JTLS

Version Description Document

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DEPARTMENT OF DEFENSE
DEPUTY DIRECTOR J7
JOINT AND COALITION WARFIGHTING
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JOINT THEATER LEVEL SIMULATION
(JTLS 4.0.1.0)

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ABSTRACT

The Joint Theater Level Simulation (JTLS) system is an interactive, multi-sided gaming system that models combined joint and coalition resource air, land, naval, and Non-Govenmental Organization (NGO) environments. This *JTLS Version Description Document (VDD)* describes specific features of the Version 4.0.1.0 delivery of the configuration-managed JTLS software suite.

JTLS 4.0.1.0 is a Maintenance release of the JTLS 4.0 series that includes a newly developed SBDKOR40 Standard Database, as well as major model functionality changes implemented as Engineering Change Proposals (ECPs), which are summarized in Chapter 2. Code modifications that represent corrections to known Software Trouble Reports (STRs) are described in Chapter 3. Remaining and outstanding STRs are described in Chapter 4.

This publication is updated and revised as required for each Major or Maintenance version release of JTLS. Corrections, additions, or recommendations for improvement must reference specific sections, pages, and paragraphs with appropriate justification and be forwarded to:

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1.0 INTRODUCTION

1.1 SCOPE

This *JTLS Version Description Document* (VDD) describes Version 4.0.1.0 of the configuration managed Joint Theater Level Simulation (JTLS) software suite. JTLS 4.0.1.0 is a Maintenance delivery for the JTLS 4.0 series of releases. JTLS 4.0.1.0 includes the entire JTLS suite of software and the SDBKOR40 Standard Database that supports a realistic scenario based on the current Korea Peninsula theater of operations. Database modifications that were accomplished to upgrade the previous JTLS Standard Database to this current version are summarized in this chapter, as well as APPENDIX B. Detailed descriptions of Engineering Change Proposals (ECPs) implemented for this release are provided in Chapter 2.0.

JTLS 4.0.1.0 executes on the Red Hat Enterprise Linux Version 5 64-bit operating system **Support for executing the model or its support programs within any 32-bit operating system environment has been discontinued.** The WHIP user workstation interface can be executed from any Java-compatible Web browser available on any operating system.

1.2 INVENTORY OF MATERIALS

This section lists documents and software that are relevant to JTLS. JTLS documents can be obtained by contacting the ROLANDS & ASSOCIATES Corporation JTLS Development Team Leader at the address provided in the Abstract of this document. DoD Military Standards can be accessed through the appropriate military channels.

1.2.1 Obsolete/Outdated Documents

Development of the JTLS Air Tasking Order Generator (ATOG) has been suspended. The *JTLS ATOG User Guide* (JTLS Document 02) has been removed from the JTLS documentation suite for this release.

1.2.2 Unchanged Documents

The model enhancements implemented for JTLS 4.0.0.0 are incorporated within the documentation provided for this release:

- *JTLS Controller Guide* (JTLS Document 04, Version 4.0.0.0)
- *JTLS Director Guide* (JTLS Document 07, Version 4.0.0.0)
- *JTLS Executive Overview* (JTLS Document 08, Version 4.0.0.0)
- *JTLS WHIP Training Manual* (JTLS Document 10, Version 4.0.0.0)
- *JTLS PPS User Guide* (JTLS Document 13, Version 4.0.0.0)

- *JTLS Standard Database Description* (JTLS Document 14, Version 4.0.0.0)
- *JTLS Software Maintenance Manual* (JTLS Document 15, Version 4.0.0.0)
- *JTLS Design Plan* (JTLS Document 18, Version 4.0.0.0)
- *JTLS Entity Level Server User Guide* (JTLS Document 19, Version 4.0.0.0)
- *JTLS Federation User Guide* (JTLS Document 20, Version 4.0.0.0)

1.2.3 Updated Documents

- *JTLS Analyst Guide* (JTLS Document 01, Version 4.0.1.0)
- *JTLS ATOT User Guide* (JTLS Document 03, Version 4.0.1.0)
- *JTLS Data Requirements Manual* (JTLS Document 05, Version 4.0.1.0)
- *JTLS DDS User Guide* (JTLS Document 06, Version 4.0.1.0)
- *JTLS Installation Manual* (JTLS Document 09, Version 4.0.1.0)
- *JTLS Player Guide* (JTLS Document 12, Version 4.0.1.0)
- *JTLS Technical Coordinator Guide* (JTLS Document 16, Version 4.0.1.0)
- *JTLS Version Description Document* (JTLS Document 17, Version 4.0.1.0)
- *JTLS C4I Interface Manual* (JTLS Document 21, Version 4.0.1.0)

1.2.4 New Documents

No new volumes are delivered with the JTLS 4.0.1.0 documentation suite.

1.2.5 Delivered Software Components

JTLS 4.0.1.0 may be delivered either on a CD or as a set of compressed tar files to be downloaded. Either method includes the complete suite of software executable code and command procedures. These software components are included with this release:

- Combat Events Program (CEP)
- Scenario Initialization Program (SIP)
- Interface Configuration Program (ICP)
- Reformat Spreadsheet Program (RSP)

- Database Development System (DDS)
- Terrain Modification Utility (TMU)
- Java Symbols Application (JSYMS)
- Lanchester Development Tool (LDT)
- ATO Generator Program (ATOG)
- ATO Translator Program (ATOT)
- ATO Retrieval Program (ATORET)
- .Convert Location Program (XCONVERT)
- Count Critical Order Program (CCO)
- Graphical Database Program (GDP)
- JTLS HLA Interface Program (JHIP)
- After Action Review Client (AARC)
- Scenario Data Client (SDC)
- Order Entry Client (OEC)
- Order Verification Tool (OVT)
- JTLS Object Distribution Authority (JODA)
- Web Services Manager (WSM)
- Web-Hosted Interface Program (WHIP) and its component programs:

    Apache Server (APACHE)

    JTLS XML Serial Repository (JXSR)

    Order Management Authority (OMA)

    Synchronized Authentication and Preferences Service (SYNAPSE)

    XML Message Service (XMS)

    Total Recall Interactive Playback Program (TRIPP)

    Air Tasking Order Viewer (ATOV)

- Entity Level Server (ELS)
- JTLS Operational Interface (JOI)
- KML Operational Interface (KOI)
- TBMCS/ICC Interface Program (JTOI)
- Single Mobility System (SMS) Interface Program (SOI)
- JTLS Interface Network Navigator (JINN)
- JTLS Order of Battle Editor (JOBE)
- Database Configuration Program (DCP)
- DDS User Interface (DDS)

Instructions for installing JTLS 4.0.1.0 are provided in the *JTLS Installation Manual*. Installing a previous version of JTLS prior to installing JTLS 4.0.1.0 is not necessary. No other upgrade beyond installation of the compressed tar files (or CD) is required. The software provided with this delivery is a complete release that includes all files and code required to execute JTLS.

1.2.6 Released Databases

This release includes these sample unclassified databases:

- The scenario developed as the Korea Standard Database and named SDBKOR40 is a large-scale, seven-sided scenario database reflecting the approximate starting positions of units involved in the Korea Peninsula theater of operations. This example scenario was developed using unclassified data sources and is consequently not completely accurate. Discrepancies among actual units and their locations are not detrimental to the intended purpose of this database, which is to provide a recognizable and realistic scenario that demonstrates the simulation capabilities and supports JTLS training.
- The scenario DEMSDBKOR40 is a reduced version of SDBKOR40 that requires fewer resources, loads faster, and is intended for use in demonstration, training, and testing environments that do not require the complete Standard Database.
- The scenario blank40 is the SDBKOR40 database with all force structure data removed, which can be used as a framework for building your customized database.

1.3 INTERFACE COMPATIBILITY

1.3.1 Support Software

JTLS 4.0.1.0 requires the following versions of support software, including operating systems, compilers, scripting utilities, database tools, transfer protocols, and display managers.

- Operating system for the model: Red Hat Linux Enterprise Edition Version 5 (ES), 64-bit architecture.

  Some JTLS components will not execute under Red Hat Linux Version 4.0. Therefore, model support for this OS version has been discontinued. However, Red Hat Linux 4.0 may be used on client workstations to execute the WHIP.

  Security Enabled (SE) Linux must not be enabled on systems used to execute JTLS or its components. Tests reveal that SE Linux-enabled systems cause frequent and random JXSR crashes and errors. Use of SE Linux to support JTLS is currently not authorized.

- Operating system for client workstations (one of the following):

  Red Hat Linux Enterprise Edition Version 3

  Red Hat Linux Enterprise Edition Version 4

  Red Hat Linux Enterprise Edition Version 5

  CentOS Linux Version 4 or 5

  Windows 2000, XP Professional, Vista, or Windows 7 can be used only if the workstation is an external HTTP client of the simulation network.

- Java Version 1.6.0 is required (Build 25 is recommended) for all platforms and must be used to support all workstations.

- JTLS database tools require use of a certified Oracle database server and the full Oracle Client installation for runtime requirements. Refer to Section 1.6.2 of this chapter for additional installation details.

- Windows software, X11R5 server, Motif 1.2 Library, Motif Window Manager: These items are included as part of Red Hat Linux ES 5.0.

- TCP/IP is required for inter-process communication between the JODA data server and all user interface programs. The version of TCP/IP included with Red Hat Linux ES 5.0 is sufficient.

- The Perl script language is used by the JTLS system and game setup scripts. The version of Perl included with Red Hat Linux ES 5.0 is sufficient. The Perl program is typically located in the /usr/bin directory. If Perl is installed in a another location, a link should be created from the /usr/bin directory to this program.

- KDE Desktop support has been added to JTLS 4.0.1.0. Support of the GNOME desktop is continuing, and use of the KDE environment is optional. Details regarding the installation and use of KDE are provided in Section 4.4.3.2 of the *JTLS Installation Manual*.

- SIMSCRIPT II.5 (SIMSCRIPT to C) translator/compiler: SIMSCRIPT is required for recompiling JTLS code. It is not necessary to have a SIMSCRIPT compiler to execute JTLS, because all JTLS software executables are statically linked with the SIMSCRIPT libraries. The compiler is needed only if you are a U.S. Government organization that can obtain source code and plan to re-compile JTLS SIMSCRIPT code. To obtain a SIMSCRIPT compiler, contact CACI Inc. The following SIMSCRIPT II.5 versions are recommended for 64-bit Red Hat Linux Version 3.5

- ANSI C Compiler: It is not necessary to use a C compiler to execute JTLS. This compiler is used only by U.S. Government organizations that can obtain source code and intend to re-compile any of the JTLS component programs. The C Compiler version delivered with Red Hat Linux ES 5.0 is sufficient.

- C++ Compiler: It is not necessary to use a C++ compiler to execute JTLS. This compiler is used only by U.S. Government organizations that can obtain source code and intend to re-compile any of the JTLS HLA component programs. The C++ Compiler version delivered with Red Hat Linux ES 5.0 is sufficient

1.3.2 HLA Compliance

The JTLS 4.0.1.0 release is fully High Level Architecture (HLA) compliant, and includes all the programs required to run JTLS in an HLA mode on any operating system listed in Section 1.3.1.

The HLA RTI (Run Time Infrastructure) executive program (rtiexec) is recommended for use with this release is RTI-NG-Pro-v4.0 or higher. However, this program is not included in the JTLS 4.0.1.0 delivery. Users may obtain a full installation package of this RTI software from the vendor, Raytheon Virtual Technology Corporation, by contacting their Web site at http://www.virtc.com. For information about executing the HLA RTI Executive and other HLA-related software, refer to the appropriate HLA documentation and user guides.

The JTLS HLA Interface Program (JHIP) has been extensively tested with the Joint Conflict And Tactical Simulation (JCATS) Version 9.0. The Joint Multi-Resolution Model (JMRM) federation can

be executed in conjunction with this JTLS 4.0.1.0 delivery. JCATS Version 9.0.2 and JCATS JMRM Bridge are required.

1.3.3 KML Operational Interface (KOI)

The Keyhole Markup Language (KML) Operational Interface (KOI) server utility enables the model to feed operational simulation data to Google Earth TM,. The display capabilities and data transfer features of this terrain viewer are sufficiently robust to be used as a base-level operational interface. Operational Players who may be restricted from using the COP, C2PC, or other C4I systems may be able to install and use Google Earth and configure the KOI to provide a capability that resembles C4I for observing perception Force Side data.

Chapter 3 of the JTLS C4I Interface Manual describes requirements and procedures for using the KOI capabilities.

1.3.4 JTLS Air Tasking Order Translator (ATOT)

The ATOT executes in two modes:

- A file containing the translated orders is created and the Controller is responsible for submitting an appropriate READ ORDER FILE Order that submits these orders to the model.

- The ATOT connects to the Oracle-based Scenario Database Repository (SDR) and places the translated orders into the appropriate Order Entry Client (OEC) tables. The OEC is responsible for submitting the orders to the model.

The Simscript and Oracle library support required by both ATO-T modes are obtained separately. The Simscript support is currently provided with each JTLS release. The necessary Simscript libraries are released in the ~/bin_support directory for 64-bit Linux. The basic mode creates read.order files to be manually read into the CEP. To run the basic mode, users must obtain, install, and configure the most current Oracle Client. The advanced mode uses the OEC, which is managed with the ATOT forms. To run the advanced mode, users must have access to an Oracle server.

1.4 INSTALLATION CONSIDERATIONS

The procedures for installing JTLS 4.0.1.0 depend on the hardware configuration provided at the installation site. All installation issues are addressed in the *JTLS Installation Manual*.

1.5 DATABASE MODIFICATIONS

This release includes a completely new demonstration database, named SDBKOR40, that provides enhanced, realistic support of real-world operations. Significant database parameter changes were implemented in conjunction with the upgrade from JTLS Version 3.4.0.0 to Version 4.0.0.0. Refer to APPENDIX B.

1.5.1 Database Upgrade

Users who currently possess a JTLS scenario (ASCII file set) that is compatible with an previous version of JTLS can use this recommended modification procedure:

1. Provision a new Oracle account for the scenario.

2. Load the scenario ASCII files to the newly created Oracle account from within the new JTLS account.

This process creates the JTLS schema that matches the previous JTLS version. After all data are loaded to the database tables, the process modifies the schema to match the current JTLS version. For JTLS 4.0, this process supports JTLS 3.0 (or higher) series scenarios only. If your scenario version is older than 3.0, the scenario must be upgraded to Version 3.4 first, by using the JTLS 3.4 version upgrade process. Consult Section 1.5.2 of the *JTLS 3.4.0.0 Version Description Document* for details and procedures.

JTLS users must consider that the automatic modification program inserts default values to the new database fields. Also, a new JTLS version may use previously existing data fields in a different way. Consult the appropriate *JTLS Version Description Document* to identify data fields that must be updated. The Database Modify program is the first process to use to update your databases to the new JTLS version. Changing the values in new or changed data fields is equally important.

The JTLS scenario/database modification process requires 10.2.0.5.4 or higher full Oracle Client installation.

To upgrade your previously installed and modified JTLS 4.0.0.0 scenario for JTLS 4.0.1.0, you must unload and reload your scenario or execute the modify400to401.sql script located at $JTLSHOME/script/dds/version4.0/scripts/.

If you are upgrading to JTLS 4.0 from JTLS 3.4 or earlier, no action is required.

1.5.2 Standard Database Changes

Additional Standard Database changes that are applicable to JTLS 4.0.1.0 are described in APPENDIX B.

1.6 INSTALLATION

1.6.1 Installation Instructions

The *JTLS Installation Manual* included in the documents compressed tar file that is part of this JTLS delivery provides detailed instructions for installing a new version of JTLS.

