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ETE Update: ADS Testing of C4ISR Systems Oct 10 2022
The End-To-End (ETE) Test, conducted under the auspices of the Department of Defense Joint Advanced Distributed Simulation (JADS) Joint Test and Evaluation (JT & E), is currently developing a synthetic test environment that can be used for future operational testing and doctrinal development. This synthetic test environment will be used initially to conduct developmental and operational testing of the Joint Surveillance Target Attack Radar System (Joint STARS). As designed and built, it may be used to conduct future testing of systems such as the Common Ground Station (CGS), the All Source Analysis System (ASAS), and the Block II Army Tactical Missile System. This paper will describe progress to date, to include the results of our initial

operational and developmental tests, lessons learned to date, and experience gained in verifying and validating a synthetic test environment using the Department of Defense Verification, Validation and Accreditation (VV & A) Recommended Practices Guide. **C4ISR Architectures, Social Network Analysis and the FINC Methodology** May 17 2023

Compliance with Requirements of the Coast Guard's Deepwater Contract Feb 19 2021

Development and Analysis of Integrated C4ISR Architectures

Jul 19 2023 The U.S. Army continues to struggle with creating doctrinally correct, robust, consistent, and all-inclusive operational, system, and technical views based on the Department of Defense Architecture Framework. Having detailed, integrated, and up-to-date architecture views is essential to answering questions involving alternative system designs and operating procedures, conducting gap, overlap, and connectivity analyses among programs of record, and providing traceable data upon which to base near- and far-term acquisition decisions as the armed services undergo Transformation. This paper presents an overview of the Communications-Electronics Research, Development, and Engineering Center Command, Control, Communications, Computer, Intelligence, Surveillance, and Reconnaissance (C4ISR) methodology for developing and utilizing integrated architecture products for the

purposes of C4ISR System-of-Systems engineering analyses.

Human Centered Computing

Jan 01 2022 This book constitutes thoroughly reviewed, revised and selected papers from the 4th International Conference on Human Centered Computing, HCC 2018, held in Merida, Mexico, in December 2018. The 50 full and 18 short papers presented in this volume were carefully reviewed and selected from a total of 146 submissions. They focus on a

"hyper-connected world", dealing with new developments in artificial intelligence, deep learning, brain-computing, etc.

Space Modeling and Simulation May 25 2021

This book was sponsored by the U.S. Air Force Academy Space Mission Analysis and Design Program with support from program offices at the Air Force Space and Missile Systems Center, the National Reconnaissance Office, the U.S. Department of Transportation, and organizations within the National Aeronautics and Space Administration.

Coalition Interoperability: A Pragmatic C4ISR Approach from the US Army CECOM Security Assistance Perspective

Nov 18 2020 Achieving coalition interoperability is difficult, and competing National interests (military, economic or political) will probably necessitate imposing compromise solutions.

Designing a solution that all respective parties can adopt and adhere to is therefore problematic. To address this problem, a combination of

system architecture and design methodology is employed that emphasizes the use of COTS products. There are several recognizable phases within this approach: (1) operational capability requirement definition, (2) analysis, (3) architecture synthesis, (4) component solution identification and capabilities assessment, and (5) design synthesis. This paper discusses some of the problems involved in defining interoperable coalition system architectures and the authors' approach to circumventing any obstacles. The paper will be presented from the perspective of the U.S. Army CECOM Security Assistance Management Directorate in using U.S. grant funds such as Foreign Military Financing (FMF) to provide solutions for foreign militaries and multinational military organizations.

Proposing C4ISR Architecture Methodology for Homeland Security

Sep 28 2021 This presentation presents how a network architecture methodology developed for the Army's Future Force could be applied to the requirements of Civil Support, Homeland Security/Homeland Defense (CS HLS/HLD). This architecture application design will demonstrate how to link the sensors, command and control, and communications systems of local, state, regional, national and DoD elements. The architecture definitions and specifications of the inter- and intra-agency links would be usable in real-world operations as well as enabling the representation of

CS HLS/HLD scenarios within large scale stochastic simulations (e.g., the Combined Arms and Support Task Force Evaluation Model (CASTFOREM)).

Representation in detailed stochastic simulation allows the evaluation of the impact of proposed hardware or software before acquisition or fielding. This methodology can also be used to develop operational and contingency plans by evaluating different options for possible real world events.

