

**JOINT WARFARE SYSTEM (JWARS)
OPERATIONAL REQUIREMENTS
DOCUMENT (ORD)**

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JOINT WARFARE SYSTEM (JWARS) OPERATIONAL REQUIREMENTS DOCUMENT (ORD)

1 . GENERAL DESCRIPTION OF OPERATIONAL CAPABILITY

a. Background

(1) In February 1995, the Secretary of Defense (SECDEF) directed a major review of the capabilities and deficiencies of modeling and simulation in support of the Department of Defense (DoD) force structure and system procurement decisions. The review team, composed of representatives from the Services, Joint Staff, Unified Commands (CINCs), and Office of the Secretary of Defense (OSD), determined that existing simulations used for DoD analysis are critically limited in the types of activities represented and in the methodologies employed to represent those activities. This review served as the Mission Needs Statement (MNS) for the Joint Warfare System (JWARS).

(2) In May 1995, the Deputy Secretary of Defense approved the review and directed the establishment of the Joint Analytic Model Improvement Program (JAMIP) to improve the ability of DoD to conduct joint theater warfare analysis. JAMIP was structured as a five-element approach:

- (a) a near-term program to provide low-cost upgrade and integration to existing models;
- (b) a mid-term program to develop a suite of models, including a true, joint warfare analysis model;
- (c) a far-term program to provide an authoritative representation of analysis;
- (d) an operations and maintenance program to provide field support and analytic data base development and maintenance; and,
- (e) a joint data support program to provide the best quality, authoritative, and consistent data for DoD joint analytic studies.

(3) The second and third elements of JAMIP were ultimately combined into one larger program, JWARS.

b. JWARS Operating Capabilities

(1) JWARS shall be a state-of-the-art, constructive simulation that provides a multi-sided and balanced representation of joint theater warfare (see 4b(2)). JWARS is intended to correct many of the theater warfare shortcomings identified in the February 1995 SECDEF review addressed at paragraph 1a.

(2) JWARS shall assist implementation of Joint Vision (JV) 2010 by providing a vehicle to assess current and future military capabilities within the four emerging operational concepts: dominant maneuver, precision engagement, focused logistics, and full-dimensional protection.

(3) The potential users of JWARS include the Joint Staff, Services, CINCs, OSD, Joint Task Force (JTF) Commanders/Staff, selected other DoD organizations and industry. Key applications for the use of JWARS include: Planning and Execution, Force Assessment, System Effectiveness and Trade-off Analysis, and Concept and Doctrine Development and Assessment. These four applications are defined at Appendix A.

2. THREAT. JWARS is not a combat system. Hence, discussion of a system-specific, Defense Intelligence Agency (DIA)-validated threat does not apply. However, a generalized automated data processing (ADP) security threat does exist from unauthorized intrusion, insertion of viruses, and theft or manipulation of data contained in files. An ADP security plan for the JWARS model shall be submitted by the program manager that addresses user security levels, and the requirement to control access to the source code and data files.

3. SHORTCOMINGS OF EXISTING SYSTEMS. Existing simulations used for joint theater warfare analysis are insufficient to meet the current and projected joint warfare analysis needs of DoD across the full spectrum of military operations. In general, these shortcomings can be categorized as those relating to warfare analysis and those relating to operational functionality.

a. Warfare Analysis Shortcomings. Existing theater warfare analytical simulations do not adequately represent or dynamically integrate major warfare analysis areas necessary for current and future studies of theater warfare. Major areas requiring better representation include: balanced joint operations; the synergy across the functional warfare areas to include C4 (command, control, communications, and computers), ISR (intelligence, surveillance, and reconnaissance), and logistics; and, an appropriate representation of current and future U.S., allied, coalition, and threat capabilities.

b. Operational Functionality Shortcomings. Existing theater warfare analytical simulations are encumbered by a variety of technical and design shortcomings. These shortcomings are in the areas of model architectures, credibility of algorithms and data values, and traceability of results. Existing simulations also lack standardized tools to automate the archiving, cross-checking, manipulation, retrieval, and transfer of data elements.

4. CAPABILITIES REQUIRED. This ORD defines three releases of JWARS. JWARS Release 1 is the limited Initial Operational Capability (IOC), Release 2 is the full IOC, and Release 3 is the Full Operational Capability (FOC).

a. JWARS Warfare Representation

(1) JWARS shall include balanced representations of joint theater warfare in a realistic environment. JWARS shall consider all levels of war (strategic, operational, and tactical), but shall focus on the operational level. JWARS shall be sufficiently flexible to deal with current, near-term, and future warfare concepts, doctrine, systems, and organizations of the United States, its Allies, and potential adversaries. JWARS shall represent multiple nations in multiple coalitions as well as neutral and opposing forces. In particular, JWARS shall be able to represent and assist in defining the operational concepts of dominant maneuver, precision engagement, full-dimensional protection, and focused logistics of Joint Vision 2010.

(2) The representations of C4 and ISR shall form the foundation for how objects perceive and interact with one another in JWARS. JWARS shall maintain ground truth and current perceptions for each side. A side's ability to make and execute informed decisions shall be directly attributable to that side's perceptions of the battlefield.

(3) The lists at Appendix B, developed from the Universal Joint Task List (UJTL), represent the initial prioritized warfare functionality desired in JWARS. At Appendix C is a further refinement of the JWARS warfare functionality required for the first two releases of JWARS.

b. JWARS Performance Parameters. The following paragraphs identify eleven JWARS performance parameters identified by an Integrated Process Team (IPT) composed of representatives of the CINCs, Services, Joint Staff and OSD. The IPT identified the first three as Key Performance Parameters (KPP). A test and evaluation plan, using past and current studies as benchmarks, shall be developed to evaluate the JWARS performance parameters contained in this section.

(1) Traceability. The ability to identify why a certain output was obtained from JWARS (**KPP**).

(a) Cause-and-Effect Relationships. Facilitate identification of cause-and-effect relationships.

Threshold. At each release JWARS shall allow an analyst to identify the cause-and-effect relationships needed to explain analysis.

(b) Data References. Sources of data used in JWARS.

Threshold. At each release JWARS shall provide a means to track the sources of data values. If user changes are made for a particular application, JWARS shall track the changes from baseline version to analytical excursions and mark output accordingly. JWARS shall also allow a global comparison of input data sets indicating, when queried, which values are changed from certified input data to excursion values.

(2) Verification and Validation. JWARS shall demonstrate and enable the correct representation of doctrine, system and unit performance, the environment and balance among joint warfare functions for U.S. forces, Allies, coalition partners and potential adversaries **(KPP)**.

Threshold. At each release the objects and algorithms in JWARS that represent doctrine, system and unit performance, and the environment shall be verified and validated in accordance with the Verification and Validation Plan. Balance shall be maintained by equitable representation of joint warfare functions, consistent with their impact on theater warfare operations, and within the context of the functionality described at Appendix C.

(3) Utility. Study Execution, Deterministic and Stochastic Methodology, Multiple Levels of Resolution, and Run Time **(KPP)**.

(a) Study Execution

(i) Release 1 (Limited IOC)

Threshold. JWARS shall include C4, ISR, logistics capabilities and essential functionality that exists in the current MIDAS and TACWAR models. Release 1 shall be capable of replacing the use of TACWAR to support the Force Assessment application at Appendix A . This threshold is described by the warfare functionality at Appendix C.

Objective. The additional warfare functionality required to meet this objective is described at Appendix C.

(ii) Release 2 (Full IOC)

Threshold. JWARS shall provide balanced warfare representation to include C4, ISR, and logistics and shall be capable of supporting the Planning and Execution application and Force Assessment application described at Appendix A. In addition, JWARS shall be capable of replacing the legacy campaign models TACWAR and MIDAS. This threshold is described by the warfare functionality at Appendix C.

Objective. The additional warfare functionality required to meet this objective is described in Appendix C.

(iii) Release 3 (FOC)

Threshold. JWARS shall provide balanced warfare representation to include C4, ISR, and logistics and shall be capable of supporting the following applications at Appendix A: Planning and Execution, Force Assessment, System Effectiveness and Trade-off Analysis, and Concept and Doctrine Development. In addition, JWARS shall be capable of replacing the legacy campaign models CEM, THUNDER, ITEM, and SUMMITS.

Objective. JWARS shall provide the functionality described by the tasks listed at Appendix B.

(b) Deterministic and Stochastic Methodology. The representation of the variable aspects of warfare being modeled. A deterministic methodology is essential for the planning and execution application. A stochastic methodology is essential for the force assessment application, the system effectiveness and trade-off analysis application, and the concept and doctrine development application.

Threshold. At each release the user shall be able to choose from a single value, common probability distributions, or user-provided distribution for input data. Post-processing tools shall facilitate examination of distributions and correlations associated with simulation results.

(c) Multiple Levels of Resolution. The capability for the user to select varying levels of aggregation: an overall system Low Resolution Mode to support time-constrained analysis across all warfare functions; user selectable higher level(s) of resolution to provide detailed analysis of selected areas of interest; and, an overall system High Resolution Mode to provide detailed analysis across all warfare functions.

Threshold

(i) At release 1 and 2 a single level of resolution, balanced across all warfare functions, shall be available (see Run Time at 4b(3)(d)).

(ii) At release 3 JWARS shall provide the user a selection of Low-to-High levels of resolution, balanced across all warfare functions. The JWARS system shall identify invalid user-selected combinations of resolution.

(d) Run Time. The time required for a single simulation run (deterministic) or replication (stochastic). The following run time requirements must be met using both deterministic and stochastic methodologies and on the hardware platforms constrained by the mobility requirements defined at 4c(2).

Threshold.

(i) At release 1 and 2 JWARS shall be able to execute a 100-day major theater of war (MTW) campaign faster than a 1000:1 speed (approximately 2.5 hours).

(ii) At release 3 for System Effectiveness and Trade-off Analysis applications and Concept and Doctrine Development applications, JWARS shall be able to execute a 100-day MTW campaign faster than a 500:1 speed (approximately 5 hours). For Planning and Execution applications and Force Assessment applications, JWARS shall be able to execute a 100-day MTW campaign faster than a 1000:1 speed (approximately 2.5 hours).

Objective. At release 3 for System Effectiveness and Trade-off Analysis applications and Concept and Doctrine Development applications, JWARS shall be able to execute a 100-day MTW campaign faster than a 1000:1 speed (approximately 2.5 hours). For Planning and Execution applications

and Force Assessment applications, JWARS shall be able to execute a 100-day MTW campaign faster than a 5000:1 speed (approximately .5 hours).

(4) System Integrity. Protecting the hardware system, software code, and data integrity from alteration or compromise.

Threshold. At each release simulation data shall not modify execution code. No temporary scratch files shall be left on the system drives after a simulation run has successfully completed.

Objective. At each release the software shall provide the capacity to run a self-test function to verify the integrity of executable code.

(5) Reliability. The ability of JWARS to perform a simulation under stated conditions for a specified period of time.

Threshold. At each release software shall provide a 98% probability of completing a simulation run after initiation when there are no operator input errors.

Objective. At each release software shall provide a 99% probability of completing a simulation run after initiation when there are no operator input errors.

(6) Maintainability. Cost-effective and rapid diagnostics and modifications.

(a) Input Data Error Diagnostics. Correction of input data errors and other operator input errors not caused by a coding problem within the software.

Threshold. At each release the software shall provide preprocessor functions of type checking, range checking, and context checking, along with the capability to identify the source of and facilitate the correction of errors.

(b) Runtime Error Diagnostics. Software identification of the type and probable source(s) of errors.

Threshold. At each release JWARS shall create a trace or log file to aid in error diagnostics.

Objective. At each release and upon fatal errors, the software shall assist the operator in making repairs (see Run Control at 4b(11) for discussion of rolling checkpoints that will allow restart in the event of a fatal error).

(7) Repeatability. The ability of JWARS to reproduce results of a single simulation.

Threshold. At each release the same initial conditions (to include random number generator seeds for stochastic replications) shall provide the same output on the same hardware platform.

Objective. At each release the same initial conditions shall provide the same output on any supported hardware platform.

(8) Ease of Use

(a) Training. The ability to attain initial and full productivity levels to load input data, execute model runs, and extract output data for analysis; and to execute modifications to or create new entities within the software.

Threshold. At each release an analyst with Service or Office of Personnel Management (OPM) operations research/systems analysis accreditation or an equivalent technical advanced degree, some Joint or comparable experience, and some experience working combat modeling and analysis issues shall attain an initial productivity level with 2 weeks of training, and a full capability level with an additional 6 months of sustained, in-house hands-on experience. An experienced software engineer/programmer shall be able to modify or create software entities after 5 days of formal training.

Objective. At each release an analyst with the same qualifications as above shall achieve initial productivity with 1 week of formal training and a full capability with 3 months of sustained, in-house hands-on experience. An experienced software engineer/programmer shall be able to modify or create software entities after 5 days of in-house training.

(b) Automated Decision Support. A selectable automated decision making capability for operational and tactical level decisions.

Threshold. At each release JWARS shall have automated decision making features for tactical decisions.

Objective. At each release JWARS shall have automated decision making features for operational (as well as tactical) decisions.

(9) Portability. The ability to move JWARS between two different supported hardware platforms.

Threshold. At each release data sets shall require no modification and total systems software shall require less than 2% modification to the lines of executable code to establish JWARS on a different supported hardware platform.

Objective. At each release no system software modifications shall be required to move JWARS to a different supported hardware platform.

(10) Classification and Releasability

Threshold

(a) At each release JWARS software shall be capable of conducting analysis at both the SECRET (collateral) level and at higher levels of classification. All JWARS data, code, and output must reflect the appropriate level of classification to facilitate transfer across classification levels. All output of JWARS shall reflect the level of classification to facilitate requests for releasability.

(b) At each release the design and implementation of JWARS shall not preclude replacement of classified data, objects, and algorithms with unclassified data, objects, and algorithms.

(11) Run Control. The ability to monitor and modify the execution of the JWARS simulation.

Threshold. At each release the user shall be able to interrupt JWARS, modify data, and start excursions from the same point. In addition, the user shall be able to dictate a rolling checkpoint that allows periodic capture of “state of the system” at user-defined intervals or events and permit restart, with modifications of data, at any of these points.

c. Logistics and Readiness

(1) Operational Availability. JWARS software operational availability is expected to be 100%. JWARS reliability and maintainability is addressed in paragraphs 4b(5) and 4b(6).

(2) Mobility Requirements. At CINC locations, the JWARS system shall be capable of being moved from a CINC’s primary site to one or more alternate sites with minimal logistical support and without any degradation in capability. JWARS shall be supported on at least one platform that meets shipboard deployability requirements. JWARS shall also be supported on at least one platform that does not exceed two-man lift.

(3) Maintenance Level. JWARS shall have a Configuration Control Board (CCB) to maintain control of the JWARS software configurations, problem reporting, standards evolution, library management, and compliance issues.

5. PROGRAM SUPPORT. No companion ORDs exist. Joint Potential Designator is joint.

a. Maintenance Planning. An Integrated Logistics Support Plan (ILSP) that discusses on-site and off-site maintenance shall be developed for JWARS.

b. Human Systems Integration. Depending on the analysis needs of the using organization, JWARS sites may require different numbers of personnel with different skills to include analysts, operators, subject matter experts, hardware and software administrators, programmers, and data experts.

(1) Manpower Constraints. JWARS manpower requirements shall conform to those specified in the applications at Appendix A. In addition, a JWARS site executing exploratory analysis of new concepts or systems shall require a programmer conversant in the development language as well as the general flow and approach of JWARS software to facilitate adding, deleting, or modifying JWARS objects and the methods describing their interaction.