1.6.2 Oracle Compatibility and Installation

A full Oracle Client installation (not Instant Client) that matches your database server version is currently a requirement for running JTLS applications. The Oracle Instant Client is not sufficient for JTLS applications because Oracle utilities, such as sqlldr, imp, exp, tnsping, etc., are missing. If you have applied a patchset to your database server, the same patchset should be applied to the Oracle Client installation. For the 64-bit version of JTLS, a 64-bit Oracle Client installation must be used. The JTLS scenario/database modification process also expects 10.2.0.5.4 or higher full Oracle Client installation. Some sites NFS mount their database server as Oracle Client; other sites prefer a full install of the Oracle Client to a different directory that mounts (simple NFS will suffice) to JTLS. Your system administrator can choose the appropriate installation. Assigning the full Oracle Client installation location (or mount point) as the ORACLE_HOME in the JTLS .cshrc file allows connecting to an Oracle database server (10.2.0.5.4 or higher - including 11g XE) running on any Oracle-certified database server platform.

The new DDS application utilizes the Oracle GlassFish J2EE server, which, like the JTLS WHIP Apache server, is delivered with JTLS and requires no separate installation.

Oracle Forms/Reports Developer 6i client/server runtime for DDS Forms and the optional iAS EE 10.1.2.0.2 full stack are no longer supported.

Refer to Chapter 5 of the *JTLS Installation Manual* for additional details pertaining to the Oracle installation.

2.0 ENGINEERING CHANGE PROPOSALS

This chapter summarizes model capabilities added to JTLS 4.0.1.0 as a result of implementing authorized Engineering Change Proposals (ECPs).

2.1 JTLS-2011-11013 Slow Flight Path Arc Data Translation

Summary of Model Change Request

All initialization data, including data that describe flight paths, must be read in prior to starting or restarting a game. Flight path data are comprised of a set of flight path nodes and a set of arcs; starting nodes, ending nodes, and other items describe each arc. The starting and ending nodes must be translated to proper node pointers to construct the flight path network. This resolution of node names to pointers required several minutes of processing for a flight path network that consisted of 1500 nodes and 2500 arcs. Time to initialize a medium-sized scenario was doubled.

Design Summary

A hash table was created to hold the flight path nodes. This table uses the standard CEP methodology of creating a hash index, which adds the numeric representations of the first two characters of the node name and multiplies the sum by the both the third and final characters' numeric representations. This value is then divided by the size of the hash table and the remainder is used as the hash index. This ties the name of the flight path node to a search position in a hash array. The array is reserved as 5 times the initial number of flight path nodes. Nodes are added to the hash array and removed from the array as they are created or destroyed. The same hash table changes were also implemented to support the SIP initialization data.

2.2 JTLS-2011-11026 Object Type/Side Filtering For ICC/TBMCS Updates (JTOI)

Summary of Model Change Request

The JTOI previously provided an option to turn ON/OFF updates by object types. With the new Civilian Air orders, all Neutral airbases were assigned ICAO codes and airbase records were replicated in the ICC. the same issues were observed for Neutral squadrons. Expanding the capability of filtering by object types with the owning Side was requested.

Design Summary

The filtering capability was expanded by adding the Side column for each object type. Operators can toggle appropriate entries to send (or not send) updates to ICC/TBMCS. If filtering is turned off for a selected object type/Force Side, the JTOI stops sending updates of the selected object types for the specified Side. The filter settings can also be saved into a filter file for future runs. This filtering capability is applicable for ICC and TBMCS updates when the JTOI is in running mode.

2.3 JTLS-2011-11027 DSA Collection Modes

Summary of Model Change Request

Intelligence Players use "collection decks" that are similar to JTLS Directed Search Areas. A common practice assigns specific sensor types to survey the areas of interest defined by the collection decks. The JTLS DSAs cannot be defined in such a manner. Modify JTLS to allow DSAs to be created with one or more sensor collection modes, as specified by the Players.

Design Summary

The processing of DSAs in the CEP was enhanced to utilize sensor collection modes as specified by the Players. A new attribute was added to the DSA entity to hold the assigned collection modes. The restriction that prevented national strategic assets from searching DSAs if their sensor collection mode was not IMAGERY was removed. The Manage DSA order was modified to designate one or more collection modes when a new DSA is created. The model was modified to only allow sensors (tactical or national assets) with one of the designated collection modes to search the DSA. If no modes are specified in the order, then any asset sensor is permitted to search the DSA, regardless of collection mode. For example, if an aircraft equipped with a SAR sensor is tasked to search a DSA with assigned collection modes of SAR and IR, an IIR report will be generated. However, a national asset equipped with an IMAGERY (electro-optical) sensor is not permitted to search the same DSA.

2.4 JTLS-2012-11063 New SVP DMPI Warnings

Summary of Model Change Request

Database preparers have occasionally linked DMPI target types to JTLS targets that cannot be directly or collaterally damaged in the model. Therefore, no impact to the DMPI target occurred when the JTLS target was attacked during an exercise.

Design Summary

The Scenario Verification Program (SVP) was modified to issue warnings when a DMPI target type is not supported by the model. Specifically, when a DMPI target type is physically linked to a JTLS target, but that DMPI type cannot be directly damaged, a new warning #629 is generated. Also, when a DMPI target type is collaterally linked to a JTLS target, but that DMPI type cannot be collaterally damaged, a new warning #630 is generated.

2.5 JTLS-2012-11073 Allow OPM Access To DRM Pages

Summary of Model Change Request

The capability to provide acronyms to individual Online Player Manual data items was previously added to permit the viewer to map the data item to the specific Database Development System/ Data Requirements Manual name. The new DDS also allows access to individual DRM pages

with data descriptions. Since these data pages already exist, the same capability to access them should exist within the DRM.

Design Summary

The SIP code that generates the OPM pages was modified to specify all acronyms as also being links to the individual DRM page. The SIP setup scripts were modified to allow the Apache server to access the directory that contains these pages.

2.6 JTLS-2012-11081 Allow Naval Target Supplies Retrieval

Summary of Model Change Request

Quick retrieval of supplies status at a naval target was not possible from the Naval Target IMT screen. This capability is available from the standard Target screen and is desirable for reviewing naval Air Defense targets.

Design Summary

A Quick button was added to the Naval Target IMT screen to allow direct retrieval of target supplies.

2.7 JTLS-2012-11093 Provide Destination Name Copying To Shadow Game

Summary of Model Change Request

It is very common when running an exercise to move a checkpoint to multiple shadow scenarios. One of the shadow scenario is usually the run-ahead game. Another is the test game for the ICS to test orders on. With NATO a third is the overnight run game. The JavaMenu permits the copying of a checkpoint to all of these scenarios, but the console terminal that pops up to do the copying does not provide any indication of the destination scenario. Being able to view the destination scenario would be useful to keep track of the copying and to perform proper debugging if ever needed.

Design Summary

The JavaMenu was modified to provide the destination name as part of the console title when it pops up the command console to finish the copying task. In addition the scripts which actually perform the copying, one for the JavaMenu and one for the script based jtlsmenu, were both modified to list exactly which checkpoint was copied to which scenario upon their completion.

2.8 JTLS-2012-11095 Allow TBMs To Be Killed By Controller

Summary of Model Change Request

The Controller has the ability via the Controller Kill Aircraft order to kill aircraft within an air mission or cruise missiles in flight. This same capability does not exist for Theater Ballistic Missiles (TBMS). This is a highly desirable capability that should be added.

Design Summary

The Controller Kill Aircraft order was modified to accept either Cruise Missiles or TBMS, given the Controller the ability to deterministically or by inserting a firing element and using the database probabilistic values to determine a kill.

2.9 JTLS-2012-11098 Add OPM Units of Measure

Summary of Model Change Request

Players generally deal with the Unit of Measure (UOM) values within JTLS through the use of the UOM short name. These short names are 5 characters long and sometimes it is not clear what they are meant to represent. The long names are more descriptive, but no mapping is available for Players to check relationships between the long and short names.

Design Summary

The UOM data was added to the Online Player Manual (OPM) pages. This maps the long and short name, the type of the UOM, and the multiplicative and additive factors.

2.10 JTLS-2012-11106 Squadrons Provide Air Squadron IMT Screen

Summary of Model Change Request

The context sensitive menu associated with units is overly ground-centric. For squadrons it would make more sense for an Air Player if the menu opened the Air Squadron IMT screen instead of the Unit IMT screen.

Design Summary

Since it is not possible for the context sensitive menus to distinguish between the various types of Players this change was made for all Players. Right-clicking on an air squadron will allow the Air Squadron IMT screen to be displayed instead of the Unit IMT screen. This is not viewed as a major loss for other functional Players, since they tend not to be interested in the air units.

2.11 JTLS-2012-11110 JTOI Improvements To Update TBMCS

Summary of Model Change Request

Several issues were discovered during the KE12 exercise when the JTOI was used to update the TBMCS. These were considered as improvements to provide additional capabilities when updating the TBMCS.

Design Summary

These changes are included in this release:

- Added additional setup option to choose object types for data download from the JODA.
- Added the capability to update the location of mobile airbases in TBMCS.
- Provide more information on Object Detail window.
- Added a check for air mission cancel reason, and stop updates to TBMCS when the mission is canceled due to an ATO problem.
- Modified the code to reduce the number of web service calls to improve the update speed.

Note: Due to the changes in the format of the setup file, previous versions of setup files will not work with this release.

2.12 JTLS-2012-11113 Alter Target Type Groups In Active Missions

Summary of Model Change Request

For certain air mission types, a target type group list is usually specified in the order to determine the weapons loaded on the mission at launch. Currently, no mechanism exists for altering the target type group list after the weapon load is assigned to the mission. For example, if a Patrol mission is ordered to search for targets belonging to the generic SMALL.SHIP_TTG and SUBMARINE.TTG, SMALL.SHIP_TTG cannot be removed after the order is submitted. Consequently, the mission cannot be restricted to attacking submarines only and will continue to attack small ships as well. This situation reduces operational flexibility once airborne. The model should be enhanced to allow changes on-the-fly to target type group lists.

Design Summary

A New Target Search field was added to the Change Air Mission Parameter order for Orbiting OAS, Wild Weasel (SEAD), CAS, Patrol, and Armed Recce missions. The field accesses the Target Types List utility containing the predefined target type groups (TTG) available in the model. The underlying CEP code was modified to replace the mission's existing target type group list with the new list specified in the order. The model was further modified to verify the new list contains at least one Ship TTG for Patrol missions and a SAM.AAA TTG for Wild Weasel missions. If not, the existing list is not replaced because the new list is unsuitable for the mission type. A new message (3170 sub 98/99) was created to inform the Player if the new list was accepted or not.

2.13 JTLS-2012-11115 Allow Faster Maximum Speed With Smaller Hexes

Summary of Model Change Request

As a protection against bad movement parametric data within JTLS, the ground movement algorithm ensured that a unit took at least 1 minute to traverse a hex. This was a sensible limitation when JTLS databases were larger hexes, but with 1 Km hexes it imposed a maximum speed of 60Km/Hr. With an even smaller hex terrain of 250m the maximum speed was 15Km/Hr. With terrain databases getting smaller the minimum movement time is no longer valid.

Design Summary

The minimum movement time was adjusted from 1 minute to 1 second. We do not expect any hex terrains where this new value will limit realistic movement. We have retained the minimum movement concept to protect the code against bad parametric data that might signal an instantaneous movement or even a negative time movement. Such bad parametric data will be flagged by SVP checks, but retaining the protection code is easier than investigating crash reports.

2.14 JTLS-2012-11122 Automatic READORDER File Generation

Summary of Model Change Request

The ATO-T software should automatically generate a READORDER file.

Design Summary

The ATO-T software may generate a maximum of 28 different files to be read in to the CEP. Entering the information manually for each file is time-consuming and subject to user errors. The software was modified to create a separate single READORDER containing the readorder commands for all individual files that have been generated. The user enters only one READORDER command.

2.15 JTLS-2012-11126 JOI Improvements

Summary of Model Change Request

Several JOI issues observed during KE12 were considered as improvements to assist operators to monitor the COP feed during exercises.

Design Summary

These changes are included in this release:

- A new output group is added to turn on/off the OTH-Gold messages written to the log file.
- A new output group is added to turn on/off the TADIL-J messages written to the log file.
- Scroll bars are displayed on Setup window as needed

- A setup parameter (BFT Indicator) is added to indicate whether the Air Missions are tracked by Blue Force Trackers. If the BFT flag is set and the aircraft is BFT capable, the Air Missions will generate JUNIT OTH-Gold messages (Unit tracks on GCCS). If the BFT flag is off, the missions will generate the CTC OTH-Gold messages (PlatformAir tracks on GCCS).

- Prevent the JOI from starting when the Checkpoint toggle is checked and an invalid checkpoint file is selected. This will prevent the operator errors that may cause loss of saved track names.

- If the JOI is restarted from a checkpoint and a recovery file is specified with the "-recovery" option, the checkpoint file takes priority over the recovery file.

- Suppress the GCCS Feed Status from the main window when the OTH-Gold option is off.

Note: Due to the changes in the format of the setup file, previous versions of setup files will not work with this release.

2.16 JTLS-2012-11127 Magic Refueled Helicopter On Ground Did Not Launch

Summary of Model Change Request

A helicopter mission landed away from a FARP/Base due to lack of fuel and entered refueling status. Instead of waiting for the refueling process to complete, the Magic Air Ops order was used to refuel the mission, but the mission remained in refueling status. The model should be modified to interrupt the refueling process and launch the mission after a Magic Air Ops order is sent.

Design Summary

When a helicopter auto-rotates down to land after running out of fuel, the simulation looks for a suitable supply source (e.g. a nearby FARP/airbase, Support unit, or Supply Storage target with Class III Aviation on-hand) from which to dispatch an implicit convoy with fuel to the mission's location. An offload complete event is scheduled, based on the implicit convoy speed and the distance traveled. During this time, the mission waits in REFUELING status, although the fuel has already been allocated to the mission, as shown in the SitRep window. If the Magic Air Ops order is sent during this time, the mission still must wait until the scheduled offload complete event occurs before launching. The model was changed to reschedule the offload complete event to NOW when a mission in refueling status is given a Magic Air Ops order, thereby causing the mission to take off immediately. Also, the fuel removed from the supply source is restocked at the mission's home base or FARP.

2.17 JTLS-2012-11128 Mission Duration Cannot Be Zero

Summary of Model Change Request

The ATO Translator generated mission durations equal to zero.

Design Summary

The translator correctly generates zero duration mission times, but did not generate an error message to allow users to identify the problem. The appropriate error message was created. Users are responsible to correct the error before order generation.

2.18 JTLS-2012-11129 Improve MGTGLOC Record Processing

Summary of Model Change Request

The ATO-Translator did not properly process the MTGTLOC record.

Design Summary

The MTGTLOC record can be used in two different positions in a TBMCS and ICC generated ATO. This situation was recently discovered. As a successor to the TASKUNIT record, the MGTGLOC record is used to describe an SSM missile shot. If it follows the AMSNDAT record, it becomes a mission location record for use by an Air Mission to launch weapons at a target. As described by rules for TBMCS and ICC, the MTGTLOC record used in conjunction with the AMSNDAT record cannot be mixed with other mission location description records. Those record types include AMSNLOC, GTGTLOC, SHIPTGT, AIRMOVE, ESCDATA, and RECCEDAT sets. None of these record types can be mixed.

The code was modified to properly process the MTGTLOC record in either position and print a warning message if any of the record types are mixed.

2.19 JTLS-2012-11130 New ACO Data Records And Record Types

Summary of Model Change Request

New EFFLEVEL types RAFL and RARA were encountered when the ACO was processed.

Design Summary

The new EFFLEVEL subtypes RAFL and RARA are used to control Air Mission altitudes. The code was modified to read and process these new types. A error was identified in the current logic used to process the ACO, which caused some records to be skipped. Other record types were identified that may useful and the code was improved to identify those types to operators so they may be evaluated for future use.