ADS Testing of C4ISR Systems
Feb 14 2023 The End-To-End (ETE) Test conducted under the auspices of the Department of Defense Joint Advanced Distributed Simulation (JADS) Joint Test and Evaluation (JT&E), developed a synthetic test environment that can be used for future operational testing and doctrinal development. This synthetic test environment was used initially to conduct developmental and operational testing of the Joint Surveillance Target Attack Radar System (Joint STARS). As designed and built, it may be used to conduct future testing of systems such as the common ground station (CGS), the All Source Analysis System (ASAS), and the Block II Army Tactical Missile System. This paper will describe the results of our live flight operational test utilizing satellite communications to distribute the synthetic environment and lessons learned to date. Additionally, the experience gained in verifying and validating a distributed synthetic test environment using the

Department of Defense Verification, Validation and Accreditation (VV&A) Recommended Practices Guide will be discussed.

JADS JT&E: End-to-End Test Interim Report Phase 2 Nov 30 2021 The Joint Advanced Distributed Simulation (JADS) Joint Test and Evaluation (JT&E) was chartered by the deputy director, Test, Systems Engineering and Evaluation (Test and Evaluation), Office of the Under Secretary of Defense (Acquisition and Technology) in October 1994 to investigate the utility of advanced distributed simulation (ADS) technologies for support of developmental test and evaluation (DT&E) and operational test and evaluation (OT&E). The program is Air Force led with Army and Navy participation. JADS Joint Test Force (JTF) manning currently includes 18 Air Force, 4 Air Force civilians, 12 Army, and 1 Navy civilian. Science Applications International Corporation and the Georgia Tech Research Institute provide contracted technical support. The program is currently scheduled to end in March 2000. The JADS JTF is directly investigating ADS applications in three slices of the test and evaluation (T&E) spectrum: the System Integration Test (SIT) which explored ADS support of air-to-air missile testing; the End-to-End (ETE) Test which is investigating ADS support for command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) testing; and the Electronic Warfare (EW) Test which is

exploring ADS support for EW testing. The JTF is also chartered to observe or participate at a modest level in ADS activities sponsored and conducted by other agencies in an effort to broaden conclusions developed in the three dedicated test areas. Phase 2, the laboratory test, of the ETE Test is the subject of this summary report. The ETE Test is designed to evaluate the utility of ADS to support testing of C4ISR systems. The test uses the Joint Surveillance Target Attack Radar System (Joint STARS) as one component of a representative C4ISR system. The ETE Test also evaluates the capability of the JADS Test Control and Analysis Center (TCAC) to control a distributed test of this type and remotely m

JADS JT&E: End-to-End Test Interim Report Phase 3 Mar 03 2022 The Joint Advanced Distributed Simulation (JADS) Joint Test and Evaluation (JT&E) was chartered by the deputy director, Test, Systems Engineering and Evaluation (Test and Evaluation), Office of the Under Secretary of Defense (Acquisition and Technology) in October 1994 to investigate the utility of advanced distributed simulation (ADS) technologies for support of developmental test and evaluation (DT&E) and operational test and evaluation (OT&E). The program is Air Force led with Army and Navy participation. JADS Joint Test Force (JTF) manning currently includes 18 Air Force military, 4 Air Force civilians, 12 Army military, and 1 Navy civilian. Science Applications International Corporation and the Georgia Tech Research

Institute provide contracted technical support. The program is currently scheduled to end in March 2000. The JADS JTF is directly investigating ADS applications in three slices of the test and evaluation (T&E) spectrum: the System Integration Test (SIT) which explored ADS support of air-to-air missile testing; the End-to-End (ETE) Test which is investigating ADS support for command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) testing; and the Electronic Warfare (EW) Test which is exploring ADS support for EW testing. The JTF is also chartered to observe or participate at a modest level in ADS activities sponsored and conducted by other agencies in an effort to broaden conclusions developed in the three dedicated test areas. Phase 3, the transition phase of the ETE Test, is the subject of this summary report. 3.0 ETE Test Overview The ETE Test is designed to evaluate the utility of ADS to support testing of C4ISR systems. The test uses the Joint Surveillance Target Attack Radar System (Joint STARS) as one component of a representative C4ISR system. The ETE Test also evaluates the capability of the JADS Test Control and Analysis Center (TCAC) to control a distributed test of th