(2) Human System Interfaces. Modern human computer interface (HCI) concepts shall be used in the design of JWARS to reduce the need for training at the computer operating system level. The HCI shall be developed in accordance with the Human Computer Interface Style Guide.

(3) Training. See Ease of Use in paragraph 4b(8). JWARS shall include tutorials, on-line references, manuals, and help sources to complement the JWARS training program. Reduction in the need for training shall be obtained with the use of “point and click” and other modern HCI techniques.

(4) Safety, Health, and Critical Errors. The implementation of JWARS shall not introduce new safety or health factors at any of the deployment sites.

c. Computer Resources

(1) Architecture. The JWARS architecture shall be compliant with the provisions of the Joint Technical Architecture (JTA) applicable to constructive analytical simulations as well as be open, standards-based, robust, scaleable (space, time, and unit), extensible, and flexible. The architecture provides for the development of a system that can be maintained and evolve as JWARS operational needs and applications change. JWARS shall comply with the DoD High Level Architecture (HLA) for Simulations and shall be Year 2000 (Y2K) compliant.

(2) Software. JWARS software shall be portable, modular, extensible, non-proprietary, and shall facilitate reuse. JWARS shall be developed in a modern supportable programming language using modern programming techniques. Existing documented maintainable, portable government-off-the-shelf (GOTS) or commercial-off-the-shelf (COTS) software packages and non-development items (NDIs) shall be used to the maximum extent possible.

(3) Configuration Management. JWARS shall include a Configuration Management Plan (CMP). The differences between JWARS versions shall be well documented in online manuals and release notes. Changes made to JWARS prior to a new release (to include exploratory analysis) shall be flagged in all output.

(4) Hardware. JWARS shall not be platform specific and, where technically feasible, shall allow the computers that exist at each user organization to be used. The JWARS design shall facilitate the migration to improved hardware as it becomes available.

(5) Documentation. The JWARS documentation shall be prepared and distributed on-line in a hypertext format. JWARS shall include, at a minimum, the following documentation: executive overview; users' guide; analyst manual; programmers manual; verification, validation, and accreditation manuals; CMP and maintenance documentation plan; and, an ILSP.

d. Other Logistics Considerations

(1) Facility and Shelter. JWARS shall not require modification of existing facilities or construction of new facilities.

(2) Environmental Compliance. No impact on environmental compliance is anticipated.

(3) Data. Engineering data and data rights requirements include acquisition of commercial data and unrestricted data rights on software developed for JWARS.

e. Command, Control, Communications, Computers, and Intelligence. JWARS shall be able to use real world C4 and ISR systems to support update, processing, analysis, and transmission of JWARS input and output data.

f. Transportation and Basing. See paragraph 4c(2).

g. Standardization, Interoperability, and Commonality

(1) JWARS shall comply with the information technology standards applicable to constructive analytic simulations that are contained in the JTA to include the Defense Information Infrastructure (DII) Common Operating Environment (COE). JWARS shall also comply with the DoD HLA for Simulations.

(2) JWARS shall use standardized symbology and data bases relating to force structure, target information, order-of-battle data, weapon and system effects, and the physical environment to the maximum extent possible. Authoritative data sources shall be identified for all required inputs, algorithms, interfaces, environmental elements, etc. necessary for JWARS operation.

(3) The JWARS office shall comply with the Memorandum of Agreement between the JWARS office and Joint Simulation System (JSIMS) Program Office which specifies that the two simulations shall share a common Joint Conceptual Model of the Mission Space, and, to the maximum extent practical, system level interoperability, databases and object characteristics.

h. Mapping, Charting, and Geodesy (MC&G) Support. JWARS shall use DoD standard geospatial data to the maximum extent possible. JWARS shall be designed to accept, to the maximum extent possible, commercially available MC&G maps and imagery data.

i. Environmental Support. JWARS shall require environmental support in terms of accurate authoritative representation of environmental data (e.g., meteorological, oceanographic, space, and terrain) at a sufficient level of resolution to credibly capture the impact on the campaign.

6. FORCE STRUCTURE. JWARS is a non-combatant software program intended for installation on existing or projected hardware at numerous DoD analytical sites. The JWARS program shall only procure hardware required to support the JWARS Office. Initial distribution of JWARS software shall be to current users of campaign level analytical models including OSD, Joint Staff, CINCs, Services, and other DoD agencies. The number of initial JWARS sites is estimated to be 50.

7. SCHEDULE CONSIDERATIONS

a. Release 1 (Limited IOC). Limited IOC is intended to support early operational testing and evaluation of JWARS and to replace the use of TACWAR to support Force Assessment studies. Limited IOC shall occur when at least one JWARS operational site is capable of replacing the use of TACWAR to support Force Assessment studies. Limited IOC (including installation, training, testing, and test modifications) shall occur not later than March 1, 2000.

b. Release 2 (Full IOC). Full IOC is intended to support Planning and Execution studies and Force Assessment studies. Full IOC shall occur when at least one JWARS operational site is capable of supporting Planning and Execution studies and at least one JWARS operational site is capable of supporting Force Assessment studies. Full IOC (including installation, training, testing, and test modifications) shall occur not later than May 1, 2001.

c. Release 3 (FOC). FOC is intended to support Planning and Execution studies, Force Assessment studies, System Effectiveness and Trade-off studies, and Concept and Doctrine Development studies. FOC shall occur when at least one JWARS operational site is capable of supporting System Effectiveness and Trade-off studies and at least one JWARS operational site is capable of supporting Concept and Doctrine Development studies. FOC (including installation, training, testing, and test modifications) is anticipated in FY 02.

Appendix A. JWARS APPLICATIONS

1. Planning and Execution

a. Description. Support development of one or more courses of action and risk assessments for U.S. Forces, Allies, coalition partners, and potential adversaries in multiple Smaller Scale Contingencies (SSCs) or Major Theaters of War (MTWs).

Includes:

- Situation assessment (e.g., weather, risk).
- Evaluating force, logistics, C4 and ISR adequacy, sufficiency, and feasibility.
- Identify resource shortfalls (e.g., forces, logistics, time).
- Develop force flows and sustainability requirements.
- Developing and evaluating plans and supporting documents.

b. Conditions

- Preparation shall include establishment and input of applicable data (e.g., current orders of battle, force flows, terrain, dynamic environment, geopolitical constraints, and concepts of operations (CONOPS)).
- For crisis action planning, time required for preparation, execution, and analysis shall be no more than 24 hours when a scenario data base exists or no more than 4 days when no scenario data base exists.
- For deliberate planning, time required for preparation (exclusive of data collection and validation), execution, and analysis shall be no more than 14 days for a baseline study and no more than 24 hours for an excursion.
- Must be forward deployable.
- Output data (e.g., MOPs and MOEs) properly configured for analysis and presentation must be available within minutes after run completion.
- Typically 2- to 3-person analytical teams.

2. Force Assessment

a. Description. Support identifying those forces required to execute the National Military Strategy (NMS). Determine capabilities and risks for force levels, force design, and force structure. The products of force assessment support requirements determination to ensure that forces are sized, balanced, and stationed to meet NMS.

Aspects of force assessment as a major analytic requirement include:

- Analyzing the capability of existing forces, logistics, C4 and ISR to meet operational commitments or prospective contingencies and assess risk, effectiveness, tempo, and readiness for multiple contingencies or theaters.
- Analyzing requirements to support building the POM.

- Assessing the capability of proposed out-year force structures required to meet alternative future scenarios.
- Determining the impacts of readiness and training on warfighting performance.

b. Conditions

- Preparation shall include input of force allocation/force structure, force planning strategies, logistics, C4, and ISR capabilities to ensure that forces are sized, balanced, and stationed to meet NMS.
- Preparation and execution time shall allow for multiple successive excursions and analysis in no more than a 3-month period for studies/assessments (exclusive of data collection and validation).
- Typically 4-to 6-person analytical team.

3. System Effectiveness and Trade-off Analysis

a. Description. Support capability assessments on the performance of major systems and sub-systems (e.g., platform, software, weapon, and sensor) within or among Service assets in campaign-level context:

- Simulating performance of major systems and sub-systems and assessing the impact of their contribution to campaign level objectives through a cause and effect relationship showing the explicit/implicit contribution of each particular system toward achieving the strategic and operational theater objectives for a given scenario.
- Performing trade-off analyses.
- Supporting determination of materiel and support requirements.
- Investigating how well various technologies and proposed systems support achievement of the campaign level objectives.
- Enabling analyses to support Defense Acquisition Decisions.

b. Conditions

- Preparation shall include development of detailed input for new and modified systems for inclusion in new or previously run campaign level scenarios.
- Preparation and execution time shall allow for multiple successive excursions and analyses to be run in no more than a 3-month period for major (ACAT 1) acquisition programs (exclusive of data collection and validation).
- Typically 4-to 10-person analytical teams.

4. Concept and Doctrine Development and Assessment

a. Description. Support evaluation of current and proposed operational concepts and force doctrine by assessing their impact within the context of a theater campaign.

- Conducting studies of warfare doctrines, assessing various CONOPS to conduct warfare.
- Comparing proposed doctrine against alternates and identifying key results (e.g., speed, economy of effort, losses).
- Analyzing specific warfighting implications for war reserves, industrial base, readiness, mobilization, deployment, and installation requirements.
- Assessing the effects of changes in operational concepts, doctrine, and/or tactics at operational / campaign level.
- Assessing the effects of conceptual warfighting capabilities at operational / campaign level (e.g. JV2010 Concepts).

b. Conditions

- Preparation shall include development of detailed input for new concepts, doctrine, and/or warfare systems for inclusion in new or previously run campaign level scenarios.
- Preparation and execution time shall allow for multiple successive excursions and analyses to be run in no more than a 4 month period (exclusive of data collection and validation).
- Typically 2-to 5-person analytical teams.

Appendix B. JWARS PRIORITIZED UJTL TASKS

1. Introduction

a. This Appendix contains 1-to-N lists of tasks from the Universal Joint Task List (UJTL) that represent the initial prioritized functionality desired in JWARS. The prioritization of tasks was determined by an Integrated Process Team (IPT) composed of representatives of the CINCs, Services, Joint Staff and OSD. The prioritization is based on the importance of some aspect of the task to JWARS and is unconstrained by cost or technical feasibility. A refinement of the warfare functionality required for JWARS releases 1 and 2 based on cost and technical feasibility is provided at Appendix C.

b. Tasks considered for inclusion in the prioritized list were compiled using a layered approach.

(1) First, a subset of the UJTL tasks from UJTL 3.0 (CJCSM 3500.04A dated 13 September 1996) was selected. The subset of tasks was developed based on the statement listed at paragraph 10d (page 2-11) of the UJTL which is “subordinate tasks are supposed to, in total, comprehensively and without redundancy, define all activities involved in the higher level task.” Therefore only subordinate (children) tasks were considered because they fully define the tasks above (parents).

(2) Second, the subset described above was supplemented by tasks from the UJTL that IPT participants felt contributed additional warfare analysis requirements, i.e., parent tasks not fully defined by their children tasks were added to the subset defined above. These UJTL tasks are identified with the symbol #.

(3) Finally, participants in the IPT that determined that the UJTL was inadequate to define their warfare analysis requirements submitted tasks for consideration. These tasks are marked with their proponent, identified with the symbol *, and defined at the end of each list.

2. Prioritization and Categorization of Operational Tasks (Rank Order)

<u>Rank</u>	<u>Task Description</u>	<u>Cat.</u>
1	OP 1.2.4.3 Conduct Forcible Entry: Airborne, Amphibious, and Air Assault	IOC
2	OP 3.2.1 Attack Operational Land/ Maritime Targets	IOC
3	OP 3.2.4 Suppress Enemy Air Defenses	IOC
4	OP 1.1.2 Conduct Intratheater Deployment and Redeployment of Forces Within Theater of Operations/ JOA	IOC
4	OP 1.2.5 Conduct Offensive Operations in Theater of Operations/ JOA	IOC
4	OP 1.2.6 Conduct Defensive Operations in Theater of Operations/ JOA	IOC
7	OP 3.2.5.1 Conduct Air Interdiction of Operational Forces/ Targets	IOC
8	OP 6.1.4 Counter Enemy Air Attack in Theater of Operations/ JOA	IOC
8	OP 6.1.5 Conduct Operational Area Missile Defense	IOC
10	OP 3.2.3 Attack Aircraft and Missiles (Offensive Counterair)	IOC
11	J-8 --- Enemy WMD Attacks on Operational Targets*	IOC
12	OP 1.5.3 Gain and Maintain Air Superiority in Theater of Operations/ JOA	IOC
12	OP 3.1.6.1 Assess Battle Damage on Operational Targets	IOC
12	OP 6.5.4 Protect and Secure Air, Land, and Sea LOCs in Theater of Operations/ JOA	IOC
15	OP 3.2.6 Provide Firepower in Support of Operational Maneuver	IOC
16	OP 1.2.4.6 Conduct Penetration, Direct Assault, and Turning Movements	IOC
16	OP 3.2.5.2 Conduct Surface/ Subsurface Firepower Interdiction of Operational Forces/ Targets	IOC
16	OP 1.2 Conduct Operational Maneuver (submitted by OSD)#	IOC
19	OP 6.1 Provide Operational Aerospace and Missile Defense#	IOC
20	OP 5.3.7 Select or Modify Course of Action	IOC
20	OP 1.2.4.4 Reinforce and Expand Lodgment	IOC
22	OP 1.2.7 Conduct Retrograde Operations in Theater of Operations/ JOA	IOC
22	OP 1.5.2 Gain and Maintain Maritime Superiority in Theater of Operations/ JOA	IOC
22	OP 1.1 Conduct Operational Movement (submitted by OSD)#	IOC
22	OP 1.2.4 Conduct Operations in Depth (submitted by OSD)#	IOC
22	OP 1.3 Provide Operational Mobility (submitted by OSD)#	IOC
27	OP 2.2.1 Collect Information on Operational Situation	IOC
28	OP 1.3.1 Overcome Operationally Significant Barriers, Obstacles, and Mines	IOC
28	OP 3.2.2.2 Employ Electronic Attack (EA) in Theater of Operations/JOA	IOC
30	OP 1.1.3 Conduct Theater of Operations/ JOA Reception, Staging, Onward Movement and Integration (RSOI)	IOC
30	OP 3.1.3 Develop Operational Targets	IOC
32	OP 1.5.1 Control Operationally Significant Land Area	IOC
32	OP 3.2.7 Synchronize Operational Firepower	IOC
34	OP 3.1.6.2 Assess Munitions Effects on Operational Targets	IOC
35	OP 4.1 Coordinate Supply Of Arms, Ammunition, And Equipment In Theater Of Ops/JOA	IOC
36	OP 4.5.2 Supply Operational Forces	IOC
36	OP 6.1.1 Process/ Allocate Operational Aerospace Targets	IOC
38	OP 1.2.1 Transition Joint Forces to and from Tactical Battle Formations	IOC
39	OP 6.5.3 Protect/ Secure Operationally Critical Installations, Facilities, and Systems	IOC
40	OP 1.5.4 Isolate Theater of Operations/ JOA	IOC
40	OP 2.4.2.4 Provide Target Intelligence for Theater of Operations/ JOA	IOC
42	OP 3.1.6.3 Assess Reattack Requirement	IOC
43	OP 1.2.4.7 Conduct Direct Action in JOA	IOC
43	OP 1.3.2 Enhance Movement of Operational Forces	IOC
43	OP 4.2 Synchronize Supply Of Fuel In Theater Of Operations/JOA	IOC
46	OP 3.1.4 Prioritize High Payoff and High- Value Targets	IOC
46	OP 4.5.1 Provide for Movement Services in Theater of Operations/ JOA	IOC

