time during system operations.

5.5 Interfacing Concepts

This paragraph should be used if any interfacing concepts form an important part of the overall concept of operations. In this case, each relevant concept should be described.

6. NOTES

This section should contain any general information that aids in understanding or using the CONOPS (e.g. background information, evaluation of conceptual solution alternatives, rationale).

A. ANNEXES

Annexes may be used to provide information published separately for convenience in document maintenance (e.g., charts, classified data). As applicable, each annex should be referenced in the main body of the document where the data would normally have been provided. Annexes may be bound as separate documents for ease in handling. Annexes should be lettered alphabetically (A, B, etc.).

Appendices may be used to annexes. Appendices should be numbered numerically (1, 2, etc.).