Machine translation summit ; 3
Jul 27 2021

Product Manager C4ISR On-The-Move Experimentation

Oct 30 2021 Product Manager C4ISR On-The-Move (PM C4ISR OTM) provides a

relevant operational field experimentation venue for the purpose of assessing emerging technologies in a System-of-Systems (SoS) environment. Its charter includes the mitigation of risk for Future Force technologies and the acceleration of technology insertion into the Current Force to support Army transformation. The PM accomplishes this by integrating maturing tech base systems into a holistic SoS architecture, employing early prototypes of objective systems or surrogate and simulated systems as necessary. Technical experimentation and demonstration is then conducted at the component systems level, at the SoS level via scripted end-to-end operational threads, and through unscripted technical assessments involving Soldier role players. Additionally, the PM develops test methodologies, assessment metrics and automated data collection, reduction and analysis techniques to support this experimentation. PM C4ISR OTM is a Research, Development and Engineering Command (RDECOM) organization within the Communications- Electronics Research, Development and Engineering Center (CERDEC) at Fort Monmouth, NJ. This paper seeks to describe the facilities, capabilities and process that the PM employs to conduct its experimentation. Following that it reviews recent experimentation activities and their relevance to critical development and acquisition issues and provides selected

results emerging from ongoing data analysis.

Defense Information

Superiority Dec 12 2022

JADS JT&E: End-to-End Test Interim Report Phase 4

Sep 09 2022 The Joint Advanced Distributed Simulation (JADS) Joint Test and Evaluation was chartered by the Office of the Under Secretary of Defense (Acquisition and Technology) in October 1994 to investigate the utility of advanced distributed simulation (ADS) technologies for support of developmental test and evaluation (DT&E) and operational test and evaluation (OT&E). The program is Air Force led with Army and Navy participation. The program is currently scheduled to end in March 2000. The JADS Joint Test Force is directly investigating ADS applications in three slices of the test and evaluation (T&E) spectrum: the System Integration Test (SIT) explored ADS support of air-to-air missile testing; the End-to-End (ETE) Test investigated ADS support for command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) testing; and the Electronic Warfare (EW) Test explored ADS support for EW testing. Phase 4 of the ETE Test is the subject of this report. The ETE Test was designed to evaluate the utility of ADS to support testing of C4ISR systems. The test focused on the Joint Surveillance Target Attack Radar System (Joint STARS) as one component of a representative C4ISR system. The ETE Test also evaluated the capability of the JADS Test

Control and Analysis Center (TCAC) to control a distributed test of this type and remotely monitor and analyze test results. The ETE Test consisted of four phases. Phase 1 developed or modified the components needed to develop the ADS test environment. Phase 2 used the ADS test environment to evaluate the utility of ADS to support DT&E and early OT&E of a C4ISR system in a laboratory environment. Phase 3 transitioned portions of the architecture to the E-8C aircraft, ensured that the components functioned properly, and checked that the synthetic environment interacted properly with the aircraft and actual light ground station module (LGSM).

Test and evaluation management guide Aug 16 2020

Network-Centric Naval Forces Jun 13 2020 Network-Centric Naval Forces: A Transition Strategy for Enhancing Operational Capabilities is a study to advise the Department of the Navy regarding its transition strategy to achieve a network-centric naval force through technology application. This report discusses the technical underpinnings needed for a transition to networkcentric forces and capabilities.

C4ISR Facilities Apr 16 2023 This book contains the following C4ISR Technical Manuals:TM 5-698-1 Reliability/Availability of Electrical & Mechanical Systems for Command, Control, Communications, Computer, Intelligence, Surveillance, and

Reconnaissance (C4ISR) Facilities (2007)TM 5-698-2 Reliability-Centered Maintenance (RCM) for Command, Control, Communications, Computer, Intelligence, Surveillance, and Reconnaissance (C4ISR) Facilities (2006)TM 5-698-3 Reliability Primer for Command, Control, Communications, Computer, Intelligence, Surveillance, and Reconnaissance (C4ISR) Facilities (2005)TM 5-698-4 Failure Modes and Effects Analysis for C4ISR Facilities (2006) Why buy a book you can download for free? We print this book so you don't have to. First you gotta find a good clean (legible) copy and make sure it's the latest version (not always easy). Some documents found on the web are missing some pages or the image quality is so poor, they are difficult to read. We look over each document carefully and replace poor quality images by going back to the original source document. We proof each document to make sure it's all there - including all changes. If you find a good copy, you could print it using a network printer you share with 100 other people (typically its either out of paper or toner). If it's just a 10-page document, no problem, but if it's 250-pages, you will need to punch 3 holes in all those pages and put it in a 3-ring binder. Takes at least an hour. It's much more cost-effective to just order the latest version from Amazon.com This book includes original commentary which is copyright material. Note that government