<u>Rank</u>	<u>Task Description</u>	<u>Cat.</u>
48	OP 6.1.2 Integrate Joint/ Multinational Operational Aerospace Defense	IOC
48	OP 6.1.6 Conduct Tactical Warning and Attack Assessment in Theater of Operations/ JOA	IOC
48	OP6.2 Provide Protection for Operational Forces, Means, and Noncombatants (submitted by OSD)#	IOC
51	OP 1.2.3 Concentrate Forces in Theater of Operations/ JOA	IOC
52	OP 3.1.2 Assign Joint/ Multinational Operational Firepower Resources	IOC
52	OP 3.1.5 Publish Tasking Order(s) for Employment of Air Assets and Other Means	IOC
52	OP 6.5.2 Protect and Secure Flanks, Rear Areas, and COMMZ in Theater of Operations/ JOA	IOC
55	OP 1.4.1 Employ Operational System of Obstacles	IOC
56	OP 2.2.2 Directly Support Theater Strategic Surveillance and Reconnaissance Requirements	IOC
57	OP 5.3.6 Compare Courses of Action	IOC
57	OP 3.2.5.3 Conduct Special Operations Interdiction of Operational Forces/ Targets	IOC
59	OP 4.4.4 Reconstitute Forces	IOC
60	OP 5.1.4 Maintain Operational Information and Force Status	IOC
60	OP 6.2.8 Establish NBC Protection in Theater of Operations/ JOA	IOC
62	OP 2.4.1.2 Determine Enemy's Operational Capabilities, Course of Action, and Intentions	IOC
62	OP 4.3 Provide For Maintenance Of Equipment In Theater Of Operations/JOA	IOC
62	OP 6.2.5 Provide Positive Identification of Friendly Operational Forces Within Theater of Operations/ JOA	IOC
65	OP 5.3.5 Analyze Courses of Action	IOC
66	OP 1.2.4.5 Conduct Raids in JOA	IOC
66	OP 6.2.1 Prepare Operationally Significant Defenses	IOC
66	OP 4.5 Manage Logistic Support in Theater of Operations/JOA (submitted by OSD)#	IOC
69	OP 2.4.1.1 Identify Operational Issues and Threats	IOC
70	OP 3.1.7 Develop Fire Support Coordination Measures	IOC
70	OP 5.1.1 Communicate Operational Information	IOC
70	OP 5.4.4 Synchronize/ Integrate Operations	IOC
73	OP 2.5.1 Provide Intelligence for Theater of Operations/ JOA	IOC
74	OP 2.4.2.3 Provide General Military Intelligence for Theater of Operations/ JOA	IOC
74	OP 6.2.3 Protect Use of Electromagnetic Spectrum in Theater of Operations/ JOA	IOC
74	OP 4.4 Coordinate Support for Forces in Theater of Operations/JOA (submitted by OSD)#	IOC
77	OP 2.3.3 Correlate Information	IOC
78	OP 5.6.2 Plan and Integrate Operational C2W	IOC
79	OP 3.2.2.3 Employ Information Attack in Theater of Operations/ JOA	IOC
79	OP 5.1.2 Manage Means of Communicating Operational Information	IOC
81	OP 5.3.4 Develop Courses of Action/ Prepare Staff Estimates	IOC
81	OP 6.2.2 Remove Operationally Significant Hazards	IOC
83	OP 5.5.6 Establish or Participate in Task Forces	IOC
83	OP 1.2.2 Posture Joint Forces for Operational Formations	IOC
83	OP 5.6.3 Control IW Operations	IOC
83	OP 6.5.1 Provide Counter- Reconnaissance in Theater of Operations/ JOA	IOC
87	OP 1.4.3 Plan and Execute Blockade	IOC
87	OP 2.1.4 Allocate Intelligence Resources in Theater of Operations/ JOA	IOC
87	OP 2.4.2.1 Provide Indications and Warning for Theater of Operations/ JOA	IOC
90	OP 2.4.2.2 Provide Current Intelligence for Theater of Operations/ JOA	IOC
91	OP 6.2.6 Conduct Evacuation of Noncombatants from Theater of Operations/ JOA	IOC
92	OP 5.7.6 Coordinate Coalition Support	IOC
92	OP 1.2.4.2 Plan and Execute Demonstration	IOC
94	OP 2.3.2 Collate Information	IOC

<u>Rank</u>	<u>Task Description</u>	<u>Cat.</u>
94	OP 6.1.3.1 Employ Positive Control Measures	IOC
96	OP 6.3.4 Protect Information Systems in Theater of Operations/ JOA	IOC
96	OP 6.4.2 Conduct Operational Deception	IOC
96	OP 6.4.3 Assess Effect of Operational Deception Plan	IOC
99	OP 1.4.4 Plan and Execute Maritime Interception	IOC
99	OP 6.5.5 Integrate Host Nation Security Forces and Means	IOC
101	OP 6.3.1 Employ Operations Security (OPSEC) in Theater of Operations/ JOA	IOC
102	OP 5.1.5 Monitor Strategic Situation	IOC
103	OP 2.1.1 Determine and Prioritize Operational Priority Intelligence Requirements (PIR)	IOC
103	OP 6.3.3 Employ Theater Electronics Security for Operational Forces	IOC
105	OP 1.2.4.8 Conduct Unconventional Warfare in Theater of Operations/ JOA	IOC
105	OP 2.1.2 Determine and Prioritize Operational Information Requirements (IR)	IOC
107	OP 5.6.1 Plan and Integrate Operational IW	IOC
108	OP 6.3.2 Supervise Communications Security (COMSEC)	IOC
109	OP 5.7.5 Coordinate Host Nation Support	IOC
110	OP 5.7.3 Develop Multinational Intelligence/ Information Sharing Structure	IOC
110	OP 1.3.3 Coordinate Water Space Management	IOC
110	OP 6.1.3.2 Employ Procedural Control Measures	IOC
113	OP 4.6.1 Determine Number and Location of Sustaining Bases in Theater of Operations/ JOA	IOC
113	OP 4.6.3 Expand Capacity of PODs and Allocate Space in the Theater of Operations/ JOA	IOC
115	OP 3.1.1 Establish Joint Force Targeting Guidance	IOC
115	OP 4.4.3.2 Manage Flow of Casualties in Theater of Operations/ JOA	IOC
115	OP 4.6.2 Provide Civil- Military Engineering	IOC
115	OP 6.2.4 Protect Use of the Acoustic Spectrum in Theater of Operations/ JOA	IOC
119	OP 2.1.3 Prepare Operational Collection Plan	IOC
119	OP 3.2.2.4 Conduct Nonlethal Attack on Personnel, Equipment, and Installations	IOC
121	OP 5.3.1 Conduct Operational Mission Analysis	IOC
121	OP 5.3.3 Determine Operational End State	IOC
123	OP 1.2.4.1 Plan and Execute Show of Force	IOC
123	OP 2.5.2 Provide Follow- on Intelligence Support to Theater of Operations/ JOA Planners and Decision Makers	IOC
125	OP 5.5.1 Develop a Joint Force Command and Control Structure	IOC
126	OP 5.2.3 Project Future Campaigns and Major Operations (Sequels)	IOC
127	OP 5.2.1 Review Current Situation (Project Branches)	IOC
128	OP 2.3.1 Conduct Technical Processing and Exploitation in Theater of Operations/ JOA	IOC
129	OP 5.4.3 Provide Rules of Engagement	IOC
130	OP 5.4.5 Coordinate/ Integrate Components, Theater, and Other Support	IOC
131	PACOM 8 --- Support SSC operations*	IOC
132	OP 6.2.9.2 Provide Combat Search and Rescue	IOC
133	OP 2.6 Evaluate Intelligence Activities In Theater Of Operations/JOA	IOC
133	OP 3.2.2.1 Employ PSYOP in Theater of Operations/ JOA	IOC
135	OP 6.2.7 Establish Disaster Control Measures	FOC
136	OP 6.4.1 Develop Operational Deception Plan	FOC
137	OP 4.7.2 Conduct CMO in Theater of Operations/ JOA	FOC
138	OP 4.4.1.1 Coordinate Theater of Operations/ JOA Support for Personnel	FOC
139	OP 1.4.2 Plan and Execute Sanctions/ Embargo	FOC
140	OP 5.5.4 Deploy Joint Force Headquarters Advance Elements	FOC
141	OP 1.5.5 Assist Host Nation in Populace and Resource Control	FOC
142	OP 5.1.3 Determine Commander's Critical Information Requirements	FOC
143	OP 4.4.3 Provide for Health Services in Theater of Operations/JOA (submitted by	FOC

<u>Rank</u>	<u>Task Description</u>	<u>Cat.</u>
	OSD)#	
144	PACOM 3 --- Estimate Readiness*	FOC
145	OP 5.4.2 Issue Plans and Orders	FOC
146	OP 4.4.3.3 Manage Health Services Resources in Theater of Operations/JOA	FOC
146	OP 4.6.4 Provide Law Enforcement and Prisoner Control	FOC
148	OP 4.7.3 Provide Support to DOD and Other Government Agencies	FOC
148	OP 5.2.2 Formulate Crisis Assessment	FOC
150	OP 5.7.4 Coordinate Plans with Non- DOD Organizations	FOC
151	OP 5.5.5 Establish Command Transition Criteria and Procedures	FOC
151	OP 4.5.4 Coordinate Recovery and Salvage	FOC
151	OP 4.7.6 Coordinate Civil Affairs in Theater of Operations/JOA	FOC
151	OP 5.8.2 Coordinate Command/ Internal Information Programs	FOC

Key:

#: UJTL parent task submitted because its children tasks do not, in total, comprehensively define all warfare analysis activities of the parent task.

*: Non-UJTL submitted tasks

- a. J-8 --- Enemy WMD Attacks on Operational Targets. JWARS should represent enemy attacks against operational targets using weapons of mass destruction. These attacks will produce mass or prolonged destruction, delays, or disruption. Examples include nuclear, biological or chemical attacks.
- b. PACOM 8 --- Support SSC operations. Develop the proposed mission and its elements.
- c. PACOM 3 --- Estimate readiness. Estimate the readiness of U.S. military forces, U.S. agency elements, and coalition elements to perform the mission.

3. Prioritization and Categorization of Strategic Theater Tasks (Rank Order)

<u>Rank</u>	<u>Task Description</u>	<u>Cat.</u>
1	ST 3.2.1 Conduct Lethal Attack on Theater Strategic Targets	IOC
2	ST 3.1.3 Conduct Theater Combat Assessment	IOC
2	ST 6.1.4 Provide Theater Air Defense	IOC
4	ST 1.1.3 Conduct Intratheater Deployment of Forces	IOC
5	ST 3.2.2.2 Conduct Theater Electronic Attack (EA)	IOC
6	ST 1.6.3 Gain and Maintain Maritime Superiority in Theater of War	IOC
7	ST 6.1.5 Provide Theater Missile Defense	IOC
8	ST 1.6.2 Gain and Maintain Air Superiority in Theater of War	IOC
8	ST 3.2.3 Integrate Theater Strategic Firepower	IOC
10	ST 1.3.6 Conduct Theater of War Operations in Depth	IOC
10	ST 1.1 Conduct intratheater strategic deployment (submitted by J-4)#	IOC
12	ST 3.1.1 Select Strategic Targets in the Theater for Attack	IOC
13	J-8 --- Enemy WMD Attacks on Theater Strategic Targets*	IOC
14	ST 1.6.1 Control Strategically Significant Land Area	IOC
15	ST 1.3.3.Synchronize Forcible Entry in Theater of War	IOC
15	ST 6.2.6.3 Secure and Protect Theater Air	IOC
17	ST 1.1.5 Provide for Intratheater Refueling	IOC
17	ST 1.6.4 Gain and Maintain Information Superiority in Theater of War/ AOR	IOC
19	ST 1.1.2.3 Provide Onward Movement in AOR	IOC
20	ST 1.1.2.2 Provide Theater Strategic Staging	IOC
20	ST 3.2.2.3 Attack Theater Information Systems	IOC
22	ST 1.5.1 Establish Strategic System of Barriers	IOC
22	ST 6.1.1 Process Theater Aerospace Targets	IOC
22	ST 6.2 Provide protection for theater strategic forces and means (submitted by OSD)#	IOC
25	ST 2.2.1 Collect Information on Theater Strategic Situation	IOC
26	ST 1.3.4 Integrate Direct Action in Theater	IOC
26	ST 2.2.2 Support National and JTF Surveillance Reconnaissance Requirements	IOC
26	ST 2.4.2.4 Provide Target Intelligence for Theater Planning and Execution	IOC
29	ST 1.1.2.1 Provide Theater Strategic Reception	IOC
29	ST 6.1.6 Support Tactical Warning and Attack Assessment in AOR	IOC
31	ST 6.2.8 Establish NBC Defense in Theater	IOC
32	ST 1.3.1 Posture Forces for Strategic Maneuver	IOC
32	ST 4.3.2.2 Build Up Stockage Levels for Theater Campaign	IOC
32	ST 6.2.5 Provide Positive Identification of Friendly Strategic Forces in Theater	IOC
35	ST 3.1.2 Assign Joint/ Multinational Theater Firepower	IOC
35	ST 6.1.2 Provide Airspace Control Measures	IOC
35	USMC --- Conduct Pre-positioning*	IOC
35	ST 5.5 Coordinate theater-wide information warfare (IW) (submitted by J-4 and OSD)#	IOC
39	ST 1.2 Concentrate Forces	IOC
39	ST 4.3.2 Provide supplies & services for theater forces (submitted by J-4)#	IOC
41	ST 4.3.1 Provide for Movement Services Within AOR	IOC
41	ST 4.3.2.3 Provide Maintenance Services and Parts for Theater Campaign	IOC
43	ST 4.3.2.1 Allocate All Classes of Supply per Theater Strategic Plan	IOC
44	ST 2.3.3 Correlate Theater Strategic Information	IOC
45	ST 1.4 Enhance Strategic Mobility	IOC
45	ST 5.1.3 Maintain Strategic Information	IOC
45	ST 4.3 Distribute supplies/services for theater campaign and COMMZ (submitted by OSD)#	IOC
48	ST 1.1.4 Provide Command and Control of Deploying Units	IOC
49	ST 2.5.1 Provide Theater Strategic Intelligence	IOC

