

LVC-IA EC WBS/Dictionary		
WBS		Dictionary
1.0	LVC-IA EC	
1.1	LVC-IA Products	
1.1.1	Live Integration Products	
1.1.2	Virtual Integration Products	
1.1.3	Constructive Integration Products	
1.1.4	Gaming Integration Products	
1.1.5	Integrated Architecture Products	
1.2	Program Management	
		Consist of the business and administrative planning, organizing, directing, coordinating, controlling, and approval actions designated to accomplish overall program objectives. These activities include project management; financial management; contract management; integrated baseline review; integrated product teams; configuration management; technical performance measure; risk management; management and technical reviews; and integrated digital environment.
1.2.1	Project Management	
		All activities associated with the overall management and administrative effort necessary to ensure that the requirements of the contract are accomplished for the contract period of performance (PoP). This includes tracking program progresses utilizing metrics; plan, implement, and maintain a life cycle cost (LCC) management process to minimize the system cost and use LCC to conduct trade studies, evaluate system and support alternatives, and select the resource support requirements; define and monitor metrics and technical performance measures (TPMs) to evaluate the performance of each critical technical and management process and conformance of the evolving products with contract requirements and objectives including cost requirements and objectives; prepare, implement, and maintain cost, technical, schedule, and risk management processes which include risk detection and identification, assignment of risk categories, corrective action, tracking of compliance, reporting of status and planning for risk abatement; integrated master plan; integrated master schedule; integrated baseline review; integrated product teams; management and technical reviews.
1.2.2	Contract Management/Subcontract Management	
		All activities associated with the award and management of related subcontracts.

			All activities associated with processes and the capability to manage subcontractors in accordance with the Subcontractor Management Plan. This includes integrating subcontractors into program Integrated Product Teams and program management and tracking systems such as management information systems; ensure the requirements of the contract and subsequent delivery orders are applied to all subcontracts and associate contracts.
	1.2.3	Financial Management	Consist of all efforts required to establish and maintain a cost control system designed to monitor cost and schedule performance, direct budget allocations, provide for resource management and measure progress of individual tasks. This effort includes earned value management, cost collection and reporting as well as support of any Government cost audits.
	1.2.4	Configuration/Data Management	Consist of all activities associated with the establishment, monitoring and administration of change control procedures for established baselines, including collection, processing, distribution, and tracking of modification request forms, establishment and administration of change control boards, and formal audits to compare product to documentation. The effort includes Configuration Management of hardware, software, facilities, data, interfaces, tools, and documentation. Data Management consists of all activities associated with the establishment, monitoring and administration of the Integrated Digital Environment.
	1.2.5	Antiterrorism (AT)/ Operations Security (OPSEC)	All activities that provide awareness, training, and programs to train personnel in the following areas: AT Level 1 training; Access and general protection policy and procedures for contractor requiring common access card (CAC); Iwatch training; Army training certification tracking system (ATCTS) registration for contractor employees who require access to Government information systems; OPSEC program; requirement for OPSEC training; information assurance (IA)/information technology (IT) training; IA/IT certification; performance or delivery in a foreign country; handling or access to classified information; threat awareness reporting program.
1.3	System Engineering		Consist of the technical and management efforts of directing and controlling a totally integrated engineering effort of a system or program including: effort to define the system and the integrated planning and control of the technical program efforts of design engineering, specialty engineering, and integrated test planning; effort to transform an operational need or statement of deficiency into a description of system requirements and a preferred system configuration; technical planning and control effort for planning, monitoring, measuring, evaluating, directing, and replanning the management of the technical program; human factors, maintainability, reliability, system safety, standardization, system analysis, information assurance, and logistic support analysis.

1.3.1	Requirements Analysis (System Design)	All activities to create functional architectures, the allocation of technical requirements and uses the results of the allocation analysis process to develop derived technical requirements. Activities include defining logical analysis models; allocate technical requirements to logical analysis models to form derived technical requirements; resolve or deconflict derived requirements with each logical analysis model and among logical analysis models; assure derived technical requirements are necessary and sufficient; baseline the logical analysis models and derived technical requirements with rationale, decisions and assumptions.
1.3.2	Functional Analysis / Allocation (System Definition Stage)	All activities associated with identification and description in terms of inputs, outputs and interfaces that must be done to fulfill system requirements. They include translating top level requirements into functions needed to accomplish them; decomposing and allocating these functions to lower levels of the system structure; identifying and describing functional and subsystem interfaces; activities to ensure all design system levels have been analyzed, defined and baselined.
1.3.3	Design Synthesis (PDR/CDR)	All activities to transform outputs of stakeholder requirements definition and requirements analysis into alternative design solutions and physical architectures, then select the best alternative into a final design solution that will satisfy the requirements. Output products include System Specification, End Product Specification, Interface Specification, EDR, and CDR.
1.3.4	Assembly, Integration & Test	All activities associated with development site integration, assembly, and checkout of hardware, software and telecommunications components. Included are interface materials and parts required for the in-plant integration and assembly into the system within a Contractors' facilities, and all materials and parts or other interfacing equipment furnished by the Government or Contractor. Verify that the products designed satisfy specifications. Integrate security engineering processes into the design to achieve an integrated secure solution. Functional Configuration Audit (FCA) completed to verify that products have achieved requirements as demonstrated during GAT; that they satisfy the characteristics as specified in specifications, interface specifications, and other baseline documentation; and that test plans and procedures were complied with.
1.3.5	Cybersecurity	All activities associated with developing and maintaining an information assurance and cybersecurity process to guide management and design actions, document decisions, specify and track cyber security requirements, document certification efforts, identify possible solutions, and maintain operational systems security. This includes establishing or adopting standards for managing information assurance and cybersecurity requirements and capabilities and an information system (IS) security engineering approach that emphasizes purposeful design or configuration of security solutions.