documents are in the public domain. We print these large documents as a service so you don't have to. The books are compact, tightly-bound, full-size (8 1/2 by 11 inches), with large text and glossy covers. 4th Watch Publishing Co. is a SDVOSB. For more titles, visit www.usgovpub.com C4ISR for Future Naval Strike Groups Apr 04 2022 The Navy has put forth a new construct for its strike forces that enables more effective forward deterrence and rapid response. A key aspect of this construct is the need for flexible, adaptive command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) systems. To assist development of this capability, the Navy asked the NRC to examine C4ISR for carrier, expeditionary, and strike and missile defense strike groups, and for expeditionary strike forces. This report provides an assessment of C4ISR capabilities for each type of strike group; recommendations for C4ISR architecture for use in major combat operations; promising technology trends; and an examination of organizational improvements that can enable the recommended architecture. *A Stochastic Simulation of a United States Naval Conflict with a Land-Based Opponent* Jun 25 2021 This thesis develops a low-resolution stochastic simulation model to assess the impact of the intelligence, surveillance and reconnaissance components of C4ISR, and strike capabilities on the mission success of a

United States carrier battle group (CVBG). The simulation uses a stochastic approach to model a two-day conflict between a CVBG and a land-based enemy which incorporates the randomness and uncertainty inherent in warfare. The simulation is implemented as a C++ computer program to develop a tool to analytically exercise a prospective new system in order to predict its possible effect on combat operations. Experiments were run which simulated a two-day battle in which the United States CVBG sensor availability, sensor accuracy, and weapons availability were varied to study their affect on the outcome of the battle.

Statistical analysis techniques are used to quantitatively measure the results of the battle as the sensor and weapon parameters change.

Hearings on National Defense Authorization Act for Fiscal Year 2000--H.R. 1401 and Oversight of Previously Authorized Programs, Before the Committee on Armed Services, House of Representatives, One Hundred Sixth Congress, First Session
Dec 20 2020

Developing and Fielding Information Dominance Sep 16 2020 This paper describes the process improvements that comprise the Space and Naval Warfare Systems Command's Horizontal Integration Initiative. It tells how these process improvements are leading to improved C4ISR capability, sustainability, and cost effectiveness as the System Command fields

successive Blocks of its horizontally integrated product line: "IT-21". The process improvements represent a holistic view of end to end capabilities: commonality in hardware, software, and data structure; tight configuration management; built in ILS; and rigorous testing to horizontally integrate shipboard C4ISR designs. The paper recounts how these improvements became the foundation for SPAWAR's IT-21 re-engineering initiative; and discusses development and fielding plans for the Fleet's first fully integrated C4ISR architecture: IT-21 - Block 1. An organizational overview of the IT-21 Block 1 architecture, within its functional enclaves (GENSER, SCI, UNCLAS, Networks, Transport), lists key features of the end to end design package. As Block 1 readies for delivery in 2003, development of its successor architecture, IT-21 Block 2, is already underway. The features of the IT-21 Block 2 design process - requirements analysis, technology insertion, interface planning, and cost/benefit analysis - provide insight into the dynamics which will shape Navy C4ISR in years to come.

Architecture Tradeoff Analyses of C4ISR Products Aug 20 2023 Abstract: "Early evaluation of the architecture of a system or a product line of systems is a low-cost risk reduction method for determining whether the system(s) will achieve its business and quality goals. The Architecture Tradeoff Analysis Method (ATAM) is an

architecture evaluation technique currently evolving at the Software Engineering Institute (SEI). The input to the ATAM consists of a system or product line architecture and the perspectives of stakeholders involved with that system or product line. The output of the ATAM is (1) a collection of scenarios that help specify the context of the system's or product line's use and the product line's evolution, (2) improved architectural documentation (usually), and (3) analysis results (in particular, a set of issues to consider, risks, and potential sensitivity and tradeoff points within the architecture). Currently, there are no generally accepted industry-wide standards for describing a system architecture, and ATAM evaluations are often tailored to the available documentation. The Architectures Directorate of the C4I Integration Support Activity (CISA), Office of the Assistant Secretary of Defense for Command, Control, Communications, and Intelligence [sic] (OASD[C3I]) has defined a framework for architecture development, presentation, and integration to be used across the military services and defense agencies. This framework for Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) is becoming the required method for describing information systems within the Department of Defense (DoD) and other U.S. Government agencies. This report describes how

various C4ISR products can be used in the context of an ATAM evaluation and their relative value for generating quality attribute-specific scenarios required for an ATAM evaluation."

Integrating C4ISR Models Across Different Levels of Abstraction Jan 21 2021

Modeling and simulation has proven an effective tool for analyzing C4ISR systems. C4ISR systems that have been modeled to date include theater, mission, engagement and engineering level systems. However, these models address the C4ISR issues at different levels of detail in time-step, number, and range of variables. Each of these models operates at a relatively fixed level of detail within a well understood framework and is, therefore, relatively easy to simulate and analyze. This means that not just the model, but also the interacting effects of model variables using different levels of detail must be analyzed. To analyze these systems requires more complex tools that can analyze how the choice of value for the stochastic variable, passed between the differing models, impacts the overall simulation behavior. Without this capability, current simulations can only analyze a limited range of possible model results. Data choices that might have a critical impact on model behavior could be missed. The Dynamic Focusing Architecture (DFA) approach is one solution to this problem.

