

# **MARINE CORPS SYSTEMS COMMAND**



## **MARINE CORPS TRANSITIONAL COMMUNICATIONS ARCHITECTURE (MCTCA)**

**06 February 2004**

# **Marine Corps Transitional Communications Architecture (MCTCA)**

MCTCA-04-Ver1

06 February 2004



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# Marine Corps Transitional Communications Architecture (MCTCA)

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# Marine Corps Transformational Communications Architecture User's Guide

## 1. Introduction

This User's Guide provides an explanation of the Marine Corps Transformational Communications Architecture's (MCTCA) organization and how to use the views and the OSI Reference Model wall chart, in concert, to create the required C4I Support Plan (C4ISP) operational, system, and technical views for a software application program. The DoD Architecture Framework 2.0 is the baseline reference for the MCTCA views addressed in this user's guide. These views provide a construct with "pick list" options to select from, thereby standardizing architecture system and technical data across C4ISP views created for Marine Corps software application programs. The goal of the MCTCA is standardization of application C4ISP operational, system, and technical views allowing project officers to streamline their required C4ISP development. In paragraph 3 are the completion instructions "How to Use the MCTCA C4ISP Template...Steps to Success."

## 2. MCTCA Organization

a. The MCTCA encompasses three scenarios (Figure 1):

- Supporting Establishment (SE) User to Deployed User,
- SE User to SE User, and
- Deployed User to Deployed User.

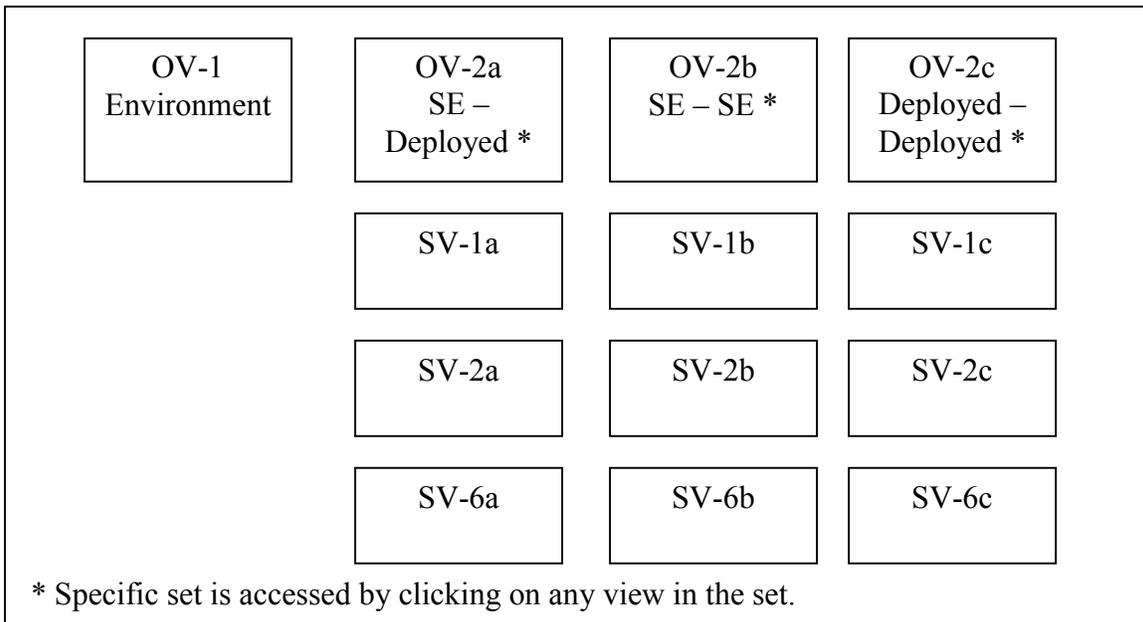


Figure 1. MCTCA Mapping Diagram

- b. Consistent Construct Presentation (CCP). For each of the three scenarios a separate set of templates (OV-2, SV-1, SV-2, and SV-6) is available. They are identified by “a” for SE-Deployed, “b” for SE to SE, and “c” for Deployed to Deployed users. Each of the scenarios is presented in a similar construct, as follows:
- (1) The OV-1 provides an overall, high level, view of the architecture from which the three scenarios are derived, it is applicable to all scenarios.
  - (2) The OV-2 depicts each scenario as a specific instance identified “a”, “b”, and “c” at a macro level establishing the operational nodes and depicting the flow of required information exchange between operational nodes.
  - (3) The SV-1 is based on the OV-2 lay-down for the C4ISP subject application. The SV-1 sets forth a format establishing the baseline data elements comprising the network and application lay-down.
  - (4) The SV-2 and SV-6 provide standardized CPP lay-downs with selection “pick list” options for each of the SV-1 format identified data elements. These lists are intended to standardize data choices and make the creation of required C4ISPs views simpler for the project officer. The embedded selection lists comprise the standards and equipment from which a project officer selects the data defining his application, related connectivity and application interfaces. In cases where no listed pick is applicable, the category “Other” provides for inclusion and capture of standard/equipment exceptions.
  - (5) The TV-1 provides the Marine Corps baseline standards from which the application’s related standards are identified and can be extracted, as required. It was created from the Joint Technical Architecture (JTA) version 5.0.
  - (6) Additionally, a supporting visual tool in the form of an OSI (7 Layer) Reference Model depiction provides a visual tool to support MCTCA users. It is fully compliant with the JTA, but is based upon the OSI Reference Model rather than the Technical Reference Model (TRM) reflected in the JTA. As such, not all the standards listed will be reflected in the JTA. The differences have two explanations: either the standard is in an area not covered by the JTA, or the cited standard is “below the radar” of the JTA. This occurs because the JTA is intended as a steering mechanism, and provides granularity to the lowest level of ambiguity, not necessarily to the bottom of the OSI stack.
  - (7) Lastly, a Glossary/Acronym list provides to the MCTCA user an understanding of the technical material within the main portion of the documentation.

### **3. How to Use the MCTCA C4ISP Template...Steps to Success**

The following *MCTCA C4ISP Template...Steps to Success* provides instruction on the required actions to be taken to produce the MCTCA C4ISP architecture views.

**Step 1 OV-1.** The OV-1 template reduces each interface on the system's OV-1 to its simplest form.

**Step 2 OV-2.** The OV-2 template requires selecting from the three scenarios, "OV-2 a", "OV-2b", and "OV-2c," the depiction or depictions applicable to the application of interest. This determines how many scenario variations are required to be completed of the respective SVs. If more than one scenario is required, then steps 3 through 6 are repeated for each selected scenario. The selected OV-2 or OV-2s are included in the appropriate part of the C4ISP document.

**Step 3 SV-1.** The SV-1 template derives from the OV-2 depiction(s) and establishes the baseline upon which the SV-2 is constructed. It requires no action other than matching the appropriate sub-view to each OV-2 sub-view and including it in the appropriate part of the C4ISP document.

**Step 4 SV-2.** The SV-2 template provides basic data based on the SV-1 construct and requires action to provide program and system data manually, or selected from "pick list" options. The SV-2 matrix column headings are the same as established in SV-1. These columns are sequentially numbered to facilitate cross-reference to user instructions regarding completion.

- Columns 1 and 10 require no action.
- Columns 2 and 9 require action to manually input the C4ISP subject application and version of interest data (Column 2) and the application or applications and version(s) the Column 2 application of interest must interoperate with, to include itself if applicable (Column 9).
- Columns 3 and 8 require action to identify the hardware system related to the respective applications in Columns 2 and 9 based on the "pick list" data provided. Not applicable "pick list" items should be deleted.
- Columns 4 and 7 require action to select the DISN Services most closely identifying the network or networks that will be used for connectivity. Columns 4 and 7 should be mirror images of each other. Not applicable "pick list" items should be deleted.
- Columns 5 and 6 require action to select from the "pick lists" the transmission paths used for connectivity. Not applicable "pick list" items should be deleted.

- The use of the “Other” as a selection requires action to manually enter the new choice specifically where it fits within the template construct. Any new choice (Other) identified will be reviewed by SE&I, MCSC for its appropriateness for incorporation into an existing “pick list,” thereby providing a more comprehensive description of the MCTCA.
- Relationship between SV-2 and SV-6. The SV-2 Columns 1 through 10 provide a numerical coding sequence to be used to derive the SV-6 Column 1 required connectivity string or strings to be defined between the identified L01 and E01 users. This coding is a “short hand” method used to relate SV-2 data string or strings to the SV-6 requirement for expanded data.

**Step 5 SV-6.** The SV-6 template requires action through making selections from the provided “pick lists.” It is organized into three segments each comprised of several data columns: Systems Information (Columns 2 through 8), Infrastructure Systems Information (Columns 9 through 11), and External System Information (Columns 12 through 15). Completing the SV-6 template expands on defining the network/application structure on which the application of interest is to operate. The SV-6 columns are sequentially numbered to facilitate cross-reference to user instructions regarding their completion.

- Column 1 requires action to insert manually, based on the SV-2 coding, the identity of the connectivity string or strings related to the application of interest and its interface with each application identified in the SV-2 Column 9. An example of a connectivity string based on the codes related to SV-2 selections is: L01-SE01-C01-C01-ST01-E01.
- The SV-6 Systems Information Segment (Columns 2 through 8)
  - Column 2, in order to complete it, requires action to just replicate the data from SV-2 Column 2.
  - Columns 3 and 4 require action to select the protocol or message standard and hardware system respective OSI Layers “pick list” data, related to the application of interest. The data provided in Columns 3 and 4 expands on the data identified in the SV-2 Columns 2 and 3, respectively. Not applicable “pick list” items should be deleted.
  - Columns 5, 7, and 8 require action to select from the “pick lists” the Frequency of Exchange, Maximum Security of System, and Type of Encryption data. Not applicable “pick list” items should be deleted.
  - Column 6 requires action to replicate the data from SV-2 Column 4.
- Infrastructure Systems Information Segment (Columns 9 through 11)

- Column 9 requires action to select from the “pick list” based on the SV-2 Column 5 data selection. Not applicable “pick list” items should be deleted.
  - Columns 10 and 11 require action to select the data based on the Column 9 choice. Data is already resident in Columns 10 and 11 related in parallel to the Column 9 data choices. Consequently, it defaults based on the first column selection. Not applicable “pick list” items should be deleted.
- External System Information Segments (Columns 12 through 15)
  - The use of the “Other” as a selection requires action to manually enter the new choice specifically where it fits within the template construct. Any new choice (Other) identified will be reviewed by SE&I, MCSC for its appropriateness for incorporation into an existing “pick list,” thereby providing a more comprehensive description of the MCTCA.
  - Column 12 requires action to replicate the same data as in the SV-2 Column 7. Not applicable “pick list” items should be deleted.
  - Columns 13 and 14 require action to identify the hardware system and protocol or message standard respective OSI Layers “pick list” data related to the E01 User application. The data provided in Columns 13 and 14 expands on the data identified in the SV-2 Columns 8 and 9, respectively. Not applicable “pick list” items should be deleted.

**Step 6 TV-1.** SE&I Division, C4II Directorate, Marine Corps Systems Command prepares the TV-1. The TV-1 is used to capture the standards used to enable interoperability for information transfer between systems. The TV-1 further defines the standards that were selected in the SV-2 and SV-6.

#### **4. Bottomline**

The SE&I Division stands ready to provide guidance, answer questions, and provide C4ISP review and comment on C4ISPs during its development, to include, required architecture views produced to support them.

# **Appendix**

## **A - MCTCA Scenarios**

*TAB*

*1 - Supporting Establishment to Deployed User*

*TAB*

*2 - Supporting Establishment to Supporting Establishment*

***TAB***

***3 - Deployed User to Deployed User***

## **Appendix**

### **B - OSI (7 Layer) Reference Model**

## **Appendix**

### **C - TV-1 – Technical Architecture Profile**

## **Appendix**

### **D - Glossary/Acronyms**