<u>Rank</u>	<u>Task Description</u>	<u>Cat.</u>
49	ST 5.1.1 Communicate Strategic and Operational Decisions and Information	IOC
49	ST 6.2.6.2 Secure and Protect Theater Installations	IOC
52	ST 2.3.2 Collate Theater Strategic Information	IOC
53	ST 2.4.2.2 Provide Theater Current Intelligence	IOC
53	ST 4.1 Coordinate The Fixing And Maintaining Of Equipment	IOC
53	ST 5.3.1.2 Analyze and Compare Theater Courses of Action	IOC
53	ST 5.5.1 Plan and Integrate Theater- wide IW	IOC
57	ST 2.4.2.1 Provide Theater Strategic Indications and Warning	IOC
57	ST 6.2.3 Protect Use of Electromagnetic Spectrum	IOC
59	ST 1.1.2.4 Provide Theater Strategic Integration of Deploying Forces	IOC
59	ST 2.1.4 Allocate Intelligence Resources in AOR	IOC
59	ST 7.1.6 Determine Theater Force Size and Structure Requirements	IOC
59	ST 8.3.3 Arrange Sustainment Support for Theater Forces	IOC
63	ST 7.1.2 Determine Deployment Requirements	IOC
64	ST 4.2.3 Reconstitute Theater Forces	IOC
64	ST 4.4.2 Provide Civil- Military Engineering in Theater	IOC
66	ST 5.3.1.3 Select/ Modify Theater Course of Action and Prepare Commander's Estimate	IOC
66	ST 7.1.3 Tailor Joint Forces for Deployment	IOC
68	ST 2.4.1.2 Determine Enemy's Theater Strategic Capabilities and Intentions	IOC
68	ST 6.2.6.1 Integrate Counter- reconnaissance Theater- Wide	IOC
70	ST 1.5.2 Establish Sanctions	IOC
70	ST 5.4.2 Synchronize Joint Operations and Subordinate Campaign Plans	IOC
72	ST 5.5.2 Control Theater IW Operations	IOC
72	ST 7.1.4 Determine and Validate Forces and Cargo to be Deployed or Redeployed	IOC
74	ST 2.4.1.1 Identify Theater Issues and Threats	IOC
75	ST 5.1.4 Monitor Worldwide and Theater Strategic Situation	IOC
75	ST 6.1.3 Provide Requirements for Force Enhancement from Space- Based Assets	IOC
75	ST 6.3.5 Protect Theater Information Systems	IOC
78	ST 6.3.4 Coordinate Concealment of Theater Forces/ Facilities	IOC
79	ST 1.3.2 Designate Strategic Reserves	IOC
79	ST 1.3.7 Coordinate Unconventional Warfare Across Theaters of Operations	IOC
81	ST 4.4.1 Determine Number and Location of Sustaining Bases	IOC
81	ST 6.2.1 Prepare Strategically Significant Defenses	IOC
81	ST 6.3.2 Employ Theater Electronics Security	IOC
84	ST 5.1.2 Manage Theater C4 Systems for Communicating Strategic Orders and Information	IOC
84	ST 5.3.1.1 Develop Theater Courses of Action and Prepare Staff Estimates	IOC
84	ST 6.2.6.4 Integrate Theater- Wide Counterintelligence Requirements	IOC
87	ST 2.1.3 Prepare Theater Strategic Collection Plan	IOC
87	ST 6.2.2 Remove Strategically Significant Hazards	IOC
89	ST 5.2.1 Review Current Situation	IOC
89	ST 6.3.1 Employ Theater Operations Security (OPSEC)	IOC
89	ST 6.4.3 Assess Effect of Theater Deception Plan	IOC
92	ST 1.3.8 Establish Water Space Management	IOC
93	ST 2.4.2.3 Provide Theater General Military Intelligence	IOC
93	ST 6.3.3 Supervise Communications Security (COMSEC)	IOC
95	ST 1.3.5 Coordinate Show of Force/ Demonstration	IOC
96	ST 6.2.4 Provide Acoustic Protection	IOC
96	ST 8.4.3 Coordinate Evacuation and Repatriation of Noncombatants from Theater	IOC
98	ST 2.3.1 Conduct Technical Processing and Exploitation	IOC
99	ST 7.1.5 Determine Theater Warfighting and Other Needs	IOC
100	PACOM 10 --- Determine deployment priorities*	IOC
101	ST 2.1.1 Determine and Prioritize Theater Strategic Priority Intelligence Requirements	IOC

<u>Rank</u>	<u>Task Description</u>	<u>Cat.</u>
	(PIR)	
102	ST 6.4.2 Misinform Adversary Regarding Conduct of Theater Strategy	IOC
102	ST 7.2.1 Determine and Report Force Readiness	IOC
102	ST 7.2.2 Assess and Report Theater Military Capability	IOC
105	ST 5.2.5 Project Future Theater Campaigns or Strategic Operations.	IOC
106	ST 2.6 Evaluate Intelligence Activities In AOR	IOC
106	ST 6.4.1 Protect Details of Theater Strategy and Campaign Plans and Operations	IOC
108	ST 4.2.2 Provide health service support (submitted by J-4 and OSD)#	IOC
108	SOUTHCOM --- Analyze the impact of COAs on the physical, military, and civil environment*	IOC
110	ST 5.3.4 Prepare and Coordinate Theater Strategy	IOC
110	ST 8.2.10 Coordinate Multinational Operations Within AOR	IOC
112	ST 8.2.8.2 Conduct Peacekeeping	IOC
113	ST 8.2.8.3 Conduct Peace Enforcement	IOC
114	ST 4.4.4 Manage and Integrate Third Party Logistics	FOC
115	ST 4.2.2.2 Coordinate Patient Evacuation from AOR	FOC
116	ST 2.1.2 Determine and Prioritize Theater Strategic Information Requirements (IR)	FOC
117	ST 3.2.2.1 Conduct Theater Psychological Activities	FOC
118	ST 4.4.3 Provide Law Enforcement and Prisoner Control	FOC
119	ST 8.4.2 Assist in Combating Terrorism	FOC
120	ST 6.2.7.3 Provide Combat Search and Rescue	FOC
121	ST 4.2.1 Integrate Field Services	FOC
122	ST 2.5.2 Provide Follow- on Intelligence Support to Theater Strategic Planners and Decision Makers	FOC
122	ST 8.2.7 Assist in Restoration of Order	FOC
122	ST 8.2.8.1 Support Multilateral Peace Operations	FOC
125	ST 8.4.4 Counter Weapon and Technology Proliferation	FOC
125	ST 8.1.4 Develop Multinational Intelligence/ Information Sharing Structure	FOC
125	ST 6.2.9 Minimize Safety and Health Risks	FOC
125	ST 4.2.2.1 Manage Theater Joint Blood Program	FOC

Key:

#: UJTL parent task submitted because its children tasks do not, in total, comprehensively define all activities of the parent task.

*: Non-UJTL task submitted

a. J-8 --- Enemy WMD Attacks on Theater Strategic Targets. JWARS should represent enemy attacks against theater strategic targets using weapons of mass destruction. These attacks will produce mass or prolonged destruction, delays, or disruption. Examples include nuclear, biological or chemical attacks.

b. USMC --- Conduct Pre-positioning. Conduct operations associated with the conduct of Maritime Pre-positioning Forces, Land Base Pre-positioning Forces, and/or Afloat Pre-position Forces within the JOA.

c. PACOM 10 --- Determine deployment priorities. Determine deployment priorities to resolve bottlenecks.

d. SOUTHCOM --- Analyze the impact of COAs on the physical, military, and civil environment in the JOA (Reverse issue of ST5.3.1.2)

4. Prioritization and Categorization of Strategic National Tasks (Rank Order)

<u>Rank</u>	<u>Task Description</u>	<u>Cat.</u>
1	SN 3.3.1 Attack Strategic Targets	IOC
2	SN 3.3.2 Synchronize Strategic Attack	IOC
3	SN 1.1.5 Determine Impact of Threat, Climate, and Geography on Deployment	IOC
3	SN 3.2.1 Process Strategic Targets	IOC
5	SN 1.2.5 Move Forces from POE to POD	IOC
6	SN 1.1.2 Coordinate and Match Transportation Resources and Requirements	IOC
7	SN 1.1.3 Determine Possible Closure Times	IOC
8	SN 2.2.2 Support Combatant Commander's Surveillance and Reconnaissance Requirements	IOC
9	SN 1.2.1 Integrate Deployment Systems	IOC
10	SN 1.2.2 Provide Forces and Mobility Assets	IOC
10	SN 3.4.1 Provide Strategic Air Defense	IOC
12	SN 1.2.7 Coordinate Global Strategic Refueling	IOC
13	SN 1.1.1 Determine Transportation and Support Availability	IOC
14	SN 3.4.2 Provide Integrated Tactical Warning and Attack Assessment	IOC
15	SN 1.2.3 Provide Terminal Operations	IOC
16	SN 1.2.6 Backhaul Personnel and Equipment from Theater	IOC
17	SN 3.2.2 Generate and Disperse Strategic Forces	IOC
17	SN 3.5.3 Provide Space Force Enhancement	IOC
19	SN 2.2.1 Collect Information on Strategic Situation Worldwide	IOC
20	SN 1.2.4 Provide Movement to POE and Port Support Services	IOC
20	SN 2.3.3 Correlate National Strategic Information	IOC
22	SN 3.4.3 Provide Strategic Ballistic Missile Defense	IOC
22	SN 4.5 Set Sustainment Priorities	IOC
24	SN 2.3.2 Collate National Strategic Information	IOC
24	SN 3.4.4 Protect National Strategic Capabilities	IOC
24	SN 8.2.3 Support Evacuation of Noncombatants from Theaters	IOC
27	SN 1.1.4 Provide for En Route Support and Clearance	IOC
27	SN 2.4.1.2 Determine Enemy's Global Capabilities and Strategic Courses of Action	IOC
29	SN 3.1.5 Acquire Host Nation Support (HNS)	IOC
29	SN 3.3.5 Conduct National Combat Assessment	IOC
31	SN 3.3.4 Apply National Nonlethal Capabilities	IOC
32	SN 5.1.2 Manage National Military C4 Systems Worldwide for Communicating Strategic Information	IOC
32	SN 5.5 Coordinate Worldwide Information Warfare (IW)	IOC
34	SN 2.1.4 Allocate National Intelligence Resources Worldwide	IOC
34	SN 3.3.3 Demonstrate National Military Capabilities	IOC
36	SN 2.3.1 Conduct Technical Processing and Exploitation of Strategic Information	IOC
36	SN 5.1.1 Communicate Strategic Decisions/ Information	IOC
36	SN 5.2.3 Review Operation Plans	IOC
39	SN 2.4.1.3 Determine Enemy's Centers of Gravity	IOC
39	SN 5.1.3 Maintain Global Strategic Military Information and Force Status	IOC
41	SN 3.5.2 Provide Space Control	IOC
42	SN 5.3.2 Develop and Analyze Multinational and National Military Strategy Options	IOC
43	SN 4.4 Reconstitute National Forces And Means	IOC
43	SN 2.4.2.4 Provide Intelligence for National Strategic Targeting	IOC
43	SN 1.2.8 Provide Global Patient Movement Aeromedical Evacuation	IOC
43	SN 2.1.3 Prepare National Strategic Collection Plan	IOC
43	SN 5.3.5.3 Allocate Forces and Resources at Execution	IOC
43	SN 7.3.2 Develop Support Force Structure (Below- the- Line Force)	IOC

<u>Rank</u>	<u>Task Description</u>	<u>Cat.</u>
43	SN 7.5 Ensure Interoperability	IOC
43	SN 6.6.5 Expand Transportation System	IOC
51	SN 4.2.2 Provide Depot Supply and Maintenance	FOC
52	SN 3.1.1 Station Forces Forward in Theaters	FOC
53	SN 3.4.6 Protect National Strategic Information, Information- Based Processes, and Information Systems	FOC
54	SN 2.6 Evaluate Intelligence Activities	FOC
55	SN 3.4.5 Coordinate and Conduct Strategic Operations Security	FOC
55	SN 5.1.4 Monitor Worldwide Strategic Situation	FOC
57	SN 3.4.7 Provide Security for Strategic Forces and Means	FOC
58	SN 2.4.2.5 Provide Scientific and Technical Intelligence for R& D and Force Planning	FOC
58	SN 3.5.1 Provide Space Support	FOC
60	SN 2.4.2.1 Provide Worldwide National Strategic Indications and Warning	FOC
60	SN 3.4.10 Protect the National Sea Frontiers	FOC
62	SN 3.2.3 Manage Strategic Force Readiness Levels	FOC
62	SN 5.2.1 Conduct Joint Military Net Assessments	FOC

5. Prioritization and Categorization of Operational Tasks (UJTL Order)

<u>Task Description</u>	<u>Rank</u>	<u>Cat.</u>
OP 1.1 Conduct Operational Movement (submitted by OSD)#	22	IOC
OP 1.1.2 Conduct Intratheater Deployment and Redeployment of Forces Within Theater of Operations/ JOA	4	IOC
OP 1.1.3 Conduct Theater of Operations/ JOA Reception, Staging, Onward Movement and Integration (RSOI)	30	IOC
OP 1.2 Conduct Operational Maneuver (submitted by OSD)#	16	IOC
OP 1.2.1 Transition Joint Forces to and from Tactical Battle Formations	38	IOC
OP 1.2.2 Posture Joint Forces for Operational Formations	83	IOC
OP 1.2.3 Concentrate Forces in Theater of Operations/ JOA	51	IOC
OP 1.2.4 Conduct Operations in Depth (submitted by OSD)#	22	IOC
OP 1.2.4.1 Plan and Execute Show of Force	123	IOC
OP 1.2.4.2 Plan and Execute Demonstration	92	IOC
OP 1.2.4.3 Conduct Forcible Entry: Airborne, Amphibious, and Air Assault	1	IOC
OP 1.2.4.4 Reinforce and Expand Lodgment	20	IOC
OP 1.2.4.5 Conduct Raids in JOA	66	IOC
OP 1.2.4.6 Conduct Penetration, Direct Assault, and Turning Movements	16	IOC
OP 1.2.4.7 Conduct Direct Action in JOA	43	IOC
OP 1.2.4.8 Conduct Unconventional Warfare in Theater of Operations/ JOA	105	IOC
OP 1.2.5 Conduct Offensive Operations in Theater of Operations/ JOA	4	IOC
OP 1.2.6 Conduct Defensive Operations in Theater of Operations/ JOA	4	IOC
OP 1.2.7 Conduct Retrograde Operations in Theater of Operations/ JOA	22	IOC
OP 1.3 Provide Operational Mobility (submitted by OSD)#	22	IOC
OP 1.3.1 Overcome Operationally Significant Barriers, Obstacles, and Mines	28	IOC
OP 1.3.2 Enhance Movement of Operational Forces	43	IOC
OP 1.3.3 Coordinate Water Space Management	110	IOC
OP 1.4.1 Employ Operational System of Obstacles	55	IOC
OP 1.4.2 Plan and Execute Sanctions/ Embargo	139	FOC
OP 1.4.3 Plan and Execute Blockade	87	IOC
OP 1.4.4 Plan and Execute Maritime Interception	99	IOC
OP 1.5.1 Control Operationally Significant Land Area	32	IOC
OP 1.5.2 Gain and Maintain Maritime Superiority in Theater of Operations/ JOA	22	IOC
OP 1.5.3 Gain and Maintain Air Superiority in Theater of Operations/ JOA	12	IOC
OP 1.5.4 Isolate Theater of Operations/ JOA	40	IOC
OP 1.5.5 Assist Host Nation in Populace and Resource Control	141	FOC
OP 2.1.1 Determine and Prioritize Operational Priority Intelligence Requirements (PIR)	103	IOC
OP 2.1.2 Determine and Prioritize Operational Information Requirements (IR)	105	IOC
OP 2.1.3 Prepare Operational Collection Plan	119	IOC
OP 2.1.4 Allocate Intelligence Resources in Theater of Operations/ JOA	87	IOC
OP 2.2.1 Collect Information on Operational Situation	27	IOC
OP 2.2.2 Directly Support Theater Strategic Surveillance and Reconnaissance Requirements	56	IOC
OP 2.3.1 Conduct Technical Processing and Exploitation in Theater of Operations/ JOA	128	IOC
OP 2.3.2 Collate Information	94	IOC
OP 2.3.3 Correlate Information	77	IOC
OP 2.4.1.1 Identify Operational Issues and Threats	69	IOC
OP 2.4.1.2 Determine Enemy's Operational Capabilities, Course of Action, and Intentions	62	IOC
OP 2.4.2.1 Provide Indications and Warning for Theater of Operations/ JOA	87	IOC