The Coordinated Spiral: Concurrent Modeling and Simulation Development with

C4ISR Systems Jul 15 2020
Currently Modeling and Simulation (M & S) requirements in support of Command, Control, Communications, Computer, Intelligence, Surveillance and Reconnaissance (C4ISR) systems tend to be developed following the effected C4ISR system fielding. The resultant delayed fielding of the supporting M & S not only causes several problems from the viewpoint of the user (i.e., lack of training) but also is a potential advantage lost to both the C4ISR and M & S system developers. The popularity of the spiral development process with its shortened requirement to fielding timelines compounds this problem. M & S development conducted for a recent Joint Expeditionary Force Experiment (JEFX) produced an interface between the Air Warfare Simulation (AWSIM) and the Theater Battle Management Core System (TBMCS) which modified the traditional spiral development process as it occurs between C4ISR systems and supporting M & S. This modified process produced a workable interface faster, which not only provided users training prior to C4ISR system requirements/acquisition and test and evaluation processes. This paper discusses the modified spiral development process, its effects on the JEFX process and presents some lessons learned and suggestions for future modifications.

Machine Detection of Operationally Significant

Cognitive Events for C4ISR.

May 05 2022 A machine capable of detecting cognitively significant events in its user could prevent potential disaster by signaling to commanders that a soldier is under high stress. This project seeks to establish that these cognitive events can be captured in an autonomous fashion through the use of an eye-tracking system. The experiment in this study requires subjects to find a particular person hidden in a sequence of complex images that contain crowded scenes of different people performing different activities. Project tasks included creating the test stimulus, running test subjects, and analyzing the captured data. This analysis indicates that a pupil dilation increase during a period of prolonged fixation occurs when the test subject finds the target person in the stimulus. Additional testing is necessary to validate this finding in a more realistic setting, but this study represents a preliminary step in developing a machine capable of autonomously detecting cognitive events.
Joint C4ISR Architecture Planning/Analysis System (JCAPS). Mar 15 2023 The contractor satisfactorily completed all tasks under both efforts, providing the technology and technical expertise in the development of the Joint C4ISR Architecture Planning/Analysis System (JCAPS) Database Tool. JCAPS is an automated software application designed to support the interoperable, integrated, and cost-effective business practices and capabilities for

warfighters and acquirers across DOD particularly with respect to information technology. Using JCAPS, warfighters can plan, execute and manage C4ISR assets in support of military operations. The final report summarizes the effort. There are two contract numbers listed in block 5 above. In FY 99, there was a cut in funding associated with the JCAPS effort, contract F30602-96-C-0353. It became apparent that based on the funding cut and the way in which we received funds and the type of vehicle that was in place, the best way to support our customer was to convert the contract vehicle to an IDIQ contract. The prime contractor remained the same, there was no break in service and in Sep 1999, F30602-96-C-0353 was converted to F30602-99-D-0264.

Object-Oriented Analysis of a DII COE Simulation Product Line Architecture

Jul 07 2022 The Army has articulated a vision in which simulations will support C4ISR systems through the integration of simulation infrastructure into the Defense Information Infrastructure Common Operating Environment (DII COE) software architecture. Identification of a specific simulation infrastructure product set is the key to developing the technical steps required to achieve this vision. Integrating simulation into the DII COE in a systematic fashion requires the following: (1) reuse by the simulation infrastructure of existing DII COE C4ISR software segments

(2) identification of new segments required to provide DII COE-based simulation capability, and (3) identification of new simulation-enhanced C4ISR functionality not available today in either C4ISR or simulation domains through new DII COE segments. As simulation-enhanced C4ISR systems will use intelligent agent software, there are relevant Future Combat Systems (FCS) implications. FCS C2 systems will need to interact with intelligent agent-based robotic forces and will encounter similar challenges identified for future simulation-enhanced C4ISR systems. This paper describes a general Object-Oriented Analysis based approach, which identifies DII COE segments as software products in a Product Line Architecture. The paper concludes with recommendations for use of the DII COE Simulation Product Line Architecture in achieving the Army simulation to C4ISR interoperability vision.