2.20 JTLS-2012-11131 Unused ACO Orbit Radius

Summary of Model Change Request

The ATO Translator code did not use the orbit radius provided on the ORBIT record of the ACO.

Design Summary

The ACO contains numerous record types and options that are not routinely used. Until recently, a valid ACO was not available to validate the ORBIT record processing. The software has been updated and tested to read, process, and use the orbit radius of the ACO ORBIT record.

2.21 JTLS-2012-11133 Improved Split Mission Code

Summary of Model Change Request

The ATO Translator code that splits missions was basic and provided only a simple on/off user option.

Design Summary

The ATO translator code automatically splits alert missions into groups of two for ten of the Alert mission types, for all Intercepting mission types, and for some Attack missions, depending on a mission aircraft-to-target ratio. The only user option was a single flag that applied only to Alert and Intercepting missions.

Improved code adds a third field to the Allowable Mission Time table, which contains a row for each mission type. Users can specify for each mission type the minimum number of aircraft for Intercepting and Alert missions. If a user does not desire any of those mission types to be split, a large entry, such as 99, can be used. For Attack missions with new JTLS 4.0 capabilities, only missions for which the number of aircraft in the mission is equal to the number of targets in the mission will be split. This convention seems to be consistent with normal operational procedures. The aircraft will fly together and split off to their separate targets. The other split for Attack missions will be applied only if the number of targets is evenly divisible by the number of aircraft in the mission and all aircraft are cruise missile capable.

2.22 JTLS-2012-11134 Processing Mission MTGTLOC Records

Summary of Model Change Request

The ATO-Translator did not properly read and process MTGTLOC records and generated numerous errors (ERROR 244).

Design Summary

The positioning within the ATO and the format of the MTGTLOC record appear to have been changed since the previous use of this record type. The software was modified to properly process the MTGTLOC record. The calling routine was also optimized to make it easier to follow. ERROR 244 is no longer applicable and was removed.

2.23 JTLS-2012-11135 New ADATSK And DEFEND ATO Record Types

Summary of Model Change Request

New ADATSK and DEFEND record types were encountered when the ATO was processed. These record types generated ATO-T error messages.

Design Summary

The new record types ADATSK and DEFEND establish which Air Defense units must defend which sectors. JTLS 4.0 currently lacks this capability. The software was modified to skip these record types without generating an error.

An issue involving TASKUNIT records associated with the new records was also identified. The location field of the TASKUNIT record typically provides ICAO information, which JTLS can process and use. For ADATSK and DEFEND records, this field will contain unneeded NAME or LATM data. The software was also modified to decipher this field and use needed data only.

2.24 JTLS-2012-11137 Target Type Assignment Screen Not Populated

Summary of Model Change Request

The Target Type Assignment screen was not populated with new mission Target Types when an ATO was read in.

Design Summary

The code previously assigned a group of Target Types for assignment. When a new Target Type was encountered, the user was required to terminate the ATOT, manually edit the initialization file, and restart the translator. The code was improved to identify and display the new Target Type entries on the initial read for each new ATOT session.

2.25 JTLS-2012-11140 Allow JOBE Users To Access IMT Screens

Summary of Model Change Request

JOBE users previously received minimal information about existing units and targets and their prototypes. The IMT screens can provide useful information for users during the database building process.

Design Summary

An IMT component is added to the JOBE to allow users to open IMT screens from the menu bar, or right-click a map object and open the appropriate IMT screen for the object. Like the WHIP IMT screens, users can set filters to display selected data on an IMT screen, or elect to obtain a quick retrieval for another linked IMT screen, and use similar capabilities.

2.26 JTLS-2012-11141 Allow JOBE Users To Access OPM Pages

Summary of Model Change Request

JOBE users previously accessed only minimal information about existing units, targets, and their prototypes. The Online Player Manual pages can provide useful information for users during the database building process.

Design Summary

The JINN application is modified to provide JOBE the necessary OPM pages for the data it has. An OPM component is also added to the JOBE that allows users to open the main OPM page from the menu bar and navigate to the desired page through the links. Users can also right-click a map object and elect to open the OPM page for that object. If the object is newly created or renamed, the corresponding OPM page may be missing; a dialog window indicates the OPM page is unavailable.

2.27 JTLS-2012-11142 Allow JOBE Users To Enter Text Comments

Summary of Model Change Request

While editing data or creating objects, JOBE users may choose to communicate specific comments to the database builder who re-integrates JOBE data to the scenario database.

Design Summary

A Comment field is added to the JOBE Create and Edit dialog window. Users can enter text comments while creating or editing an object. All user comments are saved in a separate comment log XML file.

2.28 JTLS-2012-11146 Improved Method To Find ACO Slides

Summary of Model Change Request

An easier method to identify ACO named locations on the WHIP is required.

Design Summary

The ATOT currently produces slides for the WHIP that are based on the usage type for the defined area. Many slides may be assigned to each of the different usage types. If the user does not know the primary usage type for a ACO area, the location can be very difficult to find. If the usage type is known, users must find one area among all other areas displayed.

A new method for generating the slides was created. Each ACO area has its own slide. The slide name is the same as the ACO area name, which is prefixed by the ATO sequence number and ATO change number.

The main ATO form allows users to select whether the new or previous slide naming convention (or both) should be used.

3.0 SOFTWARE TROUBLE REPORTS

Software Trouble Reports (STRs) describe discovered and corrected JTLS program code errors. Code corrections implemented for previous JTLS releases have been tested with the model enhancements delivered with JTLS 4.0.1.0 and are included.

Errors that are identified and corrected for JTLS 4.0.1.0 and future Maintenance releases in the JTLS 4.0 series are described in this chapter. Italic text identifies each error description, which is followed by an explanation of the implemented solution.

STRs that remain outstanding from previous JTLS versions are listed and described in Chapter 4.0.

3.1 JTLS-2011-10968 JTOI Debug Directory Not Re-Created

The JTOI debug directory holds log files generated while the JTOI is executing. This directory was not re-created when the JTLS JavaMenu was used to start the game.

The Java code was modified to correct this error.

3.2 JTLS-2011-10969 JTOI Did Not Update Side Relationship

The JTOI failed to update Side Relationship changes while executing. The main GUI correctly displayed relationship changes, but incorrectly displayed the Relationship field for JTOI objects.

A Side Relationship change is received from the JODA as an attribute update of the Force_Side objects. When the update is received, JTOI must check and update the Side Relationship attribute for all JTOI database objects. If a new relationship is different from the previous value, an update must be sent to ICC (or TBMCS). JTOI code was modified to update the Relationship field for all objects on the changed Side and send proper updates.

3.3 JTLS-2011-10972 WHIP Context-Sensitive Bridging Operation Error

The WHIP reads a list of context-sensitive orders from its menu file. These orders are pertinent to a specific object type and object relationship and open with a right click on the object. For example, an own-Side ground unit may have a context-sensitive Attack order menu item to specify the unit as an attacking unit. Similarly, an enemy ground unit may also have an Attack order, but when selected the Attack order opens and fills the unit name in as the unit to attack. The relationship between the object, the order that opens, and the field to fill are specified in the WHIP menu file. When an own-Side Bridge target was selected, the Bridging Operations order was presented in the menu. An error window appeared when this order was selected.

The error window appeared because the WHIP menu file specified the BROP (Bridging Operations) order and the order field TARGET. The BROP order has no field named TARGET. The

proper field to specify the target is named RETRIEVE. The menu files that presented the BROP order as a context-sensitive order for Bridge targets were modified to use the proper field name.

3.4 JTLS-2011-10973 Messages Improperly Re-Created

The create_message script transforms messages from Message Definition File (MDF) format to stylesheets used by the WHIP and MDP. The script terminated and reported errors that did not occur.

All errors generated during the transformation are written to a message log file and preceded by a "Line" keyword. The script uses a grep command to identify lines of the log file that contain the keyword. The output of this command is fed to the wc (word count) command, which returns the number of lines found. The return value of this command sequence determines the number of matches.

A failure to find matches typically returns the value "0". This failure returns a space and zero output (" 0") on some systems. The script did not recognize this input and reported errors. Code was corrected to remove leading and trailing spaces from the return value before using it for comparisons.

3.5 JTLS-2011-10974 Unknown Air Missions And Missile Objects Not Displayed

During the JTLS exercise in Norway, unknown air contacts did not appear in the KOI documents for the Google Earth viewer. Contacts identified as belonging to a valid but incorrect Force Side would be displayed on that Side.

The KOI establishes a network link of data for each valid Side in the game and a link for the Unowned (Controller) Side. If the model sets the Side perception of an Air Mission to an invalid Side, the receiving program, the KOI in this case, must interpret the Side as Unknown or Controller.

The KOI received unidentified Air Missions from the model having a perception Side other than Controller or a valid Side. These missions were not placed within any network link and thus were not written to the documents for the viewer. The KOI was modified to place perception Unknown Air Missions and Missiles under the Unowned network link. the missions and missiles will be displayed in the Google Earth viewer from the unowned data tree.

3.6 JTLS-2011-10975 Object Tree Collapse During Google Earth KOI Update

The KOI Web Service produces data documents containing game objects. The documents are processed by the Google Earth viewer. The document contains variables that the Google Earth viewer processes. The refreshVisibility variable is set to True when the KOI generates documents for each network link. This value collapses the expanded tree of objects in the viewer when an update is received. This behavior disrupted a user's current view of the tree when a specific object of the tree was displayed.

The KOI was modified to write documents with the refreshVisibility variable set to False.

3.7 JTLS-2011-10976 Out Of Game Objects Incorrectly Displayed

During the recent preparations for a JTLS exercise in Norway, units brought out of the game by Controller order were displayed by the Google Earth viewer by means of documents produced by the KOI. The model changed the units' posture to OUT OF GAME but the KOI continued to enter data for the units in the network link document that causes the viewer to display the unit.

The KOI is a JODA client that subscribes to unit objects, as well as other object types. An object is received by the KOI, which accesses the object's attribute that controls whether the object displayed to the user. The KOI did process the is_active attribute and therefore allowed the objects to be displayed.

3.8 JTLS-2011-10977 Increase JOI Track Quality Rating For Air Tracks

The Track Quality field represents a numeric value from 1 to 15. The greater values indicate the higher track qualities. Within the JOI, the Track Quality was set to 3 for Link 16 Track messages. During the Norway exercise, C4I personnel requested increasing the Track Quality field to 7 to indicate higher quality.

JOI code was modified to set the Track Quality to 7. Currently, the Track Quality field is included in the Link 16 Air track (J3.2) and Space track (J3.6) messages.

3.9 JTLS-2011-10978 JOI Failed To Reset Link 16 Emergency Flag

When the Mode 3 Squawk field of an Air mission was changed to 7700, the JOI set the Emergency Flag for Link 16 messages to 1 to indicate a squawk emergency on the ICC. When the Mode 3 Squawk was changed to a value different from 7500, 7600, or 7700, the emergency flag did not revert to zero.

JOI code was modified to set the Emergency Flag correctly.

3.10 JTLS-2011-10979 Clarify Cancel Naval Mission Order Panel

Users frequently attempt to use the Cancel order Sequence Number option to cancel a currently executing naval mission. This option does not permit a zero sequence number, which is always assigned to the currently executing order. Therefore, the users unnecessarily report a problem. The Help field clearly describes use of the Cancel Current option for this action, but the text must be revised to assist users to understand the usage of all mission cancellation options.

Help text describing the option selection was modified and simplified to explicitly state that the Cancel Current option is the only appropriate action to cancel the ship or formation's currently executing order. The Cancel All and Cancel Specific options were also renamed to Cancel All Pending and Cancel Specific Pending to assist users to understand that these actions pertain to future pending orders, not currently executing orders.

3.11 JTLS-2011-10981 KOI Configuration Not Saved With HTTPS URLs

The configuration file written by the ICP for the KOI always uses the non-SSL URL and port number from the Apache configuration, but a user may choose to configure the Apache for SSL service. In this case, KOI data are unreachable from the HTTPS launch page and the KOI data are produced with the standard HTTP URL and port number in the associated network links.

The ICP was modified to access the Apache configuration while saving the KOI and HTML configuration files. Thus, the ICP saves the configurations with the proper port number and HTTPS designator when the SSL option has been selected by the user. Google Earth on Linux PCs cannot process documents through a secure HTTPS link, but processes them normally on Windows PCs.

3.12 JTLS-2011-10982 Created Airbase Not Shown On ICC (JTOI)

New airbases that were created were not automatically created in the ICC. The newly-created airbases appeared on the JTOI and the updates were sent manually to ICC from the Object Detail window.

JTOI code was modified to send an update to the ICC when the newly-created unit arrives in the game. The same corrections were applied to other types of units, SAM targets, and Sensor targets.

3.13 JTLS-2011-10984 Message Report Times Rounded To Next Day

An exercise operator viewed a Message Browser message with a date/time of 062359ZNOV11 when the game time was 061115ZNOV11. This message was delivered during the night shift. An examination of the XML message showed the time was correct, but indicated that the message time was within 20 seconds of midnight, indicating a rounding error during conversion of the message from a decimal days since game start format to XML format.

Analysis of the Simscript DAY.F, MONTH.F, and YEAR.F functions revealed that they round upwards if the time is within 30 seconds of midnight. A time of 23:59:30.001 on 31 December 2011 would return a date of 01 January 2012. These functions are used to determine the day, month, and year portions of the XML time. he code was modified to subtract 30 seconds from the message time before passing it to these functions.

3.14 JTLS-2011-10990 ATOT Warning 462 Spelling Error

The word "purposely" was spelled incorrectly in ATO-T Warning 462.

The spelling error was corrected.

3.15 JTLS-2011-10991 AMPN Record Enhancement

The record type AMPN was flagged as invalid in the RESASSET set. This error occurred when an ICC ATO was processed.

A review of ATO set format rules revealed that the AMPN records set can be used in any of the other sets for clarification. Code was modified and tested during the CAX.

3.16 JTLS-2011-10992 DSA Report Provided Incorrect Time Between Looks

A Directed Search Area (DSA) was created with a time interval of 5 minutes between looks. This DSA reported an interval of 6 minutes when a report of all DSAS was requested.

The issue was traced to the extension function that handles durations for the WHIP Message Browser. The Message Definition File (MDF) specified an output format to print days, hours, and minutes and round the minutes. The extension function performed the rounding twice. The first rounding is an incremental rounding that had no effect, but the second rounding added 30 seconds and then used the Java class DecimalFOrmat for output. By default, DecimalFormat performs half-even-rounding (also known as Banker's Rounding). When a value is equidistant between two other values, this algorithm rounds to the even number; 7.5 and 8.5 round to 8, since 9 is not even. The code was modified to remove the half-even-rounding and perform the incremental rounding only. This method adds 0.5 to the value and truncates it at the integer level to yield the expected result; 7.49 rounds to 7 and 7.5 rounds to 8.

Users have the capability to specify the time between looks to the second as well as the minute. A report to the nearest minute is not sufficient. The report message was modified to output to the rounded second.

3.17 JTLS-2011-10994 DDS Client Passed Incorrect Non-Encoded Characters

The Oracle database rejected recognized special characters passed non-encoded from the DDS client application to the database handler.

Oracle verifies specific character sequences to handle certain actions. The DDS Java code was corrected to properly apply URL encoding to the character stream passed to the database handler to prevent characters intended as labels from triggering the Oracle routines.

3.18 JTLS-2011-10995 DDS Exception Variable Held Null Value

An expected exception handling routine within the DDS Client GUI caused a Java exception while attempting to utilize a null variable.

Attempting to use a null variable in Java causes an exception to be thrown, which is invisible to a user if the variable contains a value. A condition was added to ensure the exception variable holds a value before the condition tests the exception message content for a specific instance.

3.19 JTLS-2011-10996 Double Field Special Character Exception

A Java exception occurred when DDS GUI users entered special characters in various positions of the Double entry field.

A generic DDS table cell editor error handling routine did not record this error instance. Updating the reference corrected this the error.