<u>Task Description</u>	<u>Rank</u>	<u>Cat.</u>
OP 2.4.2.2 Provide Current Intelligence for Theater of Operations/ JOA	90	IOC
OP 2.4.2.3 Provide General Military Intelligence for Theater of Operations/ JOA	74	IOC
OP 2.4.2.4 Provide Target Intelligence for Theater of Operations/ JOA	40	IOC
OP 2.5.1 Provide Intelligence for Theater of Operations/ JOA	73	IOC
OP 2.5.2 Provide Follow- on Intelligence Support to Theater of Operations/ JOA Planners and Decision Makers	123	IOC
OP 2.6 Evaluate Intelligence Activities In Theater Of Operations/JOA	133	IOC
OP 3.1.1 Establish Joint Force Targeting Guidance	115	IOC
OP 3.1.2 Assign Joint/ Multinational Operational Firepower Resources	52	IOC
OP 3.1.3 Develop Operational Targets	30	IOC
OP 3.1.4 Prioritize High Payoff and High- Value Targets	46	IOC
OP 3.1.5 Publish Tasking Order(s) for Employment of Air Assets and Other Means	52	IOC
OP 3.1.6.1 Assess Battle Damage on Operational Targets	12	IOC
OP 3.1.6.2 Assess Munitions Effects on Operational Targets	34	IOC
OP 3.1.6.3 Assess Reattack Requirement	42	IOC
OP 3.1.7 Develop Fire Support Coordination Measures	70	IOC
OP 3.2.1 Attack Operational Land/ Maritime Targets	2	IOC
OP 3.2.2.1 Employ PSYOP in Theater of Operations/ JOA	133	IOC
OP 3.2.2.2 Employ Electronic Attack (EA) in Theater of Operations/JOA	28	IOC
OP 3.2.2.3 Employ Information Attack in Theater of Operations/ JOA	79	IOC
OP 3.2.2.4 Conduct Nonlethal Attack on Personnel, Equipment, and Installations	119	IOC
OP 3.2.3 Attack Aircraft and Missiles (Offensive Counterair)	10	IOC
OP 3.2.4 Suppress Enemy Air Defenses	3	IOC
OP 3.2.5.1 Conduct Air Interdiction of Operational Forces/ Targets	7	IOC
OP 3.2.5.2 Conduct Surface/ Subsurface Firepower Interdiction of Operational Forces/ Targets	16	IOC
OP 3.2.5.3 Conduct Special Operations Interdiction of Operational Forces/ Targets	57	IOC
OP 3.2.6 Provide Firepower in Support of Operational Maneuver	15	IOC
OP 3.2.7 Synchronize Operational Firepower	32	IOC
OP 4.1 Coordinate Supply Of Arms, Ammunition, And Equipment In Theater Of OPS/JOA	35	IOC
OP 4.2 Synchronize Supply Of Fuel In Theater Of Operations/JOA	43	IOC
OP 4.3 Provide For Maintenance Of Equipment In Theater Of Operations/JOA	62	IOC
OP 4.4 Coordinate Support for Forces in Theater of Operations/JOA (submitted by OSD)#	74	IOC
OP 4.4.1.1 Coordinate Theater of Operations/ JOA Support for Personnel	138	FOC
OP 4.4.3 Provide for Health Services in Theater of Operations/JOA (submitted by OSD)#	143	FOC
OP 4.4.3.2 Manage Flow of Casualties in Theater of Operations/ JOA	115	IOC
OP 4.4.3.3 Manage Health Services Resources in Theater of Operations/JOA	146	FOC
OP 4.4.4 Reconstitute Forces	59	IOC
OP 4.5 Manage Logistic Support in Theater of Operations/JOA (submitted by OSD)#	66	IOC
OP 4.5.1 Provide for Movement Services in Theater of Operations/ JOA	46	IOC
OP 4.5.2 Supply Operational Forces	36	IOC
OP 4.5.4 Coordinate Recovery and Salvage	151	FOC
OP 4.6.1 Determine Number and Location of Sustaining Bases in Theater of Operations/ JOA	113	IOC
OP 4.6.2 Provide Civil- Military Engineering	115	IOC
OP 4.6.3 Expand Capacity of PODs and Allocate Space in the Theater of Operations/ JOA	113	IOC
OP 4.6.4 Provide Law Enforcement and Prisoner Control	146	FOC
OP 4.7.2 Conduct CMO in Theater of Operations/ JOA	137	FOC
OP 4.7.3 Provide Support to DOD and Other Government Agencies	148	FOC
OP 4.7.6 Coordinate Civil Affairs in Theater of Operations/JOA	151	FOC

<u>Task Description</u>	<u>Rank</u>	<u>Cat.</u>
OP 5.1.1 Communicate Operational Information	70	IOC
OP 5.1.2 Manage Means of Communicating Operational Information	79	IOC
OP 5.1.3 Determine Commander's Critical Information Requirements	142	FOC
OP 5.1.4 Maintain Operational Information and Force Status	60	IOC
OP 5.1.5 Monitor Strategic Situation	102	IOC
OP 5.2.1 Review Current Situation (Project Branches)	127	IOC
OP 5.2.2 Formulate Crisis Assessment	148	FOC
OP 5.2.3 Project Future Campaigns and Major Operations (Sequels)	126	IOC
OP 5.3.1 Conduct Operational Mission Analysis	121	IOC
OP 5.3.3 Determine Operational End State	121	IOC
OP 5.3.4 Develop Courses of Action/ Prepare Staff Estimates	81	IOC
OP 5.3.5 Analyze Courses of Action	65	IOC
OP 5.3.6 Compare Courses of Action	57	IOC
OP 5.3.7 Select or Modify Course of Action	20	IOC
OP 5.4.2 Issue Plans and Orders	145	FOC
OP 5.4.3 Provide Rules of Engagement	129	IOC
OP 5.4.4 Synchronize/ Integrate Operations	70	IOC
OP 5.4.5 Coordinate/ Integrate Components, Theater, and Other Support	130	IOC
OP 5.5.1 Develop a Joint Force Command and Control Structure	125	IOC
OP 5.5.4 Deploy Joint Force Headquarters Advance Elements	140	FOC
OP 5.5.5 Establish Command Transition Criteria and Procedures	151	FOC
OP 5.5.6 Establish or Participate in Task Forces	83	IOC
OP 5.6.1 Plan and Integrate Operational IW	107	IOC
OP 5.6.2 Plan and Integrate Operational C2W	78	IOC
OP 5.6.3 Control IW Operations	83	IOC
OP 5.7.3 Develop Multinational Intelligence/ Information Sharing Structure	110	IOC
OP 5.7.4 Coordinate Plans with Non- DOD Organizations	150	FOC
OP 5.7.5 Coordinate Host Nation Support	109	IOC
OP 5.7.6 Coordinate Coalition Support	92	IOC
OP 5.8.2 Coordinate Command/ Internal Information Programs	151	FOC
OP 6.1 Provide Operational Aerospace and Missile Defense#	19	IOC
OP 6.1.1 Process/ Allocate Operational Aerospace Targets	36	IOC
OP 6.1.2 Integrate Joint/ Multinational Operational Aerospace Defense	48	IOC
OP 6.1.3.1 Employ Positive Control Measures	94	IOC
OP 6.1.3.2 Employ Procedural Control Measures	110	IOC
OP 6.1.4 Counter Enemy Air Attack in Theater of Operations/ JOA	8	IOC
OP 6.1.5 Conduct Operational Area Missile Defense	8	IOC
OP 6.1.6 Conduct Tactical Warning and Attack Assessment in Theater of Operations/ JOA	48	IOC
OP 6.2 Provide Protection for Operational Forces, Means, and Noncombatants (submitted by OSD)#	48	IOC
OP 6.2.1 Prepare Operationally Significant Defenses	66	IOC
OP 6.2.2 Remove Operationally Significant Hazards	81	IOC
OP 6.2.3 Protect Use of Electromagnetic Spectrum in Theater of Operations/ JOA	74	IOC
OP 6.2.4 Protect Use of the Acoustic Spectrum in Theater of Operations/ JOA	115	IOC
OP 6.2.5 Provide Positive Identification of Friendly Operational Forces Within Theater of Operations/ JOA	62	IOC
OP 6.2.6 Conduct Evacuation of Noncombatants from Theater of Operations/ JOA	91	IOC
OP 6.2.7 Establish Disaster Control Measures	135	FOC
OP 6.2.8 Establish NBC Protection in Theater of Operations/ JOA	60	IOC
OP 6.2.9.2 Provide Combat Search and Rescue	132	IOC
OP 6.3.1 Employ Operations Security (OPSEC) in Theater of Operations/ JOA	101	IOC
OP 6.3.2 Supervise Communications Security (COMSEC)	108	IOC
OP 6.3.3 Employ Theater Electronics Security for Operational Forces	103	IOC

<u>Task Description</u>	<u>Rank</u>	<u>Cat.</u>
OP 6.3.4 Protect Information Systems in Theater of Operations/ JOA	96	IOC
OP 6.4.1 Develop Operational Deception Plan	136	FOC
OP 6.4.2 Conduct Operational Deception	96	IOC
OP 6.4.3 Assess Effect of Operational Deception Plan	96	IOC
OP 6.5.1 Provide Counter- Reconnaissance in Theater of Operations/ JOA	83	IOC
OP 6.5.2 Protect and Secure Flanks, Rear Areas, and COMMZ in Theater of Operations/ JOA	52	IOC
OP 6.5.3 Protect/ Secure Operationally Critical Installations, Facilities, and Systems	39	IOC
OP 6.5.4 Protect and Secure Air, Land, and Sea LOCs in Theater of Operations/ JOA	12	IOC
OP 6.5.5 Integrate Host Nation Security Forces and Means	99	IOC
J-8 --- Enemy WMD attacks on operational targets*	11	IOC
PACOM 3 --- Estimate Readiness*	144	FOC
PACOM 8 --- Support SSC operations*	131	IOC

Key:

#: UJTL parent task submitted because its children tasks do not, in total, comprehensively define all warfare analysis activities of the parent task.

*: Non-UJTL submitted tasks

- a. J-8 --- Enemy WMD Attacks on Operational Targets. JWARS should represent enemy attacks against operational targets using weapons of mass destruction. These attacks will produce mass or prolonged destruction, delays, or disruption. Examples include nuclear, biological or chemical attacks.
- b. PACOM 8 --- Support SSC operations. Develop the proposed mission and its elements.
- c. PACOM 3 --- Estimate readiness. Estimate the readiness of U.S. military forces, U.S. agency elements, and coalition elements to perform the mission.

6. Prioritization and Categorization of Strategic Theater Tasks (UJTL Order)

<u>Task Description</u>	<u>Rank</u>	<u>Cat.</u>
ST 1.1 Conduct intratheater strategic deployment (submitted by J-4)#	10	IOC
ST 1.1.2.1 Provide Theater Strategic Reception	29	IOC
ST 1.1.2.2 Provide Theater Strategic Staging	20	IOC
ST 1.1.2.3 Provide Onward Movement in AOR	19	IOC
ST 1.1.2.4 Provide Theater Strategic Integration of Deploying Forces	59	IOC
ST 1.1.3 Conduct Intratheater Deployment of Forces	4	IOC
ST 1.1.4 Provide Command and Control of Deploying Units	48	IOC
ST 1.1.5 Provide for Intratheater Refueling	17	IOC
ST 1.2 Concentrate Forces	39	IOC
ST 1.3.1 Posture Forces for Strategic Maneuver	32	IOC
ST 1.3.2 Designate Strategic Reserves	79	IOC
ST 1.3.3. Synchronize Forcible Entry in Theater of War	15	IOC
ST 1.3.4 Integrate Direct Action in Theater	26	IOC
ST 1.3.5 Coordinate Show of Force/ Demonstration	95	IOC
ST 1.3.6 Conduct Theater of War Operations in Depth	10	IOC
ST 1.3.7 Coordinate Unconventional Warfare Across Theaters of Operations	79	IOC
ST 1.3.8 Establish Water Space Management	92	IOC
ST 1.4 Enhance Strategic Mobility	45	IOC
ST 1.5.1 Establish Strategic System of Barriers	22	IOC
ST 1.5.2 Establish Sanctions	70	IOC
ST 1.6.1 Control Strategically Significant Land Area	14	IOC
ST 1.6.2 Gain and Maintain Air Superiority in Theater of War	8	IOC
ST 1.6.3 Gain and Maintain Maritime Superiority in Theater of War	6	IOC
ST 1.6.4 Gain and Maintain Information Superiority in Theater of War/ AOR	17	IOC
ST 2.1.1 Determine and Prioritize Theater Strategic Priority Intelligence Requirements (PIR)	101	IOC
ST 2.1.2 Determine and Prioritize Theater Strategic Information Requirements (IR)	116	FOC
ST 2.1.3 Prepare Theater Strategic Collection Plan	87	IOC
ST 2.1.4 Allocate Intelligence Resources in AOR	59	IOC
ST 2.2.1 Collect Information on Theater Strategic Situation	25	IOC
ST 2.2.2 Support National and JTF Surveillance Reconnaissance Requirements	26	IOC
ST 2.3.1 Conduct Technical Processing and Exploitation	98	IOC
ST 2.3.2 Collate Theater Strategic Information	52	IOC
ST 2.3.3 Correlate Theater Strategic Information	44	IOC
ST 2.4.1.1 Identify Theater Issues and Threats	74	IOC
ST 2.4.1.2 Determine Enemy's Theater Strategic Capabilities and Intentions	68	IOC
ST 2.4.2.1 Provide Theater Strategic Indications and Warning	57	IOC
ST 2.4.2.2 Provide Theater Current Intelligence	53	IOC
ST 2.4.2.3 Provide Theater General Military Intelligence	93	IOC
ST 2.4.2.4 Provide Target Intelligence for Theater Planning and Execution	26	IOC
ST 2.5.1 Provide Theater Strategic Intelligence	49	IOC
ST 2.5.2 Provide Follow- on Intelligence Support to Theater Strategic Planners and Decision Makers	122	FOC
ST 2.6 Evaluate Intelligence Activities in AOR	106	IOC
ST 3.1.1 Select Strategic Targets in the Theater for Attack	12	IOC
ST 3.1.2 Assign Joint/ Multinational Theater Firepower	35	IOC
ST 3.1.3 Conduct Theater Combat Assessment	2	IOC
ST 3.2.1 Conduct Lethal Attack on Theater Strategic Targets	1	IOC
ST 3.2.2.1 Conduct Theater Psychological Activities	117	FOC
ST 3.2.2.2 Conduct Theater Electronic Attack (EA)	5	IOC