Portfolio-Analysis Methods for Assessing Capability

Options Apr 23 2021 An analytical framework and methodology for capability-area reviews is described, along with new tools to support capabilities analysis and strategic-level defense planning in the Defense Department and the Services. BCOT generates and screens preliminary options, and the Portfolio-Analysis Tool (PAT) is used to evaluate options that pass screening. The concepts are illustrated with applications to Global Strike and Ballistic

Missile Defense.

Recommendations are made for further defense-planning research.

Agent Based Simulation Seas Evaluation of DoDAF

Architecture Aug 08 2022 With Department of Defense (DoD) weapon systems being deeply rooted in the command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) structure, it is necessary for combat models to capture C4ISR effects in order to properly assess military worth. Unlike many DoD legacy combat models, the agent based model System Effectiveness and Analysis Simulation (SEAS) is identified as having C4ISR analysis capabilities. In lieu of requirements for all new DoD C4ISR weapon systems to be placed within a DoD Architectural Framework (DoDAF), investigation of means to export data from the Framework to the combat model SEAS began. Through operational, system, and technical views, the DoDAF provides a consistent format for new weapon systems to be compared and evaluated. Little research has been conducted to show how to create an executable model of an actual DoD weapon system described by the DoDAF. In collaboration with Systems Engineering masters student Captain Andrew Zinn, this research identified the Aerospace Operation Center (AOC) weapon system architecture, provided by the MITRE Corp., as suitable for translation into

SEAS. The collaborative efforts lead to the identification and translation of architectural data products to represent the Time Critical Targeting (TCT) activities of the AOC. A comparison of the AOC weapon system employing these TCT activities with an AOC without TCT capabilities is accomplished within a Kosovo-like engagement (provided by Space and Missile Center Transformations Directorate). Results show statistically significant differences in measures of effectiveness (MOEs) chosen to compare the systems. The comparison also identified the importance of data products not available in this incomplete architecture and makes recommendations for SEAS to be more receptive to DoDAF data products.

Realtime Initialization of Planning and Analysis Simulations Based on C4ISR System Data Jun 18 2023

Simulations have been used during exercises within analysis and planning cells for much of the past decade. However, the usefulness of such simulations is dependent on the ability to rapidly enter data from the tactical picture into the simulation, for use as a starting point for running analyses. Current methods for pulling in such C4ISR data rely on manual data entry that can introduce errors and take significant time to accomplish. This paper discusses an approach that allows automated initialization of simulations that takes advantage of an existing High Level Architecture (HLA) Runtime Infrastructure (RTI)

interface within the Global Command and Control System (GCCS). During the Navy's Global 2001 wargaming exercise, this approach was used to rapidly initialize the Naval Simulation System (NSS) for use in performing Course of Action (COA) analysis in the Naval Forces (NAVFOR) cell. The introduction of an automated feed from GCCS not only reduced the initialization time required for NSS, but also allowed analysts to evaluate more complex scenarios with larger track groups. A similar approach using the same GCCS HLA interface was successfully demonstrated with the Integrated Theater Engagement Model (ITEM) as part of exercise RSOI in April 02 for United States Forces Korea (USFK).

Manpower and Personnel Support for the C4ISR in the Transformed Division Aug 28 2021 The U.S. Army has created three interrelated initiatives that together impact support for Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR). First is Digitization -- the process of increasing the combat multiplier effect by a more capable C4ISR network. Second is Modularization -- the Army's transformation of its warfighting organization from brigade and division into a Unit of Action and Unit of Employment structure to increase fielding flexibility and effectiveness. Third is the Army's "tail to tooth" reduction program, which has effectively decreased Signal Corps personnel. These initiatives

induced the Signal Corps to change its C4ISR support, thus making it necessary to evaluate the new Signal Corps supporting warfighting operations. When the Army fielded the Stryker Brigade Combat Team (SBCT), the Army Research Laboratory (ARL) conducted an analysis to determine if adequate signal personnel were in place. Those results indicated additional personnel were required in the SBCT. ARL reexamined this issue in light of the current transformation of the Third Infantry Division (3rd ID). The findings show that the 3rd ID has increased or shifted signal personnel levels that were of concern in the SBCT. Although some C4ISR support issues remain, the 3rd ID's new signal personnel levels appear to be appropriate.