3.20 JTLS-2011-10997 Invalid DCP Modified Flag Setting

The Database Configuration Program (DCP) API automatically set the classificationColorBox property when launched, which automatically generated a request to update the database before exiting.

Code was modified to set the classificationColorBox property only when DDS users enter an explicit change.

3.21 JTLS-2011-10998 Allow Zero ATO Change Number For Air Missions

When an Air Mission is submitted to the CEP without a specified ATO ID or ATO Change Number, the CEP will check the time of the mission and attempt to find an matching ATO Period if one exists. This period is assigned as the mission's ATO ID for and the most recent change to the ATO Period is assigned as the ATO Change Number. This assignment always for WHIP-submitted air orders. since the ATO ID and ATO Change Number are silent fields on all air orders. WHIP users can use the Change Mission Parameter order to modify the ATO ID and ATO Change Number of any Air Mission.

The Change Mission Parameter order allowed Change Numbers of 1 to 99, although zero value is valid and represents the original ATO for that period. A capability should exist to set certain missions to a zero Change Number when the current ATO Change Number is 1 or greater.

The Change Mission Parameter order was modified to allow entry of Change Numbers of 0 to 99. For consistency, all air orders were modified to allow the silent ATO Change Number field to accept values of 0 to 99. The Change Mission Parameter ATO change number field keyword was also modified to match the same keyword used in individual Air Mission order files. The ATOT was updated to use the new keyword in air orders.

3.22 JTLS-2011-10999 Flight Path Deletion Game Crash

When an arc of the system flight path was deleted and existing Air Missions used a route that included this arc, the missions retained the pointer to the deleted arc. The model crashed when the missions encountered this pointer during flight and attempted to access this arc.

Code was modified to ensure that existing Air Mission routes do not contain a reference to a deleted flight path arc. A route that contains a deleted arc is deleted to the next directed hex and

a new optimizing hex is placed first in the route. The presence of the optimizing hex causes a mission to optimize the next leg of its route when moves.

3.23 JTLS-2011-11000 Ground Units Stopped When No Fuel Needed

Ground units using Combat Systems and Sustainment Logistics Prototypes (SLPs) that did not specify fuel consumption values were detached with zero ground fuel. Such units that began moving immediately halted and reported zero ground fuel. Since no fuel consumption values were specified, the units should not be required to have fuel to continue moving.

This error was introduced when the CEP code was converted from an array-based method that tracked unit Combat Systems and supplies to an entity-based method. Units previously checked the amount of fuel required to maintain movement and ensured the fuel On Hand was not less than this amount. The unit would continue moving if the requirement was zero and the On Hand amount was zero. The revised code first checked the Supply Category Set for a fuel entry. If no value was found or the On Hand amount was less than the required amount, the unit would stop moving and send a warning message.

This code was modified to verify whether a fuel requirement exists before checking the existence of the fuel record and the amount On Hand.

3.24 JTLS-2011-11001 OPM Durations Not Converted To Text Format

Units of Measure (UOMs) for durations displayed on Online Player Manual (OPM) pages must be converted from decimal days, hours, minutes, or seconds to a text field that displays the value and literal abbreviation for each component. For example, 0.014296667 days appears as 1H; one hour 15 minutes appears as 1H15M. Many duration parameters were not converted and appeared as decimal days or decimal hours.

All SIP OPM code was searched for the use of the keywords Days, Hours, Minutes, or Seconds in the output, which typically represent durations. All identified durations were converted to output the text duration format instead of the decimal value.

3.25 JTLS-2011-11002 Order Panels Included Inactive Missions

Several air order panels allowed Air Missions that were no longer active to be displayed in the Mission Name drop-down list.

Logic was added to several air order panels to exclude Air Missions that have a COMPLETED, DESTROYED, or CANCELED status.

3.26 JTLS-2011-11003 Incorrect DDS CCP Name Field Labels

Command Control Prototype (CCP) name field labels that appear on DDS screens contained typographic errors.

CPP Name labels were replaced with the correct label CCP Name in the related DDS screen definition XML files.

3.27 JTLS-2011-11004 Failed DDS Supply Category Screen Fill Menu Option

The DDS Supply Category screen Fill menu option failed to populate the ccp_sc_density child table when the "C2 Proto SC Density" option was selected from the menu.

A typographic error in the related XML screen definition file for the ccp_sc_density child table name was corrected.

3.28 JTLS-2011-11005 Failed GDP Hex Transparency

Adjusting the WHIP Map hex transparency percentage slider bar failed to render the hex layer and returned a Java exception.

The number of hex barrier selections used to render hexes was reduced for JTLS 4.0.

The hex barrier color array previously held 32 color indices. When an external file requested a missing color index, a null variable caused a Java exception. Code was corrected to not process a hex barrier color when a missing color index is encountered and continue rendering the available barrier colors.

3.29 JTLS-2011-11006 DDS Runway Type Screen Omitted Copy And Deep Copy

The DDS Runway Type screen did not display the required Copy and Deep Copy record options.

The Copy and Deep Copy options were added to the DDS Runway Type screen definition XML file. The required code existed in a related stored procedure, but the icon and function tags were missing from this file.

3.30 JTLS-2011-11007 DDS Weather Front Deep Copy Option Removed

The Deep Copy option was enabled for the DDS Weather Front screen, but no corresponding child table exists to be populated. The Deep Copy option performed the same function as Copy and was misleading.

The Deep Copy option was removed from the DDS Weather Front screen definition XML file.

3.31 JTLS-2011-11008 DDS Derived Columns Oracle Error

Selecting and executing derived columns contained in the DDS SQL Filtering capability did not constitute a well-formatted SQL expression and produced the Oracle error ORA-00936: missing expression. The alias specification at the end of the column elicited the user to believe it was a complete statement, but in fact it was incomplete, as the error specified.

Eliminating the alias allows the user to deal with just the appropriate column value when formatting up their filter, like non-derived column values.

Example:

ut_uic = '1AW'

(select ut_faction_name from unit_view where unit.ut_short_name = unit_view.ut_short_name) = 'GERMAN'

In this example, the first SQL statement filters on the non-derived column value of ut_uic equaling '1AW'. The second SQL statement filters on the derived column value of (select ut_faction_name from unit_view where unit.ut_short_name = unit_view.ut_short_name) equaling 'GERMAN'.

3.32 JTLS-2011-11009 Civilian Air Traffic Unit Delay Posture

Air Missions launched using the Civilian Air Traffic order adopted a momentary Unit Delay posture until takeoff.

The temporary Unit Delay occurred only when the launch squadron was automatically created by the order and the receiving squadron already existed in the game. The mission resource event in this situation was not delayed because a variable was inadvertently used twice, which caused the logic to 'lose' the created squadron.

3.33 JTLS-2011-11010 WHIP Zoom Button Remained Depressed

The WHIP Map Zoom button remained depressed when the Distance button, Redraw button, and Draw menu option were also selected.

Code was corrected ensure the reset condition was incorporated into the appropriate event handling routines for the Distance, Redraw, and Draw functions.

3.34 JTLS-2011-11011 Unit Combat System TOE Not Set

If a Controller attempts to assign a TOE for a Combat System that the unit does not have, the model rejects the order and informs the Controller to assign the Combat System to the unit's Tactical Unit Prototype (TUP). This action did not provide the Combat System to the unit, which allows assigning the TOE to the unit. The JTLS 3.4 series allowed the Combat System to be added.

The constraint that the unit must have the Combat System prior to any adjustment was removed. If the order is received and the unit does not have the system, the system is created and assigned to the unit. The rejection message previously produced was also removed.

3.35 JTLS-2011-11012 Erroneous Mission Orbit Message

An Air Refuel mission that no longer had fuel available to provide other missions was directed to change its orbit location while heading home. The mission did not comply and issued the message "It is unreasonable for the mission to orbit without available weapons." This misleading message was confusing and did not indicate the actual refusal reason.

Code that verifies the usefulness for a mission to orbit previously returned Yes or No values and was enhanced to return Yes, No Fuel, or No Weapons. The return value determines a message that has an appropriate subcategory. The corresponding message file was modified to handle both cases.

3.36 JTLS-2011-11014 No Intelligence Report For Civilian Air Traffic

Every order has a flag in its XML description file the indicates whether the order is susceptible to interception by foreign Sides. If such an order is intercepted, a message detailing the contents of the order is sent to the foreign Side. To accomplish this, the code that generates the message must handle every type of order that can be intercepted. If an order that is not expected is received by this code, a logic error is generated. Numerous logic errors for the new Civilian Air Traffic order were generated.

Information contained in the Civilian Air Traffic order is widely known and therefore an intercept of the order does not add to the Side's knowledge of any critical event. Therefore, this order was modified from being susceptible to interception to not susceptible to interception.

3.37 JTLS-2011-11015 Air Movement Report Omitted Highlighting Valid Missions

When the Air Movement Report order was opened on a WHIP and the mission field was selected, the allowed missions were not highlighted on the WHIP map.

The Air Movement Report is designed for four mission types: Airlift, Transport, Insert-Extract, and Strategic Lift. The Strategic Lift mission type was not included in the valid list of mission types in the order's XML file and was added to the list. Additionally, the Quick Order instructions which in the same XML file did not specify any fields. The mission name field was added as a Quick field, which prompts the WHIP to highlight the permitted Air Missions.

3.38 JTLS-2011-11016 Unit Arrived Off Board; POT Runway in Wrong Location

A new airbase unit with a prototype-owned target (POT) runway was created off the game board. When the unit arrived, the POT runway was not located with the airbase unit.

When the Create Unit order was processed, the stationary POT runway was placed in the same hex as the Force Side Commander unit, because the arrival location of the owning unit was not yet known. The POT was also placed in the set owner (SO TARGET SET) of that hex. When the Manage TPFDD order was submitted with the off board arrival location, the POT's location was changed (incorrectly) to the intersection of the equator and prime meridian (0,0), and remained

(again, incorrectly) in the SO TARGET SET of the Force Side Commander. When the TPFDD order specified an arrival location on the board, the POT similarly remained (incorrectly) in the Force Side Commander's SO TARGET SET, but was re-located (correctly) to the owning unit's location. This inconsistency, which only occurred when a unit with a stationary POT is created during game execution, could eventually have resulted in a model crash.

To fix this problem, the logic was changed to remove any stationary POT from the Force Side Commander's SO TARGET SET when the owning unit arrives, whether on or off board. Also, if the owning unit arrives on board, logic was added to place the POT in the SO TARGET SET of the same hex as the owning unit.

Note: The incorrect location of the stationary POT when the owning unit arrives off the map board is still under research. However, the location of the runway POT outside the play-box is not critical to the model's functionality. Missions are still flown normally from their off-map locations, regardless of the runway's true location.

3.39 JTLS-2011-11017 OPM JCATS Template Link Misplaced

In the Online Player Manual, the links to the JCATS TUP Aggregate Template Data and JCATS HUP Aggregate Template Data pages were not located at the top of the TUP and HUP pages with other links. Instead, both links were located toward the bottom, separated from the other page links, making the links harder to find.

The links were re-positioned in the OPM near the existing links at the top of the TUP and HUP pages for easier access.JTLS-2011-11018 Manage TPFDD Order Ignored POT Runway

In the Manage TPFDD order, the Player may optionally specify a list of accessible runways to be used by an arriving airbase unit. Such a list supersedes any POT runways the airbase may own. When no runway list was specified in the order, the airbase's POT runway was not accessible for use.

The logic that processes the order automatically removed all runways from the unit's runway set, whether or not the Manage TPFDD order specified a new list. The code was corrected to remove the runways only if the Player specifies a runway list. This change allows any POT runways to remain accessible unless the Player specifies runway targets in the Manage TPFDD order.

3.40 JTLS-2011-11019 CEP Crash Requesting Air Movement Report

A CEP Crash occurred when a user attempted to send an Air Movement Report query to a supply transport mission that was in a SCHEDULED posture. The same crash happened if the query was sent to a mission in a PRELAUNCH posture.

The Air Movement Report provides the user a messages estimating how long the ordered air movement of supplies is expected to take. This computation includes the load and offload times

for the mission. These times are of course dependent upon the number of aircraft loading or offloading. The more aircraft, the faster it goes.

The error was that when the subject mission was in a Scheduled, Prelaunch, or some pre-launch Delay posture, the code used the wrong mission attribute in the computation. It used the attribute AM NUMBER AIRCRAFT LAUNCHED, which was set to zero. This caused a division by zero crash.

The code was changed so that it now uses the AM NUMBER AIRCRAFT REQUESTED if the mission is SCHEDULED, or the AM NUMBER OF AIRCRAFT if the mission is in PRELAUNCH or some pre-launch delay posture such as AIRCRAFT DELAY or RUNWAY DELAY. These mission attributes are in fact set to appropriate non-zero values when the mission is in these postures.

3.41 JTLS-2011-11020 Route Error Changing Return Location

If a user changes the return location of an Air Mission while it is heading for Base Fuel or Tanker Fuel, the mission's route becomes corrupted. The model attempts to correct the problem, but until that happens, the mission could encounter other issues.

The problem was corrected. The mission changes its return location but does not alter its route under this circumstance.

3.42 JTLS-2011-11021 Show TUP Message Zero Unlimited Supplies

The Show TUP Capabilities and Show TUP Supply Status messages displayed zeroes when the specified TUP had unlimited supplies.

The message format was correct. The issue originated in the underlying source code that wrote the carry capacities and supply quantities from the Set/Show TUP and Set/Show SUP orders. The code incorrectly used the defined constant .UNLIMITED (1.0E30), which the conversion function in the message format could not display. This overflow caused a zero to be printed in the message. The code was changed to use the .UNLIMITED.SUPPLY (2.0E09) defined constant, specifically intended for situations where the quantities are essentially unlimited. When the supplies or carry capacities are greater than .UNLIMITED.SUPPLY, that constant is displayed instead of zero.

3.43 JTLS-2011-11022 NATO Reports Message Failed In MTF Format

During a NATO exercise, Controllers attempted to generate the specific messages for NATO reports. These reports are used to feed situation report data to command and control systems. The message was correctly generated by the model, but the WHIP Message Browser failed to display it in MTF language format. Two Java exceptions were displayed in the WHIP when this message was viewed in MTF format.

The errors originated in a portion of the code that combines the raw message data with the text and formatting information. The error occurred while processing an XML stylesheet. This NATO

message uses a fixed-width integer format to display the direction of a moving unit. This formatting data was not accessed by the XML processor, causing the errors. Code changes include the required formatting information and this message displays as expected.

3.44 JTLS-2011-11024 Incorrect OPM Page Accessed For Individual Targets

During a NATO exercise, a Player attempted to access the OPM page for a single target using the WHIP. The Player right-clicked a target and selected the OPM Page option. This action displayed an OPM page that contained a list of all Target Subcategories for that target type. In previous versions of JTLS, this action displayed an OPM page that contained information about the specific target.

Before the release of JTLS 4.0, the organization of the OPM pages for targets was changed. In the OPM, the target data are now cataloged by category and subcategory. This extra layer of target data in the OPM files caused the display error because the WHIP code was not modified to incorporate this change. A modification of the WHIP code to access the correct files when displaying the OPM pages for targets delivers the proper OPM pages for individual targets.

3.45 JTLS-2011-11025 SitRep Window Max Speed Not Updated

A Set Tactical Unit Prototype (TUP) order was submitted with a new Average Movement Speed value. Although the ground units that used that TUP were effected by the change, the WHIP Sitrep display for Maximum Speed did not update to the new value.

The Average Movement Speed value in the Set TUP order is held in the TUP.AVERAGE.SPEED attribute. This attribute corresponds to the maximum_speed unit attribute held in the JODA and is displayed in the WHIP SitRep Maximum Speed field for the selected ground unit. The logic underlying the Set TUP order properly set the TUP.AVERAGE.SPEED attribute to the new value, but failed to update the maximum_speed attribute in the JODA for all the ground units that used that TUP. New code was added to update the JODA with the new value for each unit that used the TUP specified in the order. Also, clarification was added to the order's help text and the Data Requirements Manual.