<u>Task Description</u>	<u>Rank</u>	<u>Cat.</u>
ST 3.2.2.3 Attack Theater Information Systems	20	IOC
ST 3.2.3 Integrate Theater Strategic Firepower	8	IOC
ST 4.1 Coordinate The Fixing And Maintaining Of Equipment	53	IOC
ST 4.2.1 Integrate Field Services	121	FOC
ST 4.2.2 Provide health service support (submitted by J-4 and OSD)#	108	IOC
ST 4.2.2.1 Manage Theater Joint Blood Program	125	FOC
ST 4.2.2.2 Coordinate Patient Evacuation from AOR	115	FOC
ST 4.2.3 Reconstitute Theater Forces	64	IOC
ST 4.3 OSD 1: Distribute supplies/services for theater campaign and COMMZ (submitted by OSD)#	45	IOC
ST 4.3.1 Provide for Movement Services Within AOR	41	IOC
ST 4.3.2 Provide supplies & services for theater forces (submitted by J-4)#	39	IOC
ST 4.3.2.1 Allocate All Classes of Supply per Theater Strategic Plan	43	IOC
ST 4.3.2.2 Build Up Stockage Levels for Theater Campaign	32	IOC
ST 4.3.2.3 Provide Maintenance Services and Parts for Theater Campaign	41	IOC
ST 4.4.1 Determine Number and Location of Sustaining Bases	81	IOC
ST 4.4.2 Provide Civil- Military Engineering in Theater	64	IOC
ST 4.4.3 Provide Law Enforcement and Prisoner Control	118	FOC
ST 4.4.4 Manage and Integrate Third Party Logistics	114	FOC
ST 5.1.1 Communicate Strategic and Operational Decisions and Information	49	IOC
ST 5.1.2 Manage Theater C4 Systems for Communicating Strategic Orders and Information	84	IOC
ST 5.1.3 Maintain Strategic Information	45	IOC
ST 5.1.4 Monitor Worldwide and Theater Strategic Situation	75	IOC
ST 5.2.1 Review Current Situation	89	IOC
ST 5.2.5 Project Future Theater Campaigns or Strategic Operations.	105	IOC
ST 5.3.1.1 Develop Theater Courses of Action and Prepare Staff Estimates	84	IOC
ST 5.3.1.2 Analyze and Compare Theater Courses of Action	53	IOC
ST 5.3.1.3 Select/ Modify Theater Course of Action and Prepare Commander's Estimate	66	IOC
ST 5.3.4 Prepare and Coordinate Theater Strategy	110	IOC
ST 5.4.2 Synchronize Joint Operations and Subordinate Campaign Plans	70	IOC
ST 5.5 Coordinate theater-wide information warfare (IW) (submitted by J-4 and OSD)#	35	IOC
ST 5.5.1 Plan and Integrate Theater- wide IW	53	IOC
ST 5.5.2 Control Theater IW Operations	72	IOC
ST 6.1.1 Process Theater Aerospace Targets	22	IOC
ST 6.1.2 Provide Airspace Control Measures	35	IOC
ST 6.1.3 Provide Requirements for Force Enhancement from Space- Based Assets	75	IOC
ST 6.1.4 Provide Theater Air Defense	2	IOC
ST 6.1.5 Provide Theater Missile Defense	7	IOC
ST 6.1.6 Support Tactical Warning and Attack Assessment in AOR	29	IOC
ST 6.2 Provide protection for theater strategic forces and means (submitted by OSD)#	22	IOC
ST 6.2.1 Prepare Strategically Significant Defenses	81	IOC
ST 6.2.2 Remove Strategically Significant Hazards	87	IOC
ST 6.2.3 Protect Use of Electromagnetic Spectrum	57	IOC
ST 6.2.4 Provide Acoustic Protection	96	IOC
ST 6.2.5 Provide Positive Identification of Friendly Strategic Forces in Theater	32	IOC
ST 6.2.6.1 Integrate Counter- reconnaissance Theater- Wide	68	IOC
ST 6.2.6.2 Secure and Protect Theater Installations	49	IOC
ST 6.2.6.3 Secure and Protect Theater Air	15	IOC
ST 6.2.6.4 Integrate Theater- Wide Counterintelligence Requirements	84	IOC
ST 6.2.7.3 Provide Combat Search and Rescue	120	FOC
ST 6.2.8 Establish NBC Defense in Theater	31	IOC
ST 6.2.9 Minimize Safety and Health Risks	125	FOC

<u>Task Description</u>	<u>Rank</u>	<u>Cat.</u>
ST 6.3.1 Employ Theater Operations Security (OPSEC)	89	IOC
ST 6.3.2 Employ Theater Electronics Security	81	IOC
ST 6.3.3 Supervise Communications Security (COMSEC)	93	IOC
ST 6.3.4 Coordinate Concealment of Theater Forces/ Facilities	78	IOC
ST 6.3.5 Protect Theater Information Systems	75	IOC
ST 6.4.1 Protect Details of Theater Strategy and Campaign Plans and Operations	106	IOC
ST 6.4.2 Misinform Adversary Regarding Conduct of Theater Strategy	102	IOC
ST 6.4.3 Assess Effect of Theater Deception Plan	89	IOC
ST 7.1.2 Determine Deployment Requirements	63	IOC
ST 7.1.3 Tailor Joint Forces for Deployment	66	IOC
ST 7.1.4 Determine and Validate Forces and Cargo to be Deployed or Redeployed	72	IOC
ST 7.1.5 Determine Theater Warfighting and Other Needs	99	IOC
ST 7.1.6 Determine Theater Force Size and Structure Requirements	59	IOC
ST 7.2.1 Determine and Report Force Readiness	102	IOC
ST 7.2.2 Assess and Report Theater Military Capability	102	IOC
ST 8.1.4 Develop Multinational Intelligence/ Information Sharing Structure	125	FOC
ST 8.2.10 Coordinate Multinational Operations Within AOR	110	IOC
ST 8.2.7 Assist in Restoration of Order	122	FOC
ST 8.2.8.1 Support Multilateral Peace Operations	122	FOC
ST 8.2.8.2 Conduct Peacekeeping	112	IOC
ST 8.2.8.3 Conduct Peace Enforcement	113	IOC
ST 8.3.3 Arrange Sustainment Support for Theater Forces	59	IOC
ST 8.4.2 Assist in Combating Terrorism	119	FOC
ST 8.4.3 Coordinate Evacuation and Repatriation of Noncombatants from Theater	96	IOC
ST 8.4.4 Counter Weapon and Technology Proliferation	125	FOC
USMC --- Conduct Pre-positioning*	35	IOC
J-8 --- Enemy WMD attacks on strategic targets*	13	IOC
PACOM 10 --- Determine deployment priorities*	100	IOC
SOUTHCOM --- Analyze the impact of COAs on the physical, military, and civil environment*	108	IOC

Key:

#: UJTL parent task submitted because its children tasks do not, in total, comprehensively define all activities of the parent task.

*: Non-UJTL task submitted

a. J-8 --- Enemy WMD Attacks on Theater Strategic Targets. JWARS should represent enemy attacks against theater strategic targets using weapons of mass destruction. These attacks will produce mass or prolonged destruction, delays, or disruption. Examples include nuclear, biological or chemical attacks.

b. USMC --- Conduct Pre-positioning. Conduct operations associated with the conduct of Maritime Pre-positioning Forces, Land Base Pre-positioning Forces, and/or Afloat Pre-position Forces within the JOA.

c. PACOM 10 --- Determine deployment priorities. Determine deployment priorities to resolve bottlenecks.

d. SOUTHCOM --- Analyze the impact of COAs on the physical, military, and civil environment in the JOA (Reverse issue of ST5.3.1.2)

7. Prioritization and Categorization of Strategic National Tasks (UJTL Order)

<u>Task Description</u>	<u>Rank</u>	<u>Cat.</u>
SN 1.1.1 Determine Transportation and Support Availability	13	IOC
SN 1.1.2 Coordinate and Match Transportation Resources and Requirements	6	IOC
SN 1.1.3 Determine Possible Closure Times	7	IOC
SN 1.1.4 Provide for En Route Support and Clearance	27	IOC
SN 1.1.5 Determine Impact of Threat, Climate, and Geography on Deployment	3	IOC
SN 1.2.1 Integrate Deployment Systems	9	IOC
SN 1.2.2 Provide Forces and Mobility Assets	10	IOC
SN 1.2.3 Provide Terminal Operations	15	IOC
SN 1.2.4 Provide Movement to POE and Port Support Services	20	IOC
SN 1.2.5 Move Forces from POE to POD	5	IOC
SN 1.2.6 Backhaul Personnel and Equipment from Theater	16	IOC
SN 1.2.7 Coordinate Global Strategic Refueling	12	IOC
SN 1.2.8 Provide Global Patient Movement Aeromedical Evacuation	43	IOC
SN 2.1.3 Prepare National Strategic Collection Plan	43	IOC
SN 2.1.4 Allocate National Intelligence Resources Worldwide	34	IOC
SN 2.2.1 Collect Information on Strategic Situation Worldwide	19	IOC
SN 2.2.2 Support Combatant Commander's Surveillance and Reconnaissance Requirements	8	IOC
SN 2.3.1 Conduct Technical Processing and Exploitation of Strategic Information	36	IOC
SN 2.3.2 Collate National Strategic Information	24	IOC
SN 2.3.3 Correlate National Strategic Information	20	IOC
SN 2.4.1.2 Determine Enemy's Global Capabilities and Strategic Courses of Action	27	IOC
SN 2.4.1.3 Determine Enemy's Centers of Gravity	39	IOC
SN 2.4.2.1 Provide Worldwide National Strategic Indications and Warning	60	FOC
SN 2.4.2.4 Provide Intelligence for National Strategic Targeting	43	IOC
SN 2.4.2.5 Provide Scientific and Technical Intelligence for R& D and Force Planning	58	FOC
SN 2.6 Evaluate Intelligence Activities	54	FOC
SN 3.1.1 Station Forces Forward in Theaters	52	FOC
SN 3.1.5 Acquire Host Nation Support (HNS)	29	IOC
SN 3.2.1 Process Strategic Targets	3	IOC
SN 3.2.2 Generate and Disperse Strategic Forces	17	IOC
SN 3.2.3 Manage Strategic Force Readiness Levels	62	FOC
SN 3.3.1 Attack Strategic Targets	1	IOC
SN 3.3.2 Synchronize Strategic Attack	2	IOC
SN 3.3.3 Demonstrate National Military Capabilities	34	IOC
SN 3.3.4 Apply National Nonlethal Capabilities	31	IOC
SN 3.3.5 Conduct National Combat Assessment	29	IOC
SN 3.4.1 Provide Strategic Air Defense	10	IOC
SN 3.4.10 Protect the National Sea Frontiers	60	FOC
SN 3.4.2 Provide Integrated Tactical Warning and Attack Assessment	14	IOC
SN 3.4.3 Provide Strategic Ballistic Missile Defense	22	IOC
SN 3.4.4 Protect National Strategic Capabilities	24	IOC
SN 3.4.5 Coordinate and Conduct Strategic Operations Security	55	FOC
SN 3.4.6 Protect National Strategic Information, Information- Based Processes, and Information Systems	53	FOC
SN 3.4.7 Provide Security for Strategic Forces and Means	57	FOC
SN 3.5.1 Provide Space Support	58	FOC
SN 3.5.2 Provide Space Control	41	IOC
SN 3.5.3 Provide Space Force Enhancement	17	IOC
SN 4.2.2 Provide Depot Supply and Maintenance	51	FOC

<u>Task Description</u>	<u>Rank</u>	<u>Cat.</u>
SN 4.4 Reconstitute National Forces And Means	43	IOC
SN 4.5 Set Sustainment Priorities	22	IOC
SN 5.1.1 Communicate Strategic Decisions/ Information	36	IOC
SN 5.1.2 Manage National Military C4 Systems Worldwide for Communicating Strategic Information	32	IOC
SN 5.1.3 Maintain Global Strategic Military Information and Force Status	39	IOC
SN 5.1.4 Monitor Worldwide Strategic Situation	55	FOC
SN 5.2.1 Conduct Joint Military Net Assessments	62	FOC
SN 5.2.3 Review Operation Plans	36	IOC
SN 5.3.2 Develop and Analyze Multinational and National Military Strategy Options	42	IOC
SN 5.3.5.3 Allocate Forces and Resources at Execution	43	IOC
SN 5.5 Coordinate Worldwide Information Warfare (IW)	32	IOC
SN 6.6.5 Expand Transportation System	43	IOC
SN 7.3.2 Develop Support Force Structure (Below- the- Line Force)	43	IOC
SN 7.5 Ensure Interoperability	43	IOC
SN 8.2.3 Support Evacuation of Noncombatants from Theaters	24	IOC

Appendix C. JWARS WARFARE FUNCTIONALITY

1. Introduction

a. This appendix is a refinement of the list of tasks at Appendix B and contains descriptions of warfare functionality for JWARS releases 1 and 2 (Limited IOC and Full IOC respectively) that are constrained by cost and technical feasibility. The descriptions are the result of initial work by the Integrated Process Team (IPT) and follow-on work by the Joint Warfare Refinement Group (JWARG) (composed of representatives of the CINCs, Services, Joint Staff and OSD) and the JWARS Office.

b. The warfare functionality described below was developed using the following sequential approach.

(1) The measures of performance (MOPs) associated with the UJTL tasks from Appendix B labeled IOC were evaluated by the JWARG in accordance with the threshold identified at 4b(3)(a)(ii).

(2) The JWARS Office grouped the MOPs into work units of warfare functionality called “threads.” Threads are units of work that are described by intent statements and MOPs. Below is the list of thread intent statements developed from the IOC tasks at Appendix B. A complete thread description with associated MOPs is contained in the Thread Report available from the JWARS Office.

(3) The JWARG, using the Study Execution KPP at 4b(3)(a)(ii) as a basis for assessing each description, evaluated the threads and identified the threshold and objective threads associated with release 2.

(4) Finally, the core JWARG (composed of representatives of the Services, Joint Staff and OSD), using the release 2 threshold threads, identified the threshold and objective threads associated with release 1.

2. Warfare Functionality. In this section, warfare functionality descriptions are grouped into four areas. The four groupings are Strategic Logistics, Theater Logistics, Perception, and Operations. For each release of JWARS, warfare functionality descriptions or “threads” are designated as threshold and objective and annotated by a “T” and “O” respectively. The minus or (-) following the three release 2 threshold threads, 1.2.7 S (-), 1.2.7 T (-), and 6.2.6 B (-), indicates these are simplified versions of objective threads, 1.2.7 S, 1.2.7 T and 6.2.6 B. Additionally, in several cases, developing the desired functionality will require multiple threads which have been annotated within the thread name as “initial” or “additional.”

a. Strategic Logistics Module

<u>Release 1</u>	<u>Release 2</u>	<u>Thread Number, Name, Intent Statement</u>
T	T	1.1.2 W Schedule Strategic Transportation Resources (Planning). This thread develops the functionality to match transportation resources to movement requirements and schedule itineraries for strategic lift ships and aircraft. The functionality of this thread develops the initial plan for the deployment that is executed by the strategic deployment simulation elements of the model.
T	T	1.1.2 X Schedule Strategic Transportation Resources (Re-planning). This thread develops the functionality to update the strategic deployment plan. Re-planning is initiated periodically as the plan becomes obsolete due to deviations of current activities from the plan, or in response to triggering events occurring in the theater.
T	T	1.2.5 S Move Forces from Port of Embarkation (POE) to Port of Debarkation (POD) (Air). This thread provides the functionality to simulate the movement of forces, personnel, equipment, and supplies by strategic airlift from the port of embarkation to the port of debarkation. It represents the effects of dynamic changes in the operation that affect the airlift flow.
T	T	1.2.5 T Move Forces from Port of Embarkation (POE) to Port of Debarkation (POD) (Sea). This thread provides the functionality to simulate the movement of forces, personnel, equipment, and supplies by strategic sealift from the port of embarkation to the port of debarkation. It represents the effects of dynamic changes in the operation that affect the sealift flow.
O	T	1.1.2 S Conduct Theater Aerial Port Operations. This thread develops the functionality associated with operating theater aerial ports. Included in this representation are the effects of passenger and cargo reception activities.
O	T	1.1.2 T Conduct Theater Seaport Operations. This thread develops the functionality associated with operating theater seaports. Included in this representation are the effects of passenger, cargo and fuel reception activities.
O	T	1.2.2 S Establish Strategic Transportation Network. This thread sets up and activates the strategic mobility deployment system. It provides the definition of the inter-theater air and sea transportation networks, places transportation assets on the networks, and initializes Air Port of Debarkation (APOD) and Sea Port of Debarkation (SPOD) throughput capacity. This thread provides the command and control of the strategic transportation system.
O	T	1.2.7 S (-) Global Strategic Refueling of Airlift Aircraft. This thread is a simplified representation of thread 1.2.7S. The intent is to limit the flow of airlift aircraft due to the availability of strategic refueling assets.
O	T	1.2.7 T (-) Global Strategic Refueling for Deploying Aircraft. This thread is a simplified representation of thread 1.2.7T. The intent is to limit the flow of deploying aircraft due to the availability of strategic refueling assets.