[Effects of Terrain, Maneuver Tactics, and C4ISR on the Effectiveness of Long-Range Precision Fires. A Stochastic Multiresolution Model \(PEM\) Calibrated to High-Resolution Simulation](#) Jan 13 2023 This study was motivated by the results of high-resolution simulations of long-range precision fires that were employed against an invader marching through mixed terrain. Although effectiveness was expected to be less than for desert-terrain cases, it proved much less than anticipated (DSB, 1998a,b). It was clear that many factors were at work, so providing a physical explanation and projecting results for other circumstances was not straightforward. We therefore began to develop a

multiresolution family of models to better understand the phenomena, permit the broad-ranging exploratory analysis for which high-resolution simulation is inappropriate, and suggest priorities for field experiments. If successful, our work would illustrate concretely how such a family-of-models approach-coupled with experiments-could be taken routinely to improve military analysis and its underlying military science. This report, then, describes a fast-running, stochastic, multiresolution desktop model (PEM) and its calibration to data from high-resolution simulation. We also describe a simplified and deterministic "Repro model" called RPEM for possible use in more aggregated campaign-level models such as JICM or JWARS. PEM and RPEM could substantially improve the defense community's ability to reflect, in routine analysis, many effects of C4ISR, the maneuver tactics of the invasion force, and relatively detailed characteristics of the long-range fires. However, more empirical work and high-resolution simulations are also badly needed.

Assessing the Value of Information Superiority for Ground Forces - Proof of Concept Jun 06 2022 In this report we examine the importance of Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) systems for ground force maneuver operations. Advanced C4ISR systems are

intended to provide Information Superiority (IS), or the capability to collect, process, and disseminate an uninterrupted flow of information while exploiting or denying an adversary's ability to do the same. However, a growing number of analysts and military operators view Information Superiority not as an end in itself but as a means of achieving what some term Decision Superiority. Decision Superiority is defined as the ability to make better decisions and to arrive at and implement them faster than an opponent can react. Decision Superiority is viewed as the essential or desired output of having IS, and IS is viewed increasingly as important to the command decisionmaking process. Therefore, to evaluate the true military value of C4ISR systems, one should evaluate and take into account the quality of the information provided by C4ISR systems to the command decisionmaking process. For this type of analysis, new IS metrics and new tools are needed. These are the subjects of this project and proof-of-concept model demonstration.

Integrated DoD/C4ISR Architectures: It's Not About the Framework ... Apr 11 2020 The release of CJCSI 3170.01C, CJCSM 3170.01, CJCSI 6212.01C, and the related DoD Instruction 5000.2 regarding the Joint Capabilities Integration and Development System (JCIDS) and Operation of the Defense Acquisition System have brought DoD/C4ISR Architectures (integrated architectures in the

respective documents) to the forefront of the acquisition process via mandate. However, when discussing what constitutes an integrated Architecture, most often the discussion leads directly to the DoD Architecture Framework and its related products. While the Framework plays a large part in providing a common lexicon by which the primitives that compose integrated architectures are described, delving directly into spreadsheets and boxologies misses the point of why we re-creating integrated architectures. This paper will clarify the overarching purpose of integrated architectures, provide associated implications associated with the enterprise portfolios into which they fit, and describe a methodology by which the architecture community can improve the process of developing and maintaining architectures in order to meet the intent of the Clinger-Cohen Act by providing the means for analysis by which one can achieve efficient distribution of limited resources.

[Re-Use of Integrated Dictionary Components for C4ISR Architectures](#) Oct 18 2020 The C4ISR Architecture Framework Products can be developed using mapping between Structured Analysis products and the Framework products and also based on mapping between Object Orientation and Framework products [Levis and Wagenhals, Bienvenue, Shin and Levis, 2000]. Both of these methodologies for architecture design are adequate to obtain essential

and supporting C4ISR products. However, sometimes the architect has to add new capabilities into the existing architecture that contains the products developed using either of the two approaches. If he uses the same approach (either Structured or Object Orientation) to develop the new set of products as was used for the original architecture, then the task of model concordance is not difficult, otherwise it is not easy. This paper discusses the reuse of the components of an Integrated Dictionary developed for the C4ISR products to add new products into the existing architecture. The C4ISR Architecture Framework products are developed using two approaches for a single operational concept, and then the contents of the two integrated dictionaries are compared to find out the similarities and differences.

Maintaining the Information Flow: Signal Corps Manpower and Personnel Requirements for the Battlefield Feb 02 2022

Army transformation depends heavily upon superior Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) to provide a force multiplier. C4ISR requirements also bring electronic systems and technologies to the battlefield in quantities never before used by the Army. In order to function and serve the soldiers, these systems require support personnel predominantly from the unit's Signal Company. To determine if identified signal

manpower levels would adequately support a C4ISR function for the new Stryker Brigade Combat Team (SBCT), an assessment of signal support was conducted. The assessment methodologies were (1) a comparison of the Stryker signal personnel with signal personnel of current units, (2) a comparison of electronic equipment per repairer levels in the SBCT and current units, (3) an analysis of the C4ISR maintenance backlog during an operational exercise, and (4) an analysis of signal personnel questionnaires. Results indicated that the signal personnel assigned to the SBCT may not be sufficient. Manpower for some of the Military Occupational Specialties (MOSs) needs to be increased, specifically the information systems personnel (MOS 74B) and various electronics repair personnel. If the C4ISR is not sufficiently maintained, it will degrade and not provide the expected force multiplier needed by the warfighter.