3.46 JTLS-2011-11028 Crash Printing Squadron Without Aircraft

The print OPM job crashed when a Squadron had no aircraft.

The print job error was corrected, but the Squadron with no aircraft should have also been reported as an error during the verification process. This issue was also corrected. A review of the correction revealed that the verification process also did not report an error when a unit had Combat Systems that required crew but no crew record was specified in the database.

3.47 JTLS-2011-11032 Improve WHIP XML File Error Checking

The WHIP uses numerous XML files to define the data retrieval and appearance of multiple items. For example, each IMT Screen displayed by a WHIP has a corresponding XML data file that

specifies the types of objects that will be retrieved, the attributes of those objects to retrieve, and the column layout for those attributes. An IMT Screen XML file thus references object types within the JDS Protocol (JDSP), attributes of those objects, and vocabulary data types if the JDSP attribute is an enumeration whose text equivalent is to be displayed (DEFEND posture instead of 2). For the IMT Screen XML files and the Menu Definition XML files, a robust error checker did not exist to ensure that references to objects in other files are valid. Invalid references caused the WHIP to throw data exception errors or not respond in a manner expected by the operator.

Stylesheets were developed to check the IMT Screen XML files and the Menu Definition XML files. A script activates these stylesheets and allows a Technical Controller to verify a single file or all files within an IMT Screen group or Menu Definition group.

3.48 JTLS-2011-11033 DRM Splitter Corrections

The original DrmPdfSplitter application failed to parse all documents correctly, missing many portions of the data_requirements_manual.pdf file. The properties file maintained multiple page indicators for parsed documents having more than one page, which could have been read directly from the PDF document.

The corrected version eliminates the parsing errors and also the need to maintain page counts within the properties file.

3.49 JTLS-2011-11034 DDS Fields Not Saved During Record Create

Certain targets, sam_aaa_target, sensor_site_target, facility_target, and jammer_target, received ORA-02290 check constraint errors during record creates. These targets formerly excluded the Owning Unit and Associated Unit fields during record creates, causing Oracle errors that indicated mandatory fields were missing.

Dialogs were updated with the appropriate fields to send the mandatory data to Oracle.

3.50 JTLS-2011-11035 DMPI TDL CCF Number Edit Field Combo Box

The DMPI TDL CCF Number interface was formerly a simple edit box that was incapable of allowing users creating an Associated Target List entry to view alternate Central Control Facility options.

The CCF Number interface in the Associated Target List dialog was modified to a combo box format that allows users to reference all defined CCF entries.

3.51 JTLS-2011-11036 SVP: TW & Advanced TW Duplicate Supply Short Message

The Scenario Verification Program (SVP) generated error message #233 for a prototype-owned SAM/AAA target that did not have enough supply category on-hand to launch its targetable weapon (TW). The same message was generated again because there was also not enough supply on-hand to launch its advanced TW. However, in this case, the advanced targetable

weapon was identical to the standard targetable weapon, which made the second error message unnecessary.

The logic was changed to bypass the second error check if the advanced TW is the same as the standard TW.

3.52 JTLS-2011-11037 Object Information Unavailable For Ghost Objects

A JTLS ghost object represents a detection that has not been completely identified or a missed detection (failing to detected an object at the location where last detected). The JDS Protocol (JDSP) specifies a link attribute to link Ghost Unit objects and Ghost Target objects to the object that they represent. The CEP did not fill these data.

The CEP was modified to provide these data during creation and update of this attribute. Currently, there are no calls with update information, but the framework exists to handle them.

3.53 JTLS-2011-11038 Non-Intersecting Polygon Lines Rejected

An order that contained a polygonal area with a vertical line was rejected because it contained lines that crossed, including a due north-south line and a line that crossed that longitude further north of the north-south line.

The code improperly assumed that any line intersecting the longitude of a longitudinal running line must also intersect the line. The assumption is incorrect because the polygon lines are line segments and not infinite. The code was modified to identify the latitude of the intersection and determine whether it is within the bounds of the north-south line segment. The order is refused if the lines cross and the order is refused. Otherwise, further checks are performed.

3.54 JTLS-2011-11043 DDS Target Renaming Failed

DDS target renaming failed for Runway, Pumping Station and Supply Storage targets.

Because of their child tables, the renaming function for Runway, Pumping Station and Supply Storage targets was designed to be handled by the related update/cascade packages and triggers. The extra after update database triggers for these target tables were conflicting and therefore causing the renaming function to fail. The after update triggers were removed from the JTLS database schema.

3.55 JTLS-2011-11044 Warning 620 Could Not Be Turned Off

Warning 620, concerning whether a DMPI direct damage target was too far from the DMPI impact point, could not be suppressed.

The code was corrected to include the check whether the user indicated that the warning should be ignored.

While in the routine, it was determined that it would be useful for the database builder to know exactly how far away the target was from the DMPI location. The Warning message was changed to output this information.

3.56 JTLS-2011-11045 Launch Point Changed As TBM Moved

The computed launch point moved with the mission when multiple Theater Ballistic Missiles were launched simultaneously.

This issue was attributed to the fact that the launch message was sent to the C4I system before the first detection message was sent. The expected order of information is:

a. The TBM is detected

b. A short time later, the detection assets can compute a likely launch point and the launch point information is then sent.

c. After the boost phase is complete, the detection asset can compute a likely impact point and the impact point information is then sent.

Information "b" was sent before information "a". The code was modified and the model assumes that the launch point can be determined at the midpoint of the missile's boost phase.

3.57 JTLS-2011-11046 DMPI Direct Damage Did Not Occur

Only collateral DMPI target damage was properly processed. All direct target damage appeared to be omitted.

A coding error was introduced into the JTLS 4.0 code as a result of correcting the SELECT Statements. A simple ELSE statement was unintentionally removed, which resulted in processing only collateral target damage. The line of missing code was replaced to allow collateral and direct damage targets to be processed.

3.58 JTLS-2011-11047 Refuel Chits Not Added To Tanker Before Pre-Launch

If a Tanker mission was submitted to the game and the user did not assign refuel chits, the user could not add refuel chits until the mission completed Pre-Launch. Adding the refuel chits should be possible at any time.

A user's request to add refuel chits to a scheduled Tanker mission was rejected because the model believed that the mission was out of fuel. The model did not receive knowledge of the mission's fuel until the mission completed the Pre-Launch process. The code was modified to assume that the mission has infinite fuel and all refuel chit additions are accepted. This is similar to what would have happened if the refuel chits had been entered as part of the original order.

3.59 JTLS-2011-11048 JavaMenu DCP Aborted When Thread Window Closed

The Database Configuration Program was initiated for a scenario in a thread window like all other DCP-initiated commands, but was vulnerable to be aborted when the thread window was closed.

The DCP is started as a stand-alone process without the use of a thread window.

3.60 JTLS-2011-11049 MISREP Weapon Name Did Not Print

The name of a weapon on board an Air Mission was not printed to the MISREP. The number of this weapon loaded and the number used were printed.

The weapon's identifying index was greater than 999. The message code accepted weapon index values less than 1000. The write statement was adjusted to accept an maximum index of 99999.

3.61 JTLS-2011-11050 Deep Copy Failed For SC, SLP and ACP Tables

The DDS deep copy function was failing for the Supply Category (SC), Sustainment Logistics Prototype (SLP), Air Control Prototype (ACP) tables and was causing ambiguous ORA-20011 errors.

The deepcopy_my_record stored procedure included insert statements for the slp_sc child table for the supply_category, the sustainment_log_proto parent tables and acp_iff child table for the air_control_proto parent table.

However, after insert database triggers to populate the slp_sc table and the acp_iff table, did exist for related parent tables and did interfere with the deep copy process, failing to insert a duplicate records into the slp_sc and acp_iff tables. The deepcopy_my_record stored procedure code was modified to exclude the related insert statements to the slp_sc and acp_iff tables.

3.62 JTLS-2011-11051 ATO Dates And Times Mismatch

A user reported a pop-up dialog box when the ATO Translator encountered a mission time that is in the past. The message occurred when the computed time for an Air Mission is in the past when compared to the current game time.

The code has simplified to present the issue as a standard warning message display on the Errors and Warnings tab.

3.63 JTLS-2011-11052 Unnamed Mission Locations Error

Unnamed mission locations on the AMNSLOC record were not properly stored and used. The Air Mission location (AMSNLOC) record in the ATO can contain the name of a mission location defined in the ACO or only the location data without a name. For the instances the record

contains data without a name, the ATO Translator did not properly save and use the desired mission location data.

As described, the AMSNLOC record may store the named location and the information is then obtained from the ACO or the information is stored directly on the AMSNLOC record. During the conversion from CTAPS to TBMCS/ICC, the format of the AMSLOC record changed and the information stored directly on the records was not used properly.

The translator was updated for the new formats. Mission location data passed in on the AMSNLOC record are stored and used properly.

3.64 JTLS-2011-11053 WHIP IMT and Menu XML File Corrections

During CLGT11, stylesheets were created to verify the contents of WHIP Menu files and WHIP IMT Screen files. When these stylesheets were executed, numerous minor errors in these types of files were discovered. These errors consisted of references to orders that did not exist, references to fields in orders that did not exist, and references to JDSP attributes that did not exist for the specified objects.

The errors were corrected in the appropriate XML files.

3.65 JTLS-2011-11054 Misleading Category Code Screen Deep Copy Buttons

The Deep Copy iconic buttons on the DDS Category Code and COD Damage Sayings screens had no function and therefore were misleading.

The nonfunctional Deep Copy iconic buttons on the DDS Category Code and COD Damage Sayings screens were removed.

3.66 JTLS-2011-11055 WDC Weather Condition Screen Incorrect Button Label

The button label on the DDS Weapon Delivery Capability screen for the related Weather Condition child table access was incorrect and misleading.

The button label on the DDS Weapon Delivery Capability screen for the related Weather Condition child table access was corrected.

3.67 JTLS-2011-11056 Transport Unit Order Redundant And Misleading Fields

During international JTLS user training, Players observed that the Transport Unit order panel had redundant entry fields. Type of Order options included Truck Transport Unit and Barge or Rail Transport Unit. However, selecting Barge or Rail Transport Unit displayed BARGE, RAIL, and TRUCK transport options.

The code interpreted selecting Truck Transport Unit or Barge or Rail Transport Unit with TRUCK chosen as the Transport Method in the same manner. The structure of the order panel order

panel was modified to include only three Type of Order options: Transport The Unit (the user must select TRUCK, RAIL, or BARGE), Provide Estimate Only, and Cancel Unit Transport. No code changes were required.

3.68 JTLS-2011-11058 Missing Deep Copy Functionality For MSC and MCC Tables

The Deep Copy functionality was missing from the Mine Search Capability (MSC) and Mine Clearing Capability (MCC) data tables and related DDS screens. This functionality was required.

The required Deep Copy functionality was added to the Mine Search Capability (MSC) and Mine Clearing Capability (MCC) data tables and the related DDS screens.

3.69 JTLS-2011-11059 Nonfunctional Fill Menu Option For SSM-TW Child Table

The CEP business rules dictate that the ssm_tgtable_weapon (SSM-TW) child table must not be populated by filling it with all possible combinations of records. Therefore, the Fill menu option in the Surface Surface Missile DDS screen was nonfunctional, misleading, and had to be removed. Also, the Deep Copy function was not working for this particular child table when a parent SSM record was cascade duplicated.

The Fill menu option was removed from the Surface Surface Missile DDS screen. Also, the deepcopy_my_record stored procedure was modified to include the ssm_tgtable_weapon child table when a SSM parent record is cascade duplicated.

3.70 JTLS-2011-11060 Nonfunctional Ship Speed Level Deep Copy Buttons

The Deep Copy iconic buttons on the DDS Ship Speed Level and Ship Speed Data screens were not functional and therefore were misleading.

The nonfunctional Deep Copy iconic buttons on the DDS Ship Speed Level and Ship Speed Data screens were removed. The redundant Copy iconic button on the Ship Speed Level screen was also removed.

3.71 JTLS-2011-11061 Player Message Omitted After Rejected SSM Order

During pre-exercise database testing, a Cruise Missile failed to attack its assigned target after reaching the target's hex. Under a different STR, testers diagnosed and corrected the model issue that prevented the missile from engaging the target. Investigation revealed a need for additional Player messages directly related to this issue and another Player message collaterally related. This STR corrects both message deficiencies.

The Range/Bearing option can be used to build an order directing an SSM to be fired to a location that is outside the hex boundary. The CEP does not allow engagements outside the hex boundary and rejects the order. No order rejection message was sent to the Player who created such an order. An appropriate rejection message was added.

Players also receive a status message (problem report) when a successfully fired cruise missile fails to reach its assigned attack location, which can occur for several reasons. For example, a "water-only" weapon may encounter a land hex during its route. For most modern cruise missiles, this type of information would likely be available in the real world. A JTLS 4.0 ECP added BDA reporting for cruise missiles. Even if such information would not be available in the real world for older types of cruise missiles, the decision whether to pass it to the training audience in an exercise is still an Exercise Control cell option.

3.72 JTLS-2011-11062 DDS Force Side Screen Omitted Fill All Menu Option

The Fill All menu option was missing from the DDS Force Side screen. JTLS 3.4 and earlier versions allowed use of the Fill All option to populate the force_side_relationship child table.

The Fill All option was part of the fill_child_table stored procedure, but was not activated for the new DDS Force Side screen. The related "fills" section was added to the Force Side screen definition XML file.

3.73 JTLS-2011-11148 Air Mission Order Weapon Load Error

The ATOT wrote the weapon load portion of Air Mission orders using the NEW_LOAD option when the load already existed in the database.

These options are available for specifying the weapon load on Air Mission orders.

- If the load is defined in the database and the user has specified a load, the term EXISTING_LOAD and the load name are used.
- If the load is not in the database and the user has specified the weapons for the load, then the term NEW_LOAD is used.
- If the load is not in the database and the user has not specified the specific weapons, the load assignment statement is omitted and the CEP chooses the best load.

These rules were not observed. The problem has been corrected.

3.74 JTLS-2012-11064 DRM Splitter Corrections

The SplitDrm script file eliminated the ~/documents/DDS directory and thew a Java exception.

The application was corrected to restore the ~/documents/DDS directory appropriately.

3.75 JTLS-2012-11065 DDS 4.0 Fill All Functionality

The original JTLS 4.0 DDS version did not include the capability to generate the number of location transponders as specified for Tactical, Ship, and Highres Unit Prototypes.

A new servlet was constructed to handle this functionality.

3.76 JTLS-2012-11066 DDS Failed To Change DMPI Record Category

A Java exception was thrown when a user attempted to change the category within an existing DMPI from its initial value.

The DDS was configured to recognize the interface to GlassFish servlets for DMPI records, which eliminates the exception and allows DDS to change the category within the DMPI record.

3.77 JTLS-2012-11067 Controller Damage Combat System Crash

A Controller sent a Damage Combat System order to damage 4000 systems at a unit. The unit had none of the specified systems. Two logic errors were printed before the game crashed.

The routine that checks which systems can be damaged was modified to limit damage to only the systems that are present at the unit. The second logic error was modified to self-correct and avoid a crash if a unit does not have all Combat Systems present that are specified to be removed. This should not happen, but the intent of a logic error is to inform Technical Control about an unusual problem and self-correct and allow the model to continue executing.

3.78 JTLS-2012-11068 POT Stationary Targets Had No Political Country

Database developers can assign a Political Country to stationary targets to indicate the country in which the targets reside. No such capability exists if the target originates from a Prototype Owned Target (POT). These targets are specified on a Tactical Unit Prototype and created when a unit of that prototype is created in the game. Since these targets do not have an assigned Political Country, the code defaults to reporting their owning unit's Political Country when the data is requested. However, a logic error occurs during this process.