<u>Release</u> <u>1</u>	<u>Release</u> <u>2</u>	<u>Thread Number, Name, Intent Statement</u>
O	T	4.6.2 A Control Aerial Port of Debarkation (APOD) Throughput Capacity. This thread provides the functionality to represent the operations and the application of resources to expand or restore the capacity of an aerial port to accommodate required throughput in response to changing aspects of the operation. This thread provides the functionality to assess the changes in throughput capacity due to operational activities and to institute the corrective action based on availability of assets.
O	T	4.6.2 B Control Seaport of Debarkation (SPOD) Throughput Capacity. This thread provides the functionality to represent the operations and the application of resources to expand or restore the capacity of a sea port to accommodate required throughput in response to changing aspects of the operation. This thread provides the functionality to assess the changes in throughput capacity due to operational activities and to institute the corrective action based on availability of assets.
O	T	5.3.1 Exercise Logistics Command and Control. This thread provides the functionality to represent the establishment of the theater logistics command and control structure. The functionality enables the assessment of the current logistics support status based upon a consolidation of the logistics sustainment requirements, an assessment of the status of supply distribution and integration of these requirements with the strategic logistics flow. This thread provides the command and control decision making for threads, 4.5.1 and 4.5.2.
	O	1.2.0 S Conduct Voluntary Intermodal Sealift Agreement (VISA) Operations. This thread develops the functionality to model the scheduling and employment of Voluntary Intermodal Sealift Agreement (VISA) shipping capacity to move equipment and supplies. This thread represents the effects of employing commercially controlled shipping to support sealift requirements for the operation.
	O	1.2.6 S Backhaul Personnel and Equipment from the Theater. The thread develops the functionality to simulate the backhaul movement of US and other designated personnel and equipment from operational areas. This thread develops the command and control functionality needed to schedule limited retrograde airlift and sealift using available strategic lift assets. This thread also implements the functionality for strategic aeromedical evacuation of casualties and the emergency evacuation of noncombatants.
	O	1.2.7 S Global Strategic Refueling of Airlift Aircraft. This thread provides the functionality to simulate the command and control and employment of strategic aerial refueling assets to refuel transiting strategic airlift aircraft. This thread develops the functionality to coordinate refueling for the support of strategic airlift aircraft to reach their destination without dependence on diplomatic clearances and landing rights in foreign nations.
	O	1.2.7 T Global Strategic Refueling for Deploying Aircraft. This thread provides the functionality to simulate the command and control and employment of strategic aerial refueling assets to refuel deploying fighter, bomber, and other aircraft. This thread develops the functionality to coordinate refueling for the support of fighter, bomber, and other deploying aircraft to reach their destination without dependence on diplomatic clearances and landing rights in foreign nations.

b. Theater Logistics Module

<u>Release 1</u>	<u>Release 2</u>	<u>Thread Number, Name, Intent Statement</u>
T	T	1.1.1 A Distribute Support to Land-Based Forces. This thread provides the functionality to represent the distribution of sustainment assets, including personnel, equipment, ammunition, fuel and general supplies to theater land-based forces.
O	T	1.1.1 B Allocate Sustainment Stocks. This thread develops the functionality associated with the managing and allocating sustainment support within the theater of operations. The functionality determines available sustainment assets and distributes them to requesting units to best satisfy current and planned JTF operations.
T	T	1.1.1 C Schedule Intratheater Transportation. This thread develops the functionality to allocate intratheater common user transportation assets and to schedule the movement of units and sustainment assets (personnel, equipment, ammunition, fuel and general supplies) within the theater of operations. Movements are scheduled through a constrained intratheater multi-modal network using constrained transportation assets and include initial moves from port staging areas.
T	T	1.1.1 D Establish Intratheater Multi-Modal Network. This thread develops the functionality to create an intratheater multi-modal network consisting of arcs and nodes. The arcs will represent the various modes of intratheater transportation available for the given scenario. The nodes will represent the end points of arcs and intermediate points of interest on arcs. The functionality includes that needed to perform completeness checking and reachability checking in support of the scheduler developed in thread 1.1.1 C.
T	T	1.1.1 E Control Intratheater Multi-Modal Network. This thread develops the functionality to receive information from the synthetic natural environment and the simulated battle environment and update the state of arcs and nodes on the multi-modal network. The intratheater transportation network arcs and nodes are responsive to capacity change due to physical and operational environments.
T	T	1.1.2 V Conduct Integration of Units. This thread integrates Battlespace Entities, which are determined to be operationally ready into the command and control structure. It provides the representation of the transition from unit arrivals to unit availability for operational mission tasking. Operational capability is provided over time as units are assembled and meet availability criteria.
O	T	1.1.5 S Provide Intratheater Aerial Refueling. This thread develops the functionality to model intra-theater aerial refueling to support the employment of land-based and sea-based aerial forces within the theater. Aerial refueling elements are scheduled in the Air Tasking Order (ATO) to provide support to other aircraft as they perform their missions.

<u>Release</u> <u>1</u>	<u>Release</u> <u>2</u>	<u>Thread Number, Name, Intent Statement</u>
T	T	1.2.2 A Posture/Concentrate Forces (In-Place Forces). This thread develops the functionality associated with in-place force ground movement operations. Command and control functionality coordinates and moves land forces and means into locations and formations that enable the conduct of major operations. Forces move along predetermined routes in order to provide the mechanism to test sensor operations. In later threads, forces will have increased movement capabilities and will be linked to dynamic decision-making for route selection.
T	T	1.2.2 B Posture/Concentrate Forces (Deploying Forces). This thread develops the functionality to assemble designated land forces in areas that best dispose them in time and place to gain operational advantage and to accomplish the mission. Land forces will respond to fragmentary orders (FRAGOs) for movement, performing route checks point and inputting status reports. The ability to change routes, formations, and postures dynamically in response to changes in enemy activity and higher headquarters directives will be developed.
O	T	4.3.0 Provide Operational Service Support. This thread represents the functionality associated with providing maintenance and health services support to the operation. This functionality addresses the ability to sustain unit combat capability in the operational area.
O	T	4.4.4 Restore Unit Combat Capability. This thread provides the functionality to represent the restoration of attrited units in the theater of operations to a desired level of effectiveness. Functionality includes the command and control representations to determine that a unit is to be restored and to perform that restoration based upon mission requirements. The thread provides the representation of the application of theater resources to restore unit combat capability in the operational area.
T	T	4.5.1 Distribute Support to Sea-Based Forces. This thread provides the functionality to represent the distribution of sustainment assets, including personnel, equipment, ammunition, fuel and general supplies to theater sea-based forces from either land-based or sea-based logistics sites.
T	T	4.5.2 Determine Intratheater Movement Requirements. This thread develops the functionality associated with identifying requirements for theater transportation assets to move units and sustainment assets (personnel, equipment, ammunition, fuel & general supplies) within the theater of operations.
	O	6.2.6 A Provide Support to Noncombatants. This thread provides the functionality to represent the impact on the overall combat operation of the need to provide logistics support to a noncombatant population within the area of operations. The thread develops the functionality to represent the effects of the command and control, sustainment, and intra-theater transportation of noncombatants.
	O	6.5.5 Provide Host Nation Support. This thread provides the functionality to simulate the command and control and the employment of host nation support forces and assets. The thread develops the functionality to employ available host nation support forces in operations where they augment or are employed in place of friendly forces. The thread enables the modeling of the effect of the availability of these forces on the ability of friendly forces to perform security and logistics operations.

c. Perception Module

<u>Release 1</u>	<u>Release 2</u>	<u>Thread Number, Name, Intent Statement</u>
T	T	2.1.3 Prepare a Collection Plan. This thread develops the functionality to enable a command and control headquarters to determine which targets should be sensed, to sort the targets by their priority, and to determine which sensors/resources to employ to sense each target. The thread provides the functionality needed to permit a command and control headquarters to prepare an intelligence collection plan based upon its perception.
T	T	2.2.1 A Collect Information and Determine Enemy Courses of Action (COA). This thread provides the functionality to permit a command and control headquarters to receive sensor reports, conduct fusion of intelligence information derived from the sensor reports, and to add, delete, or update information contained in the command and control headquarters' perception. The thread also provides the functionality for the command and control headquarters to perform an assessment of its perception to determine the likely enemy Courses of Action (COA).
T	T	2.2.1 B Conduct Sensor Operations (Initial). This thread develops the functionality necessary for a command and control headquarters to employ sensors, to perform searches, to sense targets, and to generate and transmit sensor reports to the owning command and control headquarters and to other command and control headquarters. Functionality in this thread will be extended in thread 2.2.1 C.
T	T	2.2.1 C Conduct Sensor Operations (Additional). This thread develops the functionality necessary for a command and control headquarters to employ sensors, to perform searches, to sense targets, and to generate and transmit sensor reports to the owning command and control headquarters and to other command and control headquarters. Functionality in this thread extends functionality developed in thread 2.2.1 B.
T	T	2.5.1 Produce and Provide Intelligence Products. This thread develops the functionality for a command and control headquarters to receive and respond to intelligence requirements, to perform integration of intelligence materials, to format intelligence reports, and to disseminate intelligence information to higher and lower command and control headquarters to enable updates to their respective perceptions or SITMAPs.
T	T	3.1.5 A Publish ATO (for Collection Operations). This thread develops the functionality to enable a command and control headquarters to take information such as the campaign plan objectives and guidance, the collection plan, the command target list, and resource availability reports to create an integrated and deconflicted tasking order that directs subordinate organizations to employ assets to perform missions. The functionality in this thread develops the basic structures to build all tasking orders. This thread focuses on functionality associated with building the tasking orders for collection operations.

<u>Release</u> <u>1</u>	<u>Release</u> <u>2</u>	<u>Thread Number, Name, Intent Statement</u>
T	T	5.1.1 Communicate Information. This thread develops the functionality to represent the logical network that supports command and control and other communication. The thread provides an architecture to permit simulated organizations to communicate command and control and other information. The developed functionality will permit a simulated organization to manage its communications resources. The representation allows the modeling of internal effects of the communication system and of external effects on the communications system.
T	T	5.1.2 A Maintain and Enhance Communications. This thread develops the functionality to allow simulated organizations and entities to send and receive messages. Simulated organizations or entities monitor the status of their communications system. The functionality provides organizations with an ability to address security requirements. The functionality allows simulated organizations to intercept communications from enemy organizations or to prevent communications between enemy organizations.
T	T	5.2.0 A Assess Operational Level Situation (Initial). This thread develops the functionality to enable a command and control headquarters to assess the current situation. Based upon its simulated assessment of the current situation, the modeled headquarters is able to decide if the current situation is on-plan or off-plan. If the headquarters decides the current situation is off-plan, it may decide to initiate corrective actions in the form of new directives and orders to other command and control headquarters or operational forces. The functionality developed in this thread is extended in thread 5.2.0 B.
T	T	5.2.0 B Assess Operational Level Situation (Additional). This thread develops the functionality to enable a command and control headquarters to assess the current situation. Based upon its simulated assessment of the current situation, the modeled headquarters is able to decide if the current situation is on-plan or off-plan. If the headquarters decides the current situation is off-plan, it may decide to initiate corrective actions in the form of new directives and orders to other command and control headquarters or operational forces. This thread extends functionality developed in thread 5.2.0 A.
	O	2.2.2 A Support Surveillance Requirements. This thread develops the functionality to receive new or reprioritized collection requirements and to identify and redirect available reconnaissance and surveillance assets. This thread provides a command and control headquarters with the functionality to manage its reconnaissance and surveillance assets on an as required or on a directed basis.

d. Operations Module

<u>Release</u> <u>1</u>	<u>Release</u> <u>2</u>	<u>Thread Number, Name, Intent Statement</u>
T	T	1.2.4.3 A Conduct Forcible Entry (Initial). This thread develops the functionality to simulate forcible entry operations from the land or sea to the objective. A senior command and control element is established and a subordinate element is tasked with conducting a forcible entry operation using land, sea, or air assets for movement to the Area of Operations. The functionality developed in this thread is extended in 1.2.4.3 B.

<u>Release</u> <u>1</u>	<u>Release</u> <u>2</u>	<u>Thread Number, Name, Intent Statement</u>
T	T	1.2.4.3 B Conduct Forcible Entry (Additional). This thread develops the functionality to simulate forcible entry operations from the land or sea to the objective. A senior command and control element is established and a subordinate element is tasked with conducting a forcible entry operation using land, sea or air assets for movement to the area of operations.
O	T	1.2.4.5 A Conduct Raid (Amphibious Operations). This thread develops the functionality to simulate an amphibious raid by an Amphibious Force from ship to objective and subsequent withdrawal.
O	T	1.2.4.5 B Conduct Raid (Land-Based Operations). This thread develops the functionality to simulate raid by land forces to the objective and subsequent withdrawal.
T	T	1.2.5 A Conduct Offensive Land Operations (Initial). This thread develops the initial capability for land-based forces to perform offensive maneuver operations. The functionality to simulate the range of ground maneuver operations will be developed in this thread and the subsequent thread, thread 1.2.5 B. Ground-on-ground adjudication is developed in thread 1.2.6 A.
T	T	1.2.5 B Conduct Offensive Land Operations (Additional). This thread develops the additional capability for land-based forces to perform offensive maneuver operations. The functionality to simulate the range of ground maneuver operations will be developed in this thread and the previous thread, thread 1.2.5 A. Note: The functionality to adjudicate the ground-on-ground battle is developed in thread 1.2.6 A.
T	T	1.2.6 A Conduct Defensive Land Operations. This thread develops the functionality to simulate the command and control for the employment of land forces in defensive operations. The thread provides the functionality for land-based forces to detect each other, to perform command and control decision making, to move to contact, and to engage in ground-on-ground combat. The functionality to adjudicate the ground-on-ground battle is developed. The functionality for command and control and employment of land reserve forces is also developed.
T	T	1.2.7 A Conduct Land Retrograde Operations. This thread develops the functionality for the command and control of land forces performing retrograde operations. The thread provides the functionality to dynamically employ land reserves, to identify withdrawal routes, and to coordinate and execute the movement of land forces rearward.
O	T	1.3.0 Provide Operational Mobility/Counter Mobility (Land). This thread develops the functionality to perform mobility and counter-mobility operations. It provides the command and control and employment functionality to conduct, these operations. Based upon the presence and effectiveness of specific types of engineer units, land-based forces are able to employ and overcome obstacles.
O	T	1.3.1 A Conduct Countermine Operations (Maritime) (Initial). This thread develops the initial functionality to represent the conduct of mine clearance operations by maritime forces. The functionality to command and control and employ countermining warfare forces in the maritime area of operations is developed. This thread includes functionality for both SLOC and littoral countermining operations. The functionality developed in this thread will be extended in 1.3.1 B.
O	T	1.3.1 B Conduct Countermine Operations (Maritime) (Additional). This

<u>Release</u> 1	<u>Release</u> 2	<u>Thread Number, Name, Intent Statement</u>
		thread develops the additional functionality to represent the conduct of countermine operations by maritime forces. The functionality to command and control and employ countermining forces in the maritime area of operations is developed. This thread includes functionality for other SLOC and littoral countermining operations.
O	T	1.4.3 Conduct a Naval Blockade. This thread provides the functionality to portray the establishment and conduct of a naval blockade to delay, channel, or intercept the seagoing movement of supplies and materiel into the operational area. The thread development includes the functionality to deploy and employ mines using appropriate delivery systems.
T	T	1.5.2 A Conduct Surface Warfare (SUW). This thread develops the functionality to simulate operations against maritime surface targets in the Joint Operations Area (JOA) and the communications zone. This thread includes the functionality for operations conducted by surface and subsurface platforms and supporting systems. This thread also develops the adjudication mechanisms to resolve simulated SUW engagements. Air operations against surface targets are addressed in thread 3.2.1 B.
T	T	1.5.2 B Conduct Under Sea Warfare (USW). This thread develops the functionality to simulate operations against submarines and other maritime subsurface targets in the Joint Operations Area (JOA) and the communications zone. This thread includes the functionality for operations conducted by surface and subsurface platforms and supporting systems. This thread also develops the adjudication mechanisms to resolve simulated USW engagements. Air operations against subsurface targets are addressed in thread 3.2.1B.
T	T	2.4.2.4 Provide Target Intelligence. This thread develops the functionality for a command and control headquarters to develop a prioritized list of targets. The targets are derived from the command and control headquarters' perception as contained in the SITMAP. This functionality supports the targeting process by providing the prioritized list of targets in response to requests from the command and control headquarters' targeting control board.
T	T	3.1.3 Develop Operational Targets. This thread develops the functionality to update the command target list. Command and control headquarters functionality is developed that takes the collection plan, results of battle damage assessment, and target nominations from responsible command and control headquarters to update the command target list. The functionality simulates the actions of the command target collection board.
T	T	3.1.5 B Publish ATO (for Defensive Operations). This thread develops the functionality to enable a command and control headquarters to take information such as the campaign plan objectives and guidance, the collection plan, the command target list, and resource availability reports to create an integrated and deconflicted tasking order that directs subordinate organizations to employ assets to perform missions. This thread focuses on functionality associated with building the tasking orders for defensive operations.