1.4	System Development, Test and Evaluation	<p>All activities associated with system development, test and evaluation conducted to demonstrate that all engineering design and development activities are complete, and that the system will meet specifications. This element includes test and evaluation conducted to: (a) demonstrate that the engineering design and development process is complete; (b) demonstrate that the design risks have been minimized; (c) demonstrate that the system will meet specifications; (d) determine whether the engineering design is supportable (practical, maintainable, safe) for operational use; (e) provide test data with which to examine and evaluate trade-offs against specification requirements, life cycle cost, and schedule; and (f) perform the logistics testing efforts to evaluate the achievement of supportability goals, the adequacy of the support package for the system, e.g. deliverable maintenance tools, test equipment, technical publications, maintenance instructions, and personnel skills and training requirements, etc. Development test and evaluation includes contractor and in-house activities associated with this effort, e.g., software validation and verification. All support activities (e.g. technical assistance, maintenance, labor, material, support elements and testing spares, development and construction of those special test facilities, test simulators, testbeds and models required for performance of the developmental tests necessary to prove the design and reliability of the system or subsystem) required during this phase of testing are included.</p>
	1.4.1 Developmental Test and Evaluation	<p>Engineering development tests to provide data on performance, safety, achievement of critical technical parameters, and refinement of hardware configurations, and determination of technical risk; data to verify that the design solution meets the system technical requirements and the system is prepared for successful operational test and evaluation.</p>

	1.4.2	Operational Test and Evaluation	<p>All activities to plan, coordinate, establish and implement a comprehensive test and evaluation (T&E) program to support the government Test and Evaluation Master Plan (TEMP) for the LVC-IA system; implement a continuous integration, test and evaluation strategy in which integration events (IEs) gradually increase in size and functional capability as the system matures. LVC-IA integration activities include Integration Event (IE), Functional Verification Test (FVT), and a System Measurement Performance (SMP) Event that culminate with Government Acceptance Test (GAT). Each IE shall build upon the previous IE and increase system/application operational and technical capability. IEs support not only integration testing but also a verification process. FVT shall ensure that functionality integrated at IEs is operating as designed. The primary focus of FVT is to incrementally assess progress toward meeting all system level requirements. SMP shall introduce levels of loading on the LVC-IA federation in order to observe and measure the performance. The goal of the event is to uncover performance bottlenecks, and to ensure that observation and data collection will support identification and correction of those bottlenecks. During GAT the Contractor shall verify that the products designed satisfy system requirements and specifications.</p>
	1.4.3	Test and Evaluation (T &E)	<p>System T&E refers to the test and evaluation activities which use the production hardware together with the software to validate that the system meets the operational and technical performance requirements as stated in the system specifications. System T&E includes all efforts associated with the design and production of models, specimens, fixtures and instrumentation in support of the T&E program. System test shall include a process to prepare the executable software, including any batch files, data files, or other software files needed to install and operate the software on a newly formatted (blank media) target computer; develop step-by-step testing operations to be performed on items undergoing testing; identify items to be tested, the test equipment and support required, the test conditions to be imposed, the parameters to be measured, and the pass and fail criteria against which the test results will be measured. The test planning and test procedures shall be structured to insure that the LVC-IA capability meets the requirements identified in the systems specification.</p>
1.5	Post Deployment Software Support (PDSS)		<p>All activities that define and provide a PDSS capability and facility to support sustainment of LVC-IA system software and its associated subsystems and components, based on the Government Furnished Property (GFP) list for the PDSS equipment. The PDSS facility shall be able to achieve accreditation at the SECRET level for operation and storage within 1 year of contract award. That includes Help Desk support, PTR Process, Production & Deployment Process, and Maintainer/Operator upgrade training and technical refresh.</p>

	1.5.1	Help Desk	All activities that provide users access to a help desk to solve user problems. The Contractor shall maintain a Help Desk 24/7 support capability. The help desk shall be operationally manned during the scheduled operation hours of the team. The Contractor shall maintain records of reports incidents, derive metrics from the data and compile a monthly report stored on the LVC-IA portal.
	1.5.2	Problem Trouble Report (PTR) Process	Provide staff to perform system and software engineering support service tasks for LVC-IA: process trouble reports; process software change requests; process proposed upgrades to LVC-IA; analyze, design, code, test, integrate and document improvements and enhancements.
	1.5.3	Production & Deployment Process	All production system testing activities conducted prior to fielding; Software updates that include PTR fixes will be directed by the Configuration Control Board (CCB). This effort shall fall under the responsibility of the program's PDSS effort. The CCB shall direct the Contractor to support the verification of changes before fielding. Once PTR fixes and testing are completed, these fixes shall be assigned with an ".xx" nomenclature to signify an interim version release. Subsequently, the PDSS section shall deploy the software to the respective installations and the Contractor shall install and confirm those updates are operating correctly. Installation personnel observations of anomalies or issues shall provide detailed information in the authorized discrepancy form.
	1.5.4	Maintainer/Operator Upgrade Training and Technical Refresh	Provide annual Upgrade Training & Technical Refresh courses for both Maintainers and Operators. Each course will stagger 6 months apart.
	1.5.5	Spares	All activities associated with the acquisition, provisioning, packaging, handling, storage and transportation of deliverable spare components, assemblies and subassemblies used for initial replacement purposes in the system hardware. Includes the repairable spares and repair parts required as initial stock to support and maintain newly fielded systems or subsystems, including pipeline quantities, during the initial phase of service at all levels of maintenance and support.
1.6	Data		All activities associated with program wide data management and coordination, Integrated Digital Environment (IDE) administration and support, maintaining program records, files and artifacts, and support presentation preparation. This includes analysis, design and installation of IDE systems and capabilities. This also includes conducting user training on IDE usage, maintaining IDE hardware and software, and implementation of a data management system to generate, collect, prepare, publish and distribute contractual data with content, format and in quantities specified by the CDRL.

	1.6.1	Technical Publications	All activities required to produce a complete and exportable Operations and Maintenance Manual. This includes all system and subsystem oriented instructions for installation, operation, maintenance and testing; all tools, test equipment and consumable items required to accomplish any maintenance or installation.
	1.6.2	Engineering Data	All data associated with Engineering (AXXX CDRL); all CDRL deliverables are governed by contract DID; all non- CDRL deliverables are available in the LVC-IA Web portal.
	1.6.3	Management Data	All data associated Management (BXXX CDRL); all CDRL deliverables are governed by contract DID; all non- CDRL deliverables are available in the LVC-IA Web portal.
	1.6.4	Supportability Data	All data associated with Logistics (CXXX CDRL); all CDRL deliverables are governed by contract DID; all non- CDRL deliverables are available in the LVC-IA Web portal.
	1.6.5	Data Repository	A Contractor developed and managed Web based electronic data management system to facilitate the electronic data interchange of non-classified data.
1.7		Tech Refresh	All activities required for system assembly, installation and checkout at each site in order to achieve operational status in support of tech refresh. It also includes support activities related to tech refresh and obtaining system operational status.
	1.7.1	Site Coordination	Perform all installation preparatory work; including advising and assisting on-site personnel in any modifications they may be performing.
	1.7.2	Availability/Supportability	Spare parts package adequate to support the system for each year and delivered with the installation teams during fielding and set-up; special tools or test equipment; provide on-site technical support during the fielding at each site; documentation and any other items to operate the system IAW OSAT Procedures but not limited to inspection of hardware and software; Spare Parts List; COTS Manual and associated documentation; Training Materials; New Equipment Training (NET) training.
	1.7.3	Testing	Develop On-Site Acceptance Test (OSAT) Procedures to be used during site acceptance testing; perform a preliminary inspection and test of the equipments to ensure it is functioning properly prior to shipping to the fielding site; report any discrepancies/problems found during the site acceptance test; re-test and verified by the Government prior to site acceptance.
	1.7.4	Training	This element includes the products and aids necessary to accomplish the training objectives. This element also includes training course materials; contractor conducted training and the materials and curriculum required to design, execute, and produce a contractor developed training program. It also includes the materials, courses and associated documentation i.e., computer software, courses, and training aids.

	1.7.5	Equipment	Complete and exportable training support package; integrate training products, materials, and other pertinent information necessary to train in an LVC environment.
	1.7.6	Services	NET, Instructor/Operator and Maintenance Training IAW SOW requirements; annual Upgrade & Tech refresh courses.
	1.7.7	Facilities	Training is conducted at the Government's facility. Activities include site survey, planning, analyses, and trade off studies in order to meet facility requirements (civil, architectural, structural, mechanical and electrical facilities subsystems); review the status of the building or location where the system will be installed; confirm the required positions of equipment, assemblies, cableways, access ways, and any other unique feature, and measure to ensure clearance during the installation; review and confirm the existing and proposed location of power distribution boxes, switches, water and air supply points and air ducting, and other unique building or location features; determine the availability of required services; review and confirm arrangements for hours of work, access to work areas, supporting workshops facilities, and on-site personnel participation; discuss and resolve any outstanding issues pertaining to the installation program.