The same issue exists for game-created targets at runtime, specifically Minefields and Supply Dumps.

Code was modified to avoid the logic error by assigning stationary POT targets the Political Country of their owning unit. When the code requests the Political Country it will be available on the target entity and not generate a logic error.

3.79 JTLS-2012-11069 IIR Sensors Detected Objects Outside DSA

A moving RECCE mission places markers on the game board to indicate hexes that can be covered. This code would place a marker and immediately evaluate whether the sensor could detect any ships. This detection algorithm did not check whether the sensor type was a swath; only swath sensors should detect along a path. Objects outside a DSA were detected by the DSA style sensors.

The code that places sensor markers on the hex board was modified to pass only swath sensors through the logic of immediately checking for ship detections. The code that checks for detections when a ship moves into a covered hex was also modified to allow detection only if the sensor is a swath sensor.

3.80 JTLS-2012-11070 SYNAPSE Crashed When Metadata File Not Found

WHIPs can send instructions to the SYNAPSE to delete obsolete files. If a user deletes a saved order, the WHIP automatically informs that the file is no longer needed and should be deleted. Order groups, user lines, and other WHIP preference files are treated similarly. The SYNAPSE commonly receives such deletions and the files do not exist. The SYNAPSE is prepared to handle this case, but also attempted to delete the metafile associated with all SYNAPSE files and would crash when this file was not found.

The Synapse was modified to handle non-existent metafiles and not attempt to delete them.

3.81 JTLS-2012-11071 Correct JTOI Initialization File OverWritten By SIP

For external programs that require data from the JTLS database, a design rule requires that the CEP and the SIP write out an initialization file for them. In this manner, if an update to the data needs to be made during a running game, the file can be re-initialized by running the SIP setup. As part of this design rule, it is necessary that both programs output exactly the same format. This was not happening with the JTOI initialization file. The SIP was not outputting the full set of data that was required. During the exercise, the SIP was run and the JTOI ended up with an incomplete initialization file, which sent the JTOI into an endless loop.

The SIP was updated so that the JTOI initialization file matches the format used by the CEP.

3.82 JTLS-2012-11072 Uninitialized Player Orders Destroyed

The JODA received delete packets for Pending Order structures that were never initialized with the JODA. This occurred because all Critical Orders are assigned a PO RECEIVER NUMBER to enable tracking in the AAR database. This attribute was previously a designation that the order was Pending and initialized with the JODA. This is no longer the case and only Pending Orders are initialized with the JODA. All Critical Orders sent a delete request to the JODA when they were destroyed.

A new attribute was added to the Player Order Structure to indicate that the order has been initialized with the JODA. This attribute is checked before the delete packet is sent to the JODA.

3.83 JTLS-2012-11074 Order Panel Image Generator Did Not Generate Images

OrderPanelImageGenerator code threw a Java null exception on an undefined type variable. Further investigation also revealed that when the user entered an invalid single order name, the code generated an image of an unrelated order panel.

The OrderPanelImageGenerator was corrected to:

- Add a check for order type. Users must specify "orders" or "reports" following a "-p" argument.
- For invalid order names, corrected logic validates the user-specified order name against all existing order definition files. Order names only with a matching order definition file are processed.

3.84 JTLS-2012-11075 DDS # Location Transponder Tag In TUP/SUP/HUP XML

Transponder tags were originally a trigger to the DDS to generate the number needed to fill these fields. This did not conform to convention.

A separate "transponder" tag was added. When the expression equals "true", the number of location transponders is updated in the appropriate record.

3.85 JTLS-2012-11076 DDS Validation Code Checked Incorrect Value

The DDS validation code checked the incorrect XML value for nullable conditions.

The code was corrected to check the op-value tag for the test condition.

3.86 JTLS-2012-11077 Mission Lost To Air Combat Not Destroyed

The posture of a mission killed due to air combat was not set to DESTROYED. The mission was previously removed with no consequence. Killed missions are currently not immediately removed and their posture should be set to DESTROYED.

Code was modified for the event that assesses air combat. If the last aircraft of the mission is destroyed, the posture of the mission is set to DESTROYED and the JODA is informed.

3.87 JTLS-2012-11078 Confusing Air Defense Range Warning

The SVP checks whether the range of a SAM, SSM, or Sensor target is less than the range of its Target Subcategory and produces an appropriate warning. Similarly, the SVP checks whether the range of the target is greater than the range of its subcategory and produces a separate warning. A SAM target was increased to the range of its subcategory, but produced the second warning.

The second warning was generated when the range of the target was greater than the range of its Targetable Weapon. The Targetable Weapon range is not used by the CEP when determining the range that a SAM/AAA can fire. This check was modified to consider the maximum range of the SAM/AAA subcategory's AD AZ RANGE data.

3.88 JTLS-2012-11079 Cannot Decrement Minefield Appropriately

A Player had a problem decrementing a minefield. He created a naval minefield with 100 mines and then reduced it to 50% by Controller order. The return message stated that it started at 100 mines and was reduced to 97 mines. The minefield stayed at 100% which is expected since there are mines in it. But the expectation was that 50 of the mines would be destroyed.

The error was found in decrementing the minefield where we were adding all the lanes and depth zones as viable options to remove mines from instead of only adding those lanes and depth zones that actually had mines. After fixing that it was noted that if you remove the last mine with Controller action reducing the target to 10% for example that the minefield percent strength stayed at 100% (think of 2 mines in the field and you want to reduce it to 10% - how many mines get removed ?) This was fixed in changing the percent capable for a minefield which now checks the number of mines after removing them to determine if the new percent capable should be 0%.

3.89 JTLS-2012-11080 Failure To Reduce Mission Speed

The speed of a mission that was on an intercept was reduced by the Player. The resulting message listed the new ordered speed and the current speed, which was still its max speed. Missions on intercept or part of a package can not adjust their speed, but this is not noted in the message. Additionally the message stated that the mission route will be constructed/ reconstructed using available air corridors. This was never requested and this change was not made. The message is not informative enough in the first part and is erroneous in the second.

Added a submessage to resultant mission change message that is written when the ordered and current speed do not match; code was modified to generate this sub when needed. Also initialized a local variable to track the modification to the missions route methodology. This variable was already initialized, but was done so inside of a statement that was executed only if the Player had requested a change to the route methodology. The result of initializing it inside the statement was that if the route methodology was not changed the variable held a value for one of the change options and this triggered the submessage.

3.90 JTLS-2012-11082 HRU Unable To Rejoin Off-Board Unit

An HRU was instructed to rejoin its parent while that parent was on the game board. The HRU plotted a route to the parent's location and started moving to that location. Before the HRU arrived at the location the parent was Magic Moved off the game board. When the HRU did arrive at the location it knew that the parent was not there. Normally in this situation the HRU would have optimized a new route to the parent, but because the parent was off the game board this was not possible. The code therefore performed a magic rejoin of the HRU to the parent. However, the code did not mark the HRU as being rejoined (and therefore destroyed). Later in the same routine the code attempted to access the now destroyed HRU which resulted in a game crash.

Testing showed that rejoining an HRU to an off-board unit results in the immediate magic rejoining of the HRU, regardless of the distance between the HRU and its parent unit. Therefore it was decided to modify the logic in moving an HRU. If the HRU moves into a hex that has its parent, or the parent is off the game board, then the rejoin now happens. This will magically rejoin an HRU earlier if the parent moves off the game board, but it mimics the logic of a fresh rejoin to an off-board parent. Taking care of the rejoin early in the code process also ensures that the rest of the code knows the HRU has been destroyed and will not attempt to access it.

3.91 JTLS-2012-11083 WHIP Sitrep Spelling and Consistency

Several minor spelling errors, word choices, and inconsistent case selection existed in the data file used to generate WHIP Sitreps. For example. a support unit listed the "# Tank Trucks" it owned instead of the "# Tanker Trucks".

The file was revised for consistent terminology and case selection.

3.92 JTLS-2012-11084 Controller Assess Weapon Damage Is Arty Strike

When the Controller enters an Assess Weapon Damage order they have the option of specifying the number of rounds fired (to simulate an artillery fired weapon assessment) or an altitude from which to drop the weapons (to simulate air delivery of the weapons). In both cases the resultant code and AAR entries treat the damage as either Artillery Fire or, if the weapon is a missile, as Missile Fire. When the Controller enter an altitude all reports and AAR recording should indicate the damage as the result of external Air Mission delivery.

This was a simple code change to list the damage as Air Strike if the Controller entered an altitude for weapon delivery. Otherwise, if the weapon is missile capable it is listed as a Missile Strike. Otherwise, it is listed as an Artillery Strike.

3.93 JTLS-2012-11085 Player Could Not Map Combat System Names

A Player attempted to perform a Detach by specific Combat System order. They were finding this difficult because the Combat System list was showing the Combat System Prototype names for Combat Systems that was used by the force side HQ. The force side HQ was a naval unit and its Combat System names had little relationship to the names used by this ground Player. Therefore identifying the exact Combat Systems to transfer was difficult.

Three utility directives were switched from using the Combat System names to using the Generic Combat System names.

3.94 JTLS-2012-11086 SVP Error Did Not Contain All Data To Make Match

The SVP error 502 is printed when the database specifies one or more HRUs are created from a unit and the unit does not have sufficient targets to support the HRU requirements. The unit must have one or more targets that match the HRU's HUP requirement for category,

subcategory, and mobility. However, the error message only prints out the requirements for category and subcategory making it difficult for the database developer to identify the problem.

The error message was expanded to also include the expected target mobility.

While fixing this it was also noted that the SIP insists on being able to account for the desired targets as whole single targets or a combination of whole single targets to appease the number of elements specified on the HUP. In other words the SIP will not consider splitting a target to get the proper number of elements even though the CEP will do this. The SIP code was modified to permit the splitting of targets to accomplish the goal of assigning target to all of a parent unit's HRUS.

3.95 JTLS-2012-11087 CEP Crash Attempting To Airlift Squadron

A Helo squadron was ordered to airlift a second helo squadron. When the first load was picked up the code creates the unit detachment. As part of this process the detachment is initialized with the JODA. This code recognizes it as being a squadron unit and therefore attempts to get information on the number of aircraft available at the squadron. The code assumes there must be a Combat System Equipment Item to represent the aircraft. However, nothing has been assigned to this new detachment since it is the first load that was picked up and the load assets are still with the lifting mission. This results in a crash.

The code was modified so that a Combat System Equipment Item for aircraft is not required for squadrons.

3.96 JTLS-2012-11088 Air Mission Determining Next Refuel Logic Error

An Air Mission headed off the game board generated a logic error while attempting to determine its fuel status and refueling requirements.

Code was inserted to determine when the mission will leave the game board based on its current route. Fuel requirements are then calculated only up to that hex. There is no need to calculate other requirements since Air Mission that are off the game board do not consume fuel.

3.97 JTLS-2012-11089 Fire Missile Start Time Switched To Launch Time

When a Player order a unit to fire a missile there are two times that the model deals with. One is the launch time, which is input by the user, and the other is the time that the launcher should start setting up in order to meet the ordered launch time. However the user specified launch time on the Fire Missile order was labeled as "Start Time" and its accompanying help implied that it was the time the unit would start launch preparations (setup). This is wrong and confusing to the Player.

The text label and the help of the Fire Missile order were changed to clarify that the time to be entered is the launch time and that the unit will automatically prepare for the launch in order to meet this user specified launch time.

3.98 JTLS-2012-11090 Mission Could Not Determine Distance To Next Point

When an Air Mission, launched from an off board squadron, that is heading directly home receives an order to change its mission location it attempts to determine the distance to its next major hex (home), and then determine if its off mission time permits it to make it to the new orbit location. However, in the calculation to determine how far to home it generates a logic error because it is attempting to find a hex based distance solution to a location that is not on the hex board.

Code already existed to check if the next major hex was off the game board and to reject the order in that situation. However this code existed after the distance check. The off board rejection was moved up in the execution sequence so that it is checked before attempting to find the distance to the next major hex.

3.99 JTLS-2012-11091 Aircraft End Maintenance Event With No Aircraft

When an Air Mission completes, some of the aircraft may be placed into routine maintenance and others placed in combat maintenance. These aircraft are also placed in the maintenance column of the home squadron's Combat System data. The maintenance period end with an End Maintenance event which is responsible for returning the aircraft to the squadron. This includes removing the aircraft systems from the maintenance Combat System data and making them available again. The Controller can also remove systems from the Combat System maintenance data at the unit. This happened with an End Maintenance event in the event queue. When the event executed there were no systems in the Combat System maintenance data, which caused a logic error to be thrown.

The routine that permits the Controller to remove systems from the Combat System maintenance data was modified to look for End Maintenance events and cancel them if the system being removed from maintenance is Aircraft.

3.100 JTLS-2012-11094 No Crew For Damaged System Crashed Game

The game crashed when a Combat System that requires crew was hit by secondary blast damage. The owning unit did not have any crew in it or in its TO&E. Therefore there was no crew Equipment Item (EI) record filed with the unit. The code gives preference to damaging manned systems before unmanned, but in both cases it then attempts to access the Crew EI to subtract the crew associated with any manned systems. Since there was no Crew EI this crashed the model. This situation should have been flagged as a database error by the SVP but was not.

The code within the SVP to check that a unit which has Combat Systems that require crew also has a Crew EI was not called. Therefore the check was never printed. This oversight was fixed in the SVP. In addition a Logic Error was added to the CEP in case the situation happens again. The logic error states that this is probably an SVP Error that has been ignored.

3.101 JTLS-2012-11096 DDS Missing Deep Copy Functionality For PHL Screen

The Deep Copy functionality was missing from the Probability Hit Lethality (PHL) DDS screen. This functionality was required.

Added the required Deep Copy functionality to the Probability Hit Lethality (PHL) DDS screen by modifying the related XML screen definition file.

3.102 JTLS-2012-11097 Unknown TBMCS Return Code for Missions

The JTOI received a TBMCS Return Code of Unknown from the CEP. This meaningless code is not passed to TBMCS.

The CEP was always passing the code .TBMCS.RESULT.CODE.UNKNOWN when a mission generated its final Mission Report. This was modified to use the ICC AM.SUCCESSFUL.FLAG to generate a TBMCS code of successful or unsuccessful. The TBMCS code was also given an initial value of Order Acknowledged upon the creation of the Air Mission.

3.103 JTLS-2012-11099 Aircraft Maintenance Improperly Modeled For Damage

The database contains attributes for each aircraft class to model the maintenance time for both damage and routine failure: AC AVG DAMAGE REPAIR TIME and AC AVG MALFUNCTION TIME. The times viewed in the model compared to the database items indicated that only the damage time was used.

The code did not use the AC AVG MALFUNCTION TIME attribute regardless of the damage type (malfunction or combat) suffered by the aircraft. The code was modified to properly access and use this attribute.

3.104 JTLS-2012-11100 Controller OTH Collection on Submarine Crashes CEP

A Controller sent an Area Report and specified the Over The Horizon (OTH) flag on the order. A submarine was included in the initial area detection, but we absolutely forbid the detection of submarines with OTH sensors. This was the only item detected in the geographic area. Therefore, this piece of intelligence was removed from the report leaving it empty and the update event was appropriately canceled. However, further in the code it still expected to have the update event and when it attempted to access it the model crashed.

The code was modified so that if after the removal of submarines there are no data items in the update event the event is canceled and we do not attempt further processing of the event.

3.105 JTLS-2012-11101 Naming Mismatch Weapon Damage Against Runway

When the Controller sends an Assess Weapon Damage order against a runway, the Compliance Report message that they receive uses the name of the runway target, not its CCF Number. This

can be confusing, since almost all interaction with the model, including the Assess Weapon Damage order, uses the target CCF numbers instead of the names.

The code was modified to use the CCF number in the message instead of the name.

3.106 JTLS-2012-11102 ci0 Order Passes OVT But Crashes Game

An order was copied from a running scenario's ci0 file and inserted into a Read Order File (ROF). The ci0 orders have a terminating curly bracket, "}", before their final hash, "#", terminator. These brackets are an extra part of the order that should not be included in an ROF. The ROF was then verified using the OVT which did not signal this as an error. When the ROF was read into the game the CEP crashed.

The OVT expects curly brackets as the end of a utility record. In this case it did not exist at the end of a utility record and was ignored by the OVT. Two modifications were made to the OVT to help catch these situations in the future. First, curly brackets (either opening or closing ones) are not treated as start or stop token designators; they must be surrounded by white space. Second, the number of open curly brackets is tracked in comparison to the number of close brackets. This enables the OVT to ensure that every open bracket has a matching close bracket. These code changes ensure the OVT can catch misuse of curly brackets.

3.107 JTLS-2012-11103 Controller Describe DSA Order Crashed CEP

A Controller Describe DSA order was sent to request information on all DSAS on a force side. This order shares code with the Player Manage DSA order. However, the Controller order did not initialize an expected flag, which caused a CEP.

The Controller Describe DSA order was modified to better mimic the format of the Player Manage DSA orders. Code was also modified to handle a few unique fields associated with the Controller order.

3.108 JTLS-2012-11104 Equipment And Supply JODA Initialization Saved

Equipment Item entities and Supply Item entities have an attribute to indicate whether they have been initialized with the JODA or not. These attributes are being saved during a checkpoint and read in during a restart. They should not be; on a restart none of the items has been initialized with the JODA and a new initialization must be sent.

The attribute for both items was removed from the checkpoint write and read code. While implementing this minor item it was noted that the use of the attributes was not consistent throughout the code. This attribute is designed to be assigned the value of YES or NO. However, numerous places in the code assigned it 0 (which is equivalent to NO, but misleading) or used it in a comparison of less than or equal to zero (it can be zero but never less). Such misuse of the variable causes confusion when viewed individually and forces any programmer to review all

uses of the variables before making minor modifications. Therefore the usage of the variable was standardized to use the YES and NO syntax.

3.109 JTLS-2012-11105 Supply Run Leave Event With Invalid Convoy

A multiple delivery resupply convoy was created at the instructions of a Player. This convoy was them almost immediately destroyed via Controller action. The convoy did not clean up properly and left a Supply Run Leave event scheduled. When this event executed the game crashed because of the reference to the now destroyed convoy.

The code was modified so that a convoy that is loading at home now checks for and deletes any Supply Run Leave events that may be scheduled. In addition, while chasing this problem it was discovered that the Player can not create a convoy unless the unit has a TO&E for cargo trucks, tanker trucks, and Heavy Equipment Transport (HET) trucks. This is true even if the Player is only shipping wet supplies and only requires tanker trucks. This code was fixed so that only those types of trucks that have been requested by the Player must be present in the unit TO&E.

3.110 JTLS-2012-11107 Cruise Missiles Terminated Immediately After Launch

A new Fire mission FM RANGE REMAINING variable was added. This variable was not initialized to the range of a cruise missile fired from an aircraft. A cruise missile fired from an aircraft had no remaining range and crash landed.

The variable was properly initialized.

3.111 JTLS-2012-11108 Unavailable Combat Systems Transferred

These issues were discovered for the Player order Mandatory Transfer of supplies.

- A tracking variable that was being used in a loop to identify how many systems could be taken was not being reset to zero at the top of the loop. This could cause the wrong number of systems to be taken from a maintenance of an unavailable column.
- The system allowed the handing out of Combat Systems that were in the Unavailable column. Except for Crew Combat Systems, Unavailable Combat Systems are assigned to other resources, such as Air Missions or Truck Convoys, and are not resident at the unit. Therefore they should not be permitted to be transferred or given away.

The looping variable was properly initialized at the top of the loop. The code to transfer the Combat Systems was modified so only Crew Combat Systems can be taken from the Unavailable column.

3.112 JTLS-2012-11109 Windows White Space Character Crashed CEP

A Read Order File (ROF) was created on a Windows machine and transferred to the Unix side for reading into the CEP. Before it was input into the CEP, the OVT was used to verify the file. The OVT

reported no errors. However, when the CEP read the file, it crashed because of a carriage return character. The OVT, written in C, treated this character as a white space character and therefore ignored it. The CEP, written in Simscript, recognized the character as a valid character and read it in as part of another token.

An error check was added to the OVT to flag any white space within an order that is not a space, tab, or newline character.

3.113 JTLS-2012-11111 JOI Did Not Filter Newly Created Enemy Side Units

The JOI sent newly created units belonging to an enemy Side to the COP when the Side filter setting was Off. When the initial create object data were sent to the JOI from the JODA, the Side attribute was not set and caused the JOI to use the default filter setting of On.

JOI code was modified to allow the operator to set/unset the Side toggles for unknown Side from the Object Type/Side filter dialog for all object types. Also, JOI will check and set the filter correctly whenever it receives updates of attributes used for filtering criteria. This will prevent the messages going to the GCCS for newly created units when the unit's Side is changed from Unknown to am enemy Side.

3.114 JTLS-2012-11112 Detach By TUP Did Not Take Non-CS Supplies

When a Player instructed a detachment by TUP to occur, the resultant unit took supplies to constitute its Combat Systems, but took no other supplies that were listed with its TUP.

A code error was discovered that failed to add the additional non-CS supplies to the supplies that were taken from the parent. This error was corrected.

3.115 JTLS-2012-11116 TUP Combat System Report Omitted Combat Systems

When a Controller requests the Show Tactical Unit Prototype order, one of the reports that is generated is the TUP Combat System Report. This report lists each of the Combat Systems for which the TUP has a TO&E value and lists that value. In the report, all the Combat System names were blank and the index referring to the system is zero.

The local variable to indicate the Combat System index was not being set before being written out in the resultant message. This error was corrected.

3.116 JTLS-2012-11117 JSYMS Organization Type Did Not Update

When a symbol is selected from the symbol combo box on left side of the JSYMS Symbol Set panel, each attribute such as Category, Organization Type, Background, and others on the right side should update to the display. Organization Type did not update correctly.

The JSYMS reads the Organization Type (Short Name) from symbol.scf file and converts to the Long Name using the organization_types.xml file and display it on

the combo box (drop down). Organization Type was not unique in the organization_types.xml file. Therefore, the JSYMS Organization Type drop down did not display correctly.

A JSYMS organization-longname attribute was added to the symbol.scf file. JSYMS directly reads organization-longname for display on the drop-down list. An upgrade function was also added. When JSYMS reads an obsolete symbol.scf file for the first time, the Save button automatically upgrades the symbol.scf file.

3.117 JTLS-2012-11118 DDS CSP Screen Deep Copy Function Failed

The DDS Combat System Prototype (CSP) screen Deep Copy function failed to populate the CSP_CS child table with the clone of existing records. Instead, the related after insert database trigger inserted default values, which are different than the records that should be cloned in the CSP_CS table.

The deepcopy_my_record Oracle stored procedure was modified to disable the database trigger prior to copying the related CSP_CS records. The related database trigger was enabled at the end of the procedure. The Deep Copy iconic button on the DDS Combat System Prototype screen is used only to call this Oracle stored procedure and has no other functionality.

3.118 JTLS-2012-11119 Sinking Ship Moving To Join Logic Error

During pre-exercise database testing, a Logic Error message was generated when a ship that was moving to join a formation experienced its last allowed hull breach and began the sinking process.

The Logic Error message was unnecessary and was generated by a routine that cancels various naval taskings when a ship begins to sink. However, the required cleanup for a sinking ship that was moving to join a formation is done elsewhere in the code. The Logic Error was unnecessary, and the condition that generated it was removed.

3.119 JTLS-2012-11120 Unit JU Number Change Did Not Affect Current Tracks

During exercise Keen Edge 2012, it was noted that when a Player changed the Link 16 JU Number assigned to a unit owning a radar target, the JU Source values for foreign missions currently being tracked by that target were not updated.

The Player order used to manage Link 16 data did not completely process changes to unit JU Numbers. The JU Number for the specified Unit was changed and future foreign missions detected by the affected unit's assets were assigned the appropriate new Source JU Number. However, existing tracked missions were not. The code was modified to correct this error.

3.120 JTLS-2012-11123 ATO Viewer Locked During Compression

Under certain circumstances, a display compression locked the WHIP ATO Viewer. The component could be closed and reopened, but compression remained problematic.

The error due to Air Missions with very short flight times. During compression, the Air Mission label is truncated for missions with short flight times to allow compressed missions to be free of overlapping labels of contiguous missions when the labels extend beyond the displayed flight time bar. During the process of determining how much to truncate the label while under compressed mode for especially short flight times, the derived value generated a negative number, causing an invalid sub-string parameter for the displayed label. This computation caused the ATO Viewer to remain in this mode and be unable determine how to display the label. This error was corrected by preventing the resulting value for the determined label length from being less than zero before performing the string truncation.

3.121 JTLS-2012-11124 Incorrect Polygon Display From Context Menu

Clicking the Polygon check box in the context sensitive menu displayed the polygon, but the check box was not marked as checked, and clicking the check box again did not remove the polygon from the display. The second click caused a second entry in the Map Window On Demand Routes. All other subsequent clicks added a new entry instead of turning the display off or on.

The XML definition file for the context sensitive menu was incomplete in describing the type of route to display for Polygons and did not specify the full name for the proper type of Polygon. This caused the appropriate Java class not be instantiated, making the check box incomplete in its functionality and causing the erroneous behavior.

3.122 JTLS-2012-11125 Insert/Extract HRU Delivery Off Board Crash

During follow-up of model questions from Keen Edge 2012, a CEP Crash was experienced that was associated with an Insert/Extract Mission. The Air Mission picked up an HRU as ordered, and tried to return it to its home squadron because no specific delivery location was included on the order. The home squadron was aboard a ship that was off the game board when the mission arrived.

By design, HRUs are not allowed to exist off the game board. The mission should not have been allowed to try to place the HRU at the off board location. This code error was corrected. Now, if an Insert Extract mission tries to deliver an HRU off the board, the HRU is returned by the model to the pickup point. Controller or Player action may then be required to address the situation within the scope of the exercise plan. Note that this situation cannot be prevented at the time the Insert Extract order is sent. A Controller can always Magic Move a unit off the board while the mission that will eventually deliver an HRU to it is still in the air.

3.123 JTLS-2012-11132 ATO Primary Force Side Not Saved

The ATO Translator did not properly save the ATO_PRIMARY_FS field.

The ATO_PRIMARY_FS field was previously the only means for determining the lead Side for the ATO. The system configuration file for the ATO-T was subsequently modified and a separate file is

now created for each Side. Part of the file contains the Force Side name, and his information no longer must be input through the GUI by the user.

The code was updated to remove the GUI fields as well as the read and write code for saving the data. Users should remove this field from any initialization files that have been saved from earlier versions of the ATO-T.

3.124 JTLS-2012-11136 Default Location Issues

Air Missions moved erratically when adjusted for off-board locations.

When a mission following a path defined in the ACO encounters a location off the game board, the ATO-T default location is substituted. Air Players experienced difficulty determining where the mission was headed. The software was modified to move the desired location in the direction of the default location until it is back on the game board.

3.125 JTLS-2012-11138 Weather Condition Screen Missing Child Table Access

The fill-able child tables were not accessible from the DDS Weather Condition screen. They were previously accessible in the legacy 6i Weather Condition DDS form.

The DDS Weather Condition screen definition XML file was modified to include the fill-able child tables and the Fill menu option for those child tables.

3.126 JTLS-2012-11139 Force Side Renaming Failed For ACP_IFF Child Table

The Force Side renaming failed to update the Perceived Force Side field of the ACP_IFF child table.

No foreign key constraints are defined on the Perceived Force Side field of the ACP_IFF child table, given that the value can be UNKNOWN as well as a valid Force Side name. The related stored procedure code renamed only the real_fs_name field of the ACP_IFF table, but failed to update the perceived_fs_name field. The stored procedure code was modified to also update the perceived_fs_name field when a Force Side is renamed.

3.127 JTLS-2012-11143 Missing JOBE User Warning For Modified Database

The JOBE did not warn a user exiting the application that changes were made to the JOBE database. This could result in loss of data.

Code changes allow the JOBE to warn users when data modifications are made. Users can Exit the application without saving, Save and Exit, or Cancel.

3.128 JTLS-2012-11144 JOBE Issue Recreating Deleted Pre-existing Object

JOBE users can delete any non-Admin Hold object. If the object is newly created and therefore not integrated to the database, no errors occur. If the object is pre-existing and therefore not removed from the database, serious problems occur when the user recreates the object as a different unit or target.

The JOBE tracks all deleted pre-existing objects. When recreating such objects, the user is allowed to create only the same type of object. The object is marked as ALTERED instead of NEW.

3.129 JTLS-2012-11145 JOBE Stability And Operational Updates

JOBE 4.0 was unstable during certain operations, such as re-parenting Associated targets, or moving certain Owned targets. Inconsistent enforcement of data integrity did not allow the JINN to integrate data to the database without errors.

Java code changes correct all encountered stability issues. Re-parenting and moving targets are reworked to allow proper editing. Other data editing and manipulation problems are also addressed. Data integrity checks are added to prevent duplicate object names. Minimums, maximums, default values, and length for certain data are enforced to improve the success of data re-integration to the database.

4.0 REMAINING ERRORS

Every effort has been made to correct known model errors. All reproducible errors that resulted in CEP catastrophic software failures (crashes) have been corrected. Other corrections were prioritized and completed according to their resource cost-to-benefit relationship.

Correction of the remaining STRs, however, must be postponed to a later version due to time and resource constraints. These problems may be corrected prior to the next release of JTLS. If an immediate need arises for code corrections to remedy any of these outstanding STRs—such as an exercise planned to occur before the next release—contact the JTLS Development Team Leader. Refer to the Abstract of this document for the current address.

Code errors described in this chapter should be noted specifically because they affect the basic functionality of JTLS. Information is provided regarding the extent of the error, as well as suggestions to avoid or minimize the effects of the problem.

4.1 JTLS-0942 Air Transport Cannot Combine Wet And Dry Supplies

When both wet and dry supply categories are included in the same Transport Instructions List for an Air Transport mission, they will not be transported at the same time. The first supply category shipment type will be loaded, but the second will not. If both are included in the same Supply List, the wet category is preferred. The aircraft go through the motions as if loading and delivering the denied category, including MISREP confirmation. No pickup or delivery is made, although an empty storage area may be created. There is no documentation to support this situation, and the user is not notified of the problem.

4.2 JTLS-0956 MPP Messages For Canceled Missions In Error

If an airbase is magic moved with several squadrons on active missions that need to be canceled or with squadrons in the middle of a self lift, the subsequent message generated for the situation has several errors. The changes required are too risky during the exercise. The problem will not cause a crash, but will cause the MPP to incorrectly display the message contents.

4.3 JTLS-0961 Group Ground Move Delayed To Lead Unit

There is a problem when a group ground move is sent. The directive is delayed to the lead unit. When the lead unit learns about the move, it immediately tells the units in the follow-on group. This could lead to directives being received out of order. Assume the user sends a directive at 0100 and the CEP determines the lead unit should receive the message at 0200. The lead unit cannot receive any other directives until after 0200. The CEP ensures that directive receipt is in the same order as the user sent the directives. This is not true for the follow-on units. If the user sent an order at 0115 directly to one of the follow-on units, the follow-on unit could receive the 0115 directive prior to the order sent at 0100. If this error is causing problems for upcoming exercises, the Configuration Manager should be contacted for a code fix to solve this problem.