An Approach for Making JCAPS Conformant to the C4ISR Core Architecture Data Model (CADM) Mar 23 2021

Based on data requirements from the DoD C4ISR Architecture Framework Version 2.0 and from numerous architecture initiatives of the Military Commands, Services, and Agencies derived from the Framework, the C4ISR Core Architecture Data Model (CADM) provides a specification of architecture data expected to be common among two or more DoD

architecture developers. The CADM fully supports all the architecture products specified in Framework 2, including all of Appendix A of the Framework. The CADM supports additional architecture data requirements arising from Command, Service, and Agency architecture databases and data models. Part of the CADM has been extended to form the basis of a new Army Systems Architecture Database. The Joint C4ISR Architecture Planning/Analysis System (JCAPS) has been under development for 3 years and uses part of the CADM in its database design. The specific objective addressed by this IDA report is to determine what changes are required of JCAPS to assure full CADM 2.0 compliance. The report identifies features of the JCAPS 2.1 data model that are seen as barriers for achieving CADM conformance and proposes a new data model to be used for future JCAPS implementations. This new model is electronically embedded in the CADM data model as a view with 107 CADM entities, with additions provided by Army (14 entities) and Navy extensions (1 entity) to the CADM, as well as by JCAPS itself (21 entities and 90 additional attributes for CADM entities). The resulting data model has 143 entities and supports 100 percent of JCAPS 2.1 data requirements. The document provides annexes with data model diagrams describing JCAPS 2.1, the recommended data model, the traceability tables that map JCAPS 2.1 to the recommended

data model, and summaries of work completed by the JCAPS Data Standardization Working Group in 1999 that made partial recommendations for CADM conformance.

Pontevedra..., 1939-1959

Nov 11 2022

Handbook on Enterprise

Architecture May 13 2020 This handbook is about methods, tools and examples of how to architect an enterprise through considering all life cycle aspects of Enterprise Entities. It is based on ISO15704:2000, or the GERAM Framework. A wide audience is addressed, as the handbook covers methods and tools necessary to design or redesign enterprises, as well as those necessary to structure the implementation into manageable projects.

- [Architecture Tradeoff Analyses Of C4ISR Products](#)
- [Development And Analysis Of Integrated C4ISR Architectures](#)
- [Realtime Initialization Of Planning And Analysis Simulations Based On C4ISR System Data](#)
- [C4ISR Architectures Social Network Analysis And The FINC Methodology](#)
- [C4ISR Facilities](#)
- [Joint C4ISR Architecture Planning Analysis System JCAPS](#)
- [ADS Testing Of C4ISR Systems](#)
- [Effects Of Terrain Maneuver Tactics And C4ISR On The Effectiveness Of Long Range Precision Fires A](#)

- [Stochastic Multiresolution Model PEM Calibrated To High Resolution Simulation](#)
- [Defense Information Superiority](#)
- [Pontevedra 1939 1959](#)
- [ETE Update ADS Testing Of C4ISR Systems](#)
- [JADS JTE End to End Test Interim Report Phase 4](#)
- [Agent Based Simulation Seas Evaluation Of DoDAF Architecture](#)
- [Object Oriented Analysis Of A DII COE Simulation Product Line Architecture](#)
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- [Machine Detection Of Operationally Significant Cognitive Events For C4ISR](#)
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- [Compliance With Requirements Of The Coast Guards Deepwater Contract](#)
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- [Hearings On National Defense Authorization Act For Fiscal Year 2000 HR 1401 And Oversight Of Previously Authorized Programs Before The Committee On Armed Services House Of Representatives One Hundred Sixth Congress First Session](#)
- [Coalition Interoperability A Pragmatic C4ISR Approach From The US Army CECOM Security Assistance Perspective](#)
- [Re Use Of Integrated Dictionary Components For C4ISR Architectures](#)
- [Developing And Fielding Information Dominance](#)
- [Test And Evaluation Management Guide](#)
- [The Coordinated Spiral Concurrent Modeling And Simulation](#)

[Development With C4ISR Systems](#)

- [Network Centric Naval](#)

[Forces](#)

- [Handbook On Enterprise Architecture](#)

- [Integrated DoD C4ISR Architectures Its Not About The Framework](#)