<u>Release</u> <u>1</u>	<u>Release</u> <u>2</u>	<u>Thread Number, Name, Intent Statement</u>
T	T	3.1.5 C Publish ATO (for Offensive Operations). This thread develops the functionality to enable a command and control headquarters to take information such as the campaign plan objectives and guidance, the collection plan, the command target list, and resource availability reports to create an integrated and deconflicted tasking order that directs subordinate organizations to employ assets to perform missions. This thread focuses on functionality associated with building the tasking orders for offensive operations.
T	T	3.2.1 A Attack/Interdict Operational Targets (by Air) (Initial). This thread provides the functionality to simulate an air attack on operational targets. The purpose of this thread is to develop an initial air attack/interdiction capability. The functionality developed in this thread will be extended in 3.2.1 B.
T	T	3.2.1 B Attack/Interdict Operational Targets (by Air) (Additional). This thread provides the functionality to represent a flight group of several mission elements including strike aircraft and escort aircraft in the conduct of attack/ interdiction missions. Attacking flight group will simulate transit from origin to target and return.
T	T	3.2.1 C Attack/Interdict Operational Targets Surface-to-Surface (SSM). This thread develops the functionality that represents the command and control functions for the conduct of surface-to-surface missile engagements using conventional munitions against land-based and sea-based targets. These missions may be tasked through a scheduled tasking order or through other command and control mechanisms.
O	T	3.2.2.2 Electronic Attack. This thread represents the effects of electronic attack on C4ISR functionality. The thread functionality includes the representation of the mitigation effects of C4ISR in reducing the effectiveness of electronic attack operations. The thread also includes the functionality to enable a command and control headquarters to respond to electronic attack.
T	T	3.2.4 Suppress Enemy Air Defenses. This thread implements the functionality for a command and control headquarters to plan and conduct suppression of enemy air defense operations. The thread develops the command and control and adjudication functionality to represent penetration and suppression of air defenses including electronic warfare and electronic counter measures. Functionality includes that needed to represent air command and control headquarters coordination with land and sea command and control headquarters to employ field artillery and naval fire assets to supplement air suppression of enemy air defenses.
T	T	3.2.6 A Provide Firepower in Support of Land Maneuver. This thread develops the functionality to represent the command and control and employment of land-based and sea-based indirect fire and counter-fire systems in support of land and naval expeditionary operations. Support land operational maneuver and operational maneuver from the sea by engaging operational land targets with available operational indirect firepower includes counter-fire measures. The thread also develops the adjudication mechanisms to support these representations.

<u>Release</u> <u>1</u>	<u>Release</u> <u>2</u>	<u>Thread Number, Name, Intent Statement</u>
T	T	3.2.6 B Provide Close Air Support. This thread provides the functionality to represent close air support aircraft, including fixed-wing and rotary-wing, in the engagement of ground units in contact with opposing ground units. The thread develops the command and control functionality that employs close air support systems. Development also includes the adjudication mechanisms for the air attack of ground units.
O	T	3.3.1 S Effects of Attacks on Strategic Targets. This thread develops the functionality to represent the effects of attacks on strategic targets. This thread adds to the weapon and target adjudication process the additional effects caused by the attacks on strategic targets.
T	T	5.3.0 Prepare Directives. This thread develops the functionality to create and direct changes to the operational plan. It is based upon the simulated assessment of the current situation. This thread extends functionality developed in thread 5.2.0 B.
T	T	5.5.1 A Exercise Theater Level Command and Control. This thread provides the initial life-cycle representation of theater level command and control functionality required to dynamically create the command and control structure, to represent the build-up of military forces as they deploy into the theater, to move to tactical assembly areas or other final destinations, and to integrate into the overall command and control structure. Functionality developed in this thread will be extended as follow-on operational phases are implemented for simulation.
T	T	5.5.1 B Exercise Land Command and Control. This thread provides the initial life-cycle representation of component level and below command and control functionality required to dynamically create the land command and control structure, to represent the build-up of military forces as they deploy into the theater, to move to tactical assembly areas or other final destinations, and to integrate into the land command and control structure. Functionality developed in this thread will be extended as follow-on operational phases are implemented for simulation. The command and control functionality includes service unique features as well as enabling a branches and sequels approach to planning in accordance with service doctrine.
T	T	5.5.1 C Exercise Maritime Command and Control. This thread provides the initial life-cycle representation of component level and below command and control functionality required to dynamically create the maritime command and control structure, to represent the build-up of military forces as they deploy into the theater, to move to tactical assembly areas or other final destinations, and to integrate into the maritime command and control structure. Functionality developed in this thread will be extended as follow-on operational phases are implemented for simulation. The command and control functionality includes service unique features as well as enabling a branches and sequels approach to planning in accordance with service doctrine.

<u>Release</u> <u>1</u>	<u>Release</u> <u>2</u>	<u>Thread Number, Name, Intent Statement</u>
T	T	5.5.1 D Exercise Air Command and Control. This thread provides the initial life-cycle representation of component level and below command and control functionality required to dynamically create the air command and control structure, to represent the build-up of military forces as they deploy into the theater, to move to tactical assembly areas or other final destinations, and to integrate into the air command and control structure. Functionality developed in this thread will be extended as follow-on operational phases are implemented for simulation. The command and control functionality includes service unique features as well as enabling a branches and sequels approach to planning in accordance with service doctrine.
O	T	6.1.2 Provide Integrated Aerospace Defense. This thread develops the functionality to simulate the integration of air-to-air and surface-to-air defense forces. The thread develops the functionality to simulate the coordinated employment of sea-based and land-based surface-to-air defenses and the deconfliction of these defenses with airborne air defenses.
T	T	6.1.4 A Counter Air Attack (Sea-based Air-to-Air). This thread provides the functionality to represent the command and control of sea-based air defense forces and the associated employment of air-to-air assets in a sea-based operational environment with opposing sea-based or land-based air forces. This thread also develops the associated adjudication mechanisms to determine the outcome of simulated air-to-air engagements. This thread also provides the functionality to simulate sea-based defensive counter-air operations directed by airborne warning and control aircraft.
T	T	6.1.4 B Counter Air Attack (Land-based Air-to-Air). This thread provides the functionality to represent the command and control of land-based air defense forces and the associated employment of air-to-air assets in a land-based operational environment with opposing sea-based or land-based air forces. This thread also provides the functionality to simulate land-based defensive counter-air operations directed by airborne warning and control aircraft.
T	T	6.1.4 C Counter Air Attack (Surface-to-Air Defense). This thread develops the functionality to simulate the response to multiple air-to-surface attacks by opposing aircraft. This thread provides the functionality to simulate the command and control and the employment of surface-to-air systems to defend against large-scale attacks on operational forces and targets. This thread also develops the adjudication mechanisms to resolve simulated surface-to-air engagements.
T	T	6.1.5 A Conduct Maritime Theater Ballistic Missile Defense. This thread provides the functionality to simulate maritime defenses against ballistic missile attacks in the operational area. The thread develops the functionality to simulate space-based detection and queueing, maritime command and control, and employment of sea-based systems to target and engage launches of ballistic missiles. Functionality developed in this thread will be combined with functionality developed in the subsequent thread, thread 6.1.5 B to enable the simulation of integrated theater missile defense.

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T	T	6.1.5 B Conduct Integrated Joint Theater Ballistic Missile Defense. This thread provides the functionality to simulate land-based and air-based defenses against ballistic missile attacks in the operational area. The thread develops the functionality to simulate detection and queuing, integrated command and control, and employment of integrated theater missile defense systems to target and engage launches of ballistic missiles. This thread builds upon thread 6.1.5 A to enable the simulation of the integration of sea-based, air-based, and land-based systems.
O	T	6.2.6 B (-) Conduct Noncombatant Evacuation Operations (NEO). This thread is a simplified representation of thread 6.2.6 B. The intent is to identify the effects of NEO operations on campaign-level operations by limiting the availability of NEO operational forces to support other theater operations.
O	T	6.2.8 D Chemical Defensive Operations. This thread develops the functionality to model the prompt effects of chemical attacks and the effects of the employment of chemical defensive measures. The thread develops the adjudication mechanisms for chemical warfare. Functionality includes modeling the effects of early warning systems, the effects of donning MOPP gear on units, the effects of decontamination procedures, and the effects of the continued presence of contaminants in the battlespace.
	O	1.2.4.2 Conduct Demonstration. This thread develops the functionality for theater forces to conduct user specified demonstrations to deceive enemy forces. The functionality developed in this thread includes that needed to represent the forces and resources required to perform demonstration operations and the effect of demonstration operations on the enemy.
	O	3.1.4 Prioritize High Priority Target (HPT) and High Value Target (HVT) (Dynamic Retasking of ATO Assets). This thread provides the functionality for a command and control headquarters to respond to time-sensitive high-value or high-priority targets by dynamically tasking or retasking scheduled strike assets. The functionality enables the command and control headquarters to pair already scheduled strike assets with a target and to issue new orders or change existing orders to have time-sensitive high-value and high-priority targets struck.
	O	3.2.2 CounterSpace Operations. This thread develops the functionality to simulate warfare against space-based systems. The functionality enables a command and control headquarters to employ multinational means to impair, disrupt, and delay enemy forces and enemy force activities to achieve strategic objectives. The thread develops the functionality to represent offensive and defensive operations to maintain space superiority.
	O	3.2.5.3 Sea-Based Direct Action/Interdiction. This thread develops the functionality associated with the command and control of a sea-based unit's direct action/interdiction capability. The thread develops the functionality for command and control of sea-based units that are inserted into an objective area, carry out a mission to sense (locate and identify) and destroy a target, and return.

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- O **5.1.2 B Reconstitute Destroyed Command and Control.** This thread develops the functionality that enables the representation of the degradation or destruction and subsequent restoration of a command and control headquarters. The functionality provides the ability to model command and control headquarters degradation and restoration of capability. The command and control headquarters may operate in a degraded state or the command and control functionality may pass to another command and control headquarters temporarily or permanently.
- O **5.6.0 Employ Information Warfare.** The thread develops functionality to enable simulated command and control headquarters and other entities to undertake information warfare operations. The functionality in this thread enables both offensive information warfare operations and defensive information operations. The effects of information warfare will be modeled through impacts on the communications nodes associated with command and control headquarters and other entities.
- O **5.7.6 Coordinate Coalition Warfare.** This thread develops the functionality associated with support to coalition command and control headquarters to integrate coalition operations with a larger force. The thread develops the functionality to represent the command and control interaction between allied forces headquarters and US forces headquarters enabled by the simulated employment of liaison teams.
- O **6.1.3 Provide Airspace Control.** This thread provides the functionality to represent the effects of various means to de-conflict air defenses, including the simulation of direct controls that lessen mutual interference between air defense operations and other operations, and the simulation of the identification of fixed-wing and rotary-wing aircraft based upon the employment of simulated active measures in the event positive control measures fail or are unavailable.
- O **6.1.4 D Counter Air Attack (SHORAD).** This thread provides the functionality necessary to perform surface-based Short Range Air Defense (SHORAD) operations in support of the maneuver combats units within the Joint Operations Area (JOA). The thread develops the functionality for the employment and command and control of ground units separating their internal unit SHORAD into a force organized to provide screening against low altitude air threats.
- O **6.2.5 Provide Positive Identification of Forces.** This thread provides the functionality to simulate the effects of having procedures and equipment that support the identification of friendly, enemy, and neutral forces. The thread extends the functionality developed in other threads to extend the representation of available means to prevent fratricide and to inject the effects of appropriate operational restrictions on weapons employment.
- O **6.2.6 B Conduct Noncombatant Evacuation Operations (NEO).** This thread develops the functionality to decide to conduct a NEO and the campaign-level effects of employing operational forces to support emerging evacuations of non-combatants.
- O **6.2.8 A Nuclear, Biological, and Chemical (NBC) Command and Control Operations.** This thread develops the functionality to simulate command and control in an NBC environment. The thread provides the mechanisms to determine when units should change MOPP levels and to model the effects of NBC defensive operations.

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- O **6.2.8 B Nuclear and Biological Defensive Operations.** This thread develops the functionality to model the effects of the employment of nuclear and biological defensive measures. The thread develops the adjudication mechanisms for the nuclear and biological warfare effects developed in thread 6.2.8 C. Functionality includes modeling the effects of early warning systems, the effects of donning MOPP gear on units, the effects of decontamination procedures and the effects of the continued presence of contaminants in the battlespace.
- O **6.2.8 C Nuclear, Biological and Chemical (NBC) Offensive Operations.** This thread develops the functionality to simulate the command and control and employment of NBC weapons. Functionality includes modeling the command and control decision making for the release and employment of NBC weapons. The thread also models prompt nuclear weapon effects including blast, thermal, and radiation; nuclear fallout; and the downwind transport of biological and chemical agents.
- O **6.2.9 Conduct Personnel Recovery.** This thread develops the functionality to represent the effects of extraction operation activities associated with recovering personnel including the command and control impacts.
- O **6.3.2 Employ Restrictive Emission Control (EMCON) Conditions.** This thread develops the functionality to represent the theater level imposition and effects of various emission control conditions on C3, ISR, and tactical sensor capabilities, and in the air, surface, and undersea environment.
- O **6.4.2 Conduct Deception Operations.** This thread develops the functionality for theater forces to conduct user specified deception operations to deceive enemy forces. The functionality developed in this thread includes that needed to represent the forces and resources required to perform deception operations and the effect of deception operations on the enemy.
- O **6.5.2 Conduct Rear Area Security Operations.** This thread develops the functionality to simulate the command and control needed to plan and execute rear area security operations. The thread develops the functionality to simulate the employment of friendly and host nation resources to conduct rear area security operations. The thread simulates the employment of forces available to rear area organizations to secure installations and organizations and to counteract rear area attacks.