4.4 JTLS-0968 Inconsistency Between Regular Run And Pusher

There is a major inconsistency between a regular run and a run created using pusher. When an order with ASAP is sent, the READ KEYWORD routine sets the data parameter to TIME.V. When pusher reads in the order, TIME.V is much earlier than it was when the order arrived in the first place. For orbiting missions and alert missions, this alters when they will go off alert by a great deal. This must be fixed and made consistent. It appears that both TIME.V and order receipt time must be saved to the ci1 file to accomplish this task.

4.5 JTLS-0971 Ship Continuous Tracking Not Working

The new unidentified object design indicates that ships which are continuously tracked will not have unidentified objects created. A continuously tracked Naval unit and all of its targets are creating unidentified objects. They should not be doing this.

4.6 JTLS-0973 Periodic Report Air Supplies And Fuel Not Correct

The arrays which hold air supply usage are not being maintained correctly given the new MISSION RESOURCE ALLOCATION event.

4.7 JTLS-0974 Submarine Detection By Ground Sensors

A moving submarine does not get full credit for coverage time by sonars on board other ships or submarines. It gets full coverage time for airborne sensors but not ground based sensors.

4.8 JTLS-0981 Formation With No Posture

The model crashed when a formation reached a Destination Two hex and the formation no longer had a posture. Therefore it did not know what to do. A Destination Two hex indicates that the Formation should conduct its assigned Amphibious Operation, drop off its Sealifted supplies or clear mines from a minefield. The posture of the formation is used to tell the formation which of these three tasks should be accomplished.

When the formation reached its Destination Two hex, the posture of the formation was zero; therefore, the formation did not know which of the three tasks should be accomplished.

4.9 JTLS-1384 Area, Target, And Unit Report Documentation

Some users have indicated that the documentation of Area Report, Unit Report, and Target Report similarities and differences are incomplete or inaccurate. A review of this documentation is needed.

4.10 JTLS-2005-1457 Target Auto Assign Errors In Orbiting OAS

An Orbiting OAS mission was created with Auto Assigned allowed and search target category as SSM. An SSM was magic moved to the area of the orbit. Perception of the SSM was given to the

mission's side using the controller Target Report order. The mission saw the target and immediately attacked it. When the OAS mission returned, the Mission Report said it was assigned to attack target UI011816U but the target could not be found. It appears that mission was previously holding the target as unidentified and it was not found after it was assigned a specific target number.

4.11 JTLS-2011-10810 SE Linux Causes JSXR Crashes

Frequent and random JXSR Web Service crashes occurred while executing JTLS 3.4.3 in an exercise network configuration supported by a Security Enhanced Linux-enabled platform. The system configuration included 7 JXSRs and 125 WHIPs. Java 1.6.0.16 was used to support workstations. Accumulation of numerous core.jxsr files in the $/game directory and logic_error files in the $/debug directory was observed. Server CPU resources and system memory were adequate and not adversely affected.

This issue did not occur after SELinux was disabled on the system servers. Until this issue is resolved, executing JTLS or its components on SELinux-enabled systems is not authorized.

APPENDIX A. ABBREVIATIONS AND ACRONYMS

Terms are included in this appendix to define their usage in JTLS design, functionality, and documentation.

AAA	Anti-Aircraft Artillery
AADC	Area Air Defense Commander
AAL	Air-to-Air Lethality
A/C	Aircraft
ACP	Air Control Prototype
ADA	Air Defense Artillery
AEW	Airborne Early Warning
AFB	Air Force Base
AG	Air-Ground (Air-to-Ground)
AI	Air Interdiction
AIM	Air Intercept Missile
AIREF	Air Refueling
AKL	Area Kill Lethality
AMMO	Ammunition
AO	Area of Operations
AOC	Air Operations Center
APC	Armored Personnel Carrier
ARECCE	Armed Reconnaissance
ARTE	Air Route
ARTY	Artillery
ASC	Automatic Supply Calculation
ASCII	American Standard Code for Information Interchange
ASW	Anti-Submarine Warfare
ATC	Aircraft Target Category
ATGM	Anti-Tank Guided Missile
ATK	Attack
ATO	Air Tasking Order
ATOG	Air Tasking Order Generator
ATORET	Air Tasking Order Retrieve Program
ATOT	Air Tasking Order Translator
AWACS	Airborne Warning And Control System

AZ	Altitude Zone
BADGE	Bilateral Air Defense Ground Environment (used by Japan Defense Agency)
BAI	Battlefield Air Interdiction
BDA	Battle Damage Assessment
BDE	Brigade
BN	Battalion
C3	Command, Control, and Communications
C3I	Command, Control, Communications, and Intelligence
C4I	Command, Control, Communications, Computers, and Intelligence
CA	Civil Affairs
CADRG	Compressed ARC Digitized Raster Graphics
CAP	Combat Air Patrol
CAS	Close Air Support
CAT	Category
CCF	Central Control Facility
CCP	Command Control Prototype
CCU	Controller Change Unit
CEP	Combat Events Program
CMDR	Commander
COP	Common Operational Picture
CP	Combat Power
CS	Combat System
CSP	Combat System Prototype
CTAPS	Contingency Tactical Air Planning System
CTG	Commander Task Group
CTRL	Control keyboard command
DCA	Defense Counter Air
DCL	Digital Command Language
DDS	Database Development System
DEMSDB	Demonstration Standard Database
DISA	Defense Information Systems Agency
DIV	Division
DMA	Defense Mapping Agency
DoD	Department of Defense

DOS	Days of Supply
DPICM	Dual Purpose Improved Conventional Munitions
DS	Direct Support
DSA	Directed Search Area
DTG	Date Time Group
EC	Electronic Combat
ECM	Electronic Counter Measure
ECP	Engineering Change Proposal
EEI	Essential Elements of Information
ELINT	Electronic Intelligence
ELS	Entity Level Server
EODA	Entity Level JTLS Object Data Authority
ETA	Estimated Time of Arrival
FARP	Forward Arming and Refueling Point
FLP	Fire Lethality Prototype
FLOT	Forward Location of Troops
FOL	Forward Operating Location
FWL	Frederick W. Lanchester (originated a differential equation model of attrition)
GAL	Gallon
GCCS	Global Command and Control System
GDP	Graphical Database Program
GRTE	Ground Route
GS	General Support
GSR	General Support Reinforcing
GUI	Graphical User Interface
HARM	High-speed Anti-radiation Missile
HE	High Explosive
HELO	Helicopter
HMMWV	High Mobility Multipurpose Wheeled Vehicle
HQ	Headquarters
HRU	High Resolution Unit
HTML	Hypertext Markup Language
HTT	High resolution unit Target Type
HUP	High resolution Unit Prototype

ICM	Improved Conventional Munitions
ICP	Interface Configuration Program
ICPLogin	Interface Login Program
ID	Identifier
IFF	Identification Friend or Foe
IIP	Intelligence Information Prototype
IMT	Information Management Tool
INFO	Information
INTEL	Intelligence
JCATS	Joint Conflict And Tactical Simulation
JCW	Joint and Coalition Warfighting (formerly JWFC: Joint Warfighting Center)
JDA	Japan Defense Agency
JEDI	JODA Entity Data Identifier
JDS	JTLS Data System
JDSP	JTLS Data System Protocol
JRSG	Joint Rapid Scenario Generation (formerly JIDPS: Joint Integrated Database Preparation System)
JMCIS	Joint Maritime Combat Information System
JMEM	Joint Munitions Effectiveness Manuals
JODA	JTLS Object Distribution Authority
JOI	JTLS Operational Interface
JPL	Jet Propulsion Laboratory
JSDF	Japanese Self-Defense Force
JTLS	Joint Theater Level Simulation
JTOI	JTLS Transaction Operational Interface
JXSR	JTLS XML Serial Repository
KIA	Killed In Action
KM	Kilometer
KNOTS	Nautical miles per hour
LA	Lethal Area
LAN	Local Area Network
LAT	Latitude
LB	Login Build (JTLS order type)
LDT	Lanchester coefficient Development Tool
LOG	Logistics

LOGIN	Logistics Input
LOGREP	Logistics Report
LONG	Longitude
LOTS	Logistics Over The Shore
LR	Long Range
M&S	Modeling and Simulation
MAPP	Modern Aids to Planning Program
MB	Megabyte
MCP	Mobility Counter-mobility Prototype
MCR	Model Change Request
MG	Machine Gun
MHE	Materiel Handling Equipment
MIP	Model Interface Program
MOGAS	Motor Gasoline
MOPP	Mission-Oriented Protective Posture
MOSAIC	NCSA user interface software
MOTIF	X Window System graphical interface
MP	Maneuver Prototype
MPP	Message Processor Program
MSC	Major Subordinate Command
MSG	Message
MTF	Message Text Formats
MUREP	Munitions Report
NCSA	National Center for Supercomputing Applications (University of Illinois)
NEO	Noncombatant Evacuation Operations
NFS	Network File Server
NGO	Non-Governmental Organization
NM	Nautical Mile
NTSC	Naval Telecommunications System Center
OAS	Offensive Air Support
OBS	Order of Battle Service (formerly UGU: Unit Generation Utility)
OCA	Offensive Counter-Air
OJCS	Organization of the Joint Chiefs of Staff
OMA	Order Management Authority

ONC	Operational Navigation Chart
OPM	Online Player Manual
OPP	Order Preprocessing Program
OTH	Over The Horizon
OTH Gold	Over The Horizon message specification
OTH-T	Over The Horizon-Targeting
pD	Probability of Detection
pE	Probability of Engage
pH	Probability of Hit
pK	Probability of Kill
PKL	Point Kill Lethality
POL	Petroleum, Oil, and Lubricants
POSIX	International operating system standard based on System V and BSD
PPS	Postprocessor System
PSYOPS	Psychological Operations
RAM	Random Access Memory
RDMS	Relational Database Management System
RECCE	Reconnaissance (air missions)
RECON	Reconnaissance (ground missions)
REGT	Regiment
RNS	Random Number Seed
ROE	Rules Of Engagement
RPT	Report
RSP	Reformat Spreadsheet Program
SAL	Surface-to-Air Lethality
SAM	Surface-to-Air Missile
SAM/AAA	Surface-to-Air Missile/Anti-Aircraft Artillery
SC	Supply Category
SCP	Simulation Control Plan
SDB	Standard Database
SEAD	Suppression of Enemy Air Defense
SIMSCRIPT	Simulation programming language (product of CACI, Inc.)
SIP	Scenario Initialization Program
SITREP	Situation Report

SLP	Sustainment Log Prototype
SOF	Special Operations Forces
SP	Survivability Prototype
SQL	Structured Query Language
SR	Short Range
SRP	Start/Restart Program (a JTLS component)
SRTE	Sea Route
SSM	Surface-to-Surface Missile
STR	Software Trouble Report
SUP	Ship Unit Prototype
SVP	Scenario Verification Program
SYNAPSE	Synchronized Authentication and Preferences Service
TADIL	Tactical Digital Interface Link
TCP/IP	Transmission Control Protocol/Internet Protocol
TEL	Transporter Erector Launcher
TG	Target entity attribute prefix
TGS	Terrain Generation Service (formerly TPS:Terrain Preparation System)
TGT	Target
TMU	Terrain Modification Utility
TOE	Table of Organization and Equipment
TOT	Time Over Target
TOW	Tube-launched Optically-tracked Wire-guided missile
TPFDD	Time-Phased Force Deployment Data
TTG	Target Type Group
TTL	Target Types List
TUP	Tactical Unit Prototype
TW	Targetable Weapon
UBL	Unit Basic Load
UIM/X	GUI builder tool
UNIX	POSIX-compliant operating system
UNK	Unknown
UOM	Unit Of Measure
USA	United States Army (U.S. and U.S.A. refer to United States and United States of America)
USAF	United States Air Force

USCG	United States Coast Guard
USMC	United States Marine Corps
USMTF	United States Message Text Format
USN	United States Navy
UT	Unit entity attribute prefix
UTM	Universal Transverse Mercator
VIFRED	Visual Forms Editor
VMS	Virtual Memory System
VTOL	Vertical Take-Off and Landing aircraft
WAN	Wide Area Network
WDRAW	Withdraw
WEJ	Web Enabled JTLS
WHIP	Web Hosted Interface Program
WIA	Wounded In Action
WPC	Warrior Preparation Center
WPN	Weapon
WT	Weight
WW	Wild Weasel
XMS	XML Message Service

APPENDIX B. VERSION 4.0.1.0 STANDARD DATABASE CHANGES

Major changes include:

- Updated the North Korean Rail Network.
- Updated the South Korean Rail Network.
- Deleted all Railroad ARCs and Nodes for China and Japan.
- Deleted all Road ARCs and Nodes.
- Updated PH/PK data for TACT.TLAM, TLAM-C, AND TLAM-D.

B.1 Railroad Networks

- Moved and deleted North Korean railroad nodes as required.
- Deleted North Korea railroad ARCs as required.
- Moved and deleted South Korean railroad nodes as required.
- Deleted South Korea railroad ARCs as required.
- Deleted all Chinese railroad ARCs and nodes.
- Deleted all Japanese railroad ARCs and nodes.

B.2 Road Networks

- Deleted all road ARCs and nodes.

B.3 Sensors

- Changed sensor type NAT.AST.IR_AGR, ST_COLLECTION_MODE from IMAGERY to IR.
- Changed sensor type NAT.AST.SAR_AGR, ST_COLLECTION_MODE from IMAGERY to RADAR.
- Updated all sensor names, ST_ELINT_NOTATION column data from NA to NONE.
- Cloned A.TO.A.FLIR_AAA and called it TBM.LAUNCH.SEN.
- Changed COLLECTION_MODE to IR for TBM.LAUNCH.SEN.
- Cloned AS.RDR.LR_SAA and called it TBM.TRACKER.

- Changed ASARS-2S_AGR range to 162km.

B.4 Supply Category

- Changed supply category type CL.III.GROUND, SC_CONSUMPTION_TYPE from AS_USED to PER_DAY.

B.5 Targetable Weapons

- Changed TACTICAL.TLAM range from 1300km to 1600 km.
- Changed TLAM-C range from 1300km to 1250 km.
- Changed TLAM-D range from 1300km to 1600 km.
- Changed TACTICAL.TLAM Altitude Zone to 201-300ft.
- Changed TLAM-C Altitude Zone to 201-300ft.
- Changed TLAM-D Altitude Zone to 201-300ft.

B.6 Prob Hit Lethality (PHL)

- Deleted all ship PH values for TACTICAL.TLAM
- Deleted all ship PH values for TLAM-C.
- Deleted all ship PH values for TLAM-D.
- Deleted all target PH values except ships for AGM84A.
- Deleted all target PH values except ships for AGM84C.
- Deleted all target PH values except ships for AGM84D.
- Deleted all target PH values except ships for AGM84G.
- Deleted all target PH values except ships for AGM84H.
- Deleted all target PH values except ships for AGM84K.
- Deleted all target PH values except ships for AGM84L.
- Deleted all target PH values except ships for RGM84A.
- Deleted all target PH values except ships for RGM84C.

- Deleted all target PH values except ships for RGM84D.
- Deleted all target PH values except ships for RGM84G.
- Deleted all target PH values except ships for RGM84L.

B.7 Point Kill Lethality (PKL)

- Deleted all ship PK values for TACTICAL.TLAM
- Deleted all ship PK values for TLAM-C.
- Deleted all ship PK values for TLAM-D.
- Deleted all target PK values except ships for AGM84A.
- Deleted all target PK values except ships for AGM84C.
- Deleted all target PK values except ships for AGM84D.
- Deleted all target PK values except ships for AGM84G.
- Deleted all target PK values except ships for AGM84H.
- Deleted all target PK values except ships for AGM84K.
- Deleted all target PK values except ships for AGM84L.
- Deleted all target PK values except ships for RGM84A.
- Deleted all target PK values except ships for RGM84C.
- Deleted all target PK values except ships for RGM84D.
- