Attachment 0052

Future C4I Systems Growth

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POTENTIAL FUTURE C4I SYSTEMS GROWTH REQUIREMENTS:

The following list of potential future requirements shall be used for Future C4I Systems Growth Analysis. Wherever the term "PDFOV" is used below, refer to the requirement in the JLTV Purchase Description (Attachment 1).

General
The JLTV display and processing subsystem solutions will consist of a combination of the following additional items in addition to those required in PDFOV-7691: - Enhanced Modular Computing Unit (EMCU) - dedicated expandable computer processing for specialized applications. - Auxiliary Display Units (ADU)(s) - display only and uses external central vehicle computer system (e.g. EMCU) for processing
The EMCU and ADU shall be included in the "other computing assets" defined in PDFOV-7756.
Auxiliary Display Unit (ADU) Kit
The ADU shall also be able to accomplish the function defined in PDFOV-1821.
The ADU shall also be able to accomplish the function defined in PDFOV-1943.
The ADU shall also be able to accomplish the function defined in PDFOV-7839.
The ADU shall also be able to accomplish the function defined in PDFOV-7840.
The ADU shall also meet the positioning requirements defined in PDFOV-7668.
The ADU installation shall not take longer than one (1) man-hour at Field Level maintenance. Assume testing will be conducted IAW TOP 2-2-707.
The ADU (when paired with the EMCU) shall meet all the CSDU display functionality requirements (not computing/interface requirements).
CSDU Kit
The CSDU common hardware shall be software configurable (re-image) to support BOTH SECRET/UNCLASSIFIED security enclaves depending on mission role, as well as the functions defined in PDFOV-7742.
EMCU Kit
The EMCU shall also be able to accomplish the function defined in PDFOV-8463.
The EMCU shall also be able to accomplish the function defined in PDFOV-7710.
The EMCU installation shall not take longer than one (1) man-hour at Field Level maintenance. Assume testing will be conducted IAW TOP 2-2-707.
The EMCU provides a centralized computer asset for any specialized vehicle applications that need a significant amount of processing and expandability which cannot be met using Smart Display(s) alone. The computing platform when combined with ADU provides rear seat occupants battle command workstations and additional processing to the CSDU and ASDU.
The EMCU shall be a modular (at the component board / subsystem level) computing platform using a OpenVPX backplane architecture.
The EMCU shall provide multiple dedicated processor component boards to distribute the application processing loads. Assume testing will be conducted IAW TOP 2-2-505.
The EMCU usability startup time (user can interact with full functionality of the displays) shall be less than four (4) minutes (objective of two (2) minutes) from power on.

EMCU Security and Enclave Classification
The EMCU shall be configurable to support UNCLASSIFIED, SECRET, or BOTH SECRET/UNCLASSIFIED security enclaves depending on mission role. A Cross Domain Access kit and Cross Domain Transfer kit may be used to meet this requirement. Assume testing will be conducted by re-imaging to a different security enclave configuration
EMCU Functionality and Application Hosting
The EMCU shall permit independent access (without manual reconnection techniques) to each of the EMCU processor assets (blades) using the ADU's and C4I display/processing assets (CSDU, ASDU) within the same domain/enclave or through a cross domain solution when equipped.
The EMCU shall not automatically power-up with the JLTV ignition in the run state.
The EMCU shall host and display (with ADU, CSDU, ASDU) all specified CSDU Core Services and Primary Applications and the EMCU Applications listed below concurrently.
The EMCU shall host and display (with ADU, CSDU, ASDU) the Warfighter Information Network-Tactical (WIN-T) network management (EMCU Application).
The EMCU shall integrate, host, display (with ADU, CSDU, ASDU), and control the Command Post of the Future (CPOF) (EMCU Application).
The EMCU shall integrate, host, display (with ADU, CSDU, ASDU), and control the C2PC/JTCW (EMCU Application).
EMCU Hardware and Interfaces
The EMCU processor(s) shall be compatible with hypervisor kernel and virtualization. Assume testing will be conducted by using a blank image and loading virtualization with a Windows and Linux operating systems. The test will determine whether each OS is functional by testing basic I/O, storage, and user input.
The EMCU shall provide IEEE 802.3 compliant Gigabit Ethernet interfaces.
The EMCU shall display (with ADU, CSDU, ASDU) the SA networked video feeds without direct feeds to the EMCU.
The EMCU shall provide a minimum 256 GB removable SSHD(s) with memory cell wear leveling capabilities.
EMCU Growth and Expansion
Each EMCU processor(s) shall not exceed 50% maximum sustained utilization (typical running configuration - Core Services and one Primary Application) per application (when an application is allocated multiple blades) or blade (when a blade is allocated to one or multiple applications).
Each EMCU processor random-access memory shall not exceed 50% sustained utilization (typical running configuration - Core Services and one Primary Application).
The EMCU shall provide a minimum of two (2) spare slots for adding additional boards.

Cross Domain Solution
The C4I display and processing assets (CSDU, ASDU, ADU-EMCU) shall accept a Cross Domain Access kit.
The C4I display and processing assets (CSDU, ASDU, ADU-EMCU) shall accept a Cross Domain Transfer kit.
Cross Domain Access Kit
The JLTV shall be capable of accepting a Cross Domain Access kit which provides an approved Cross Domain Access solution to permit the display and control of different security enclave assets independently on the screens without any manual reconnection (Core Service).
The Cross Domain Access Kit installation shall not take longer than one (1) man-hour at Field Level maintenance. Assume testing will be conducted IAW TOP 2-2-707.
The Cross Domain Access kit shall enable concurrent display and control of multiple security enclaves.
Cross Domain Transfer Kit
The JLTV shall be capable of accepting a Cross Domain Transfer kit which provides an approved Cross Domain Transfer solution to permit the transfer of data between different C4ISR/EW security enclaves (Core Service).
The Cross Domain Transfer Kit installation shall not take longer than one (1) man-hour at Field Level maintenance. Assume testing will be conducted IAW TOP 2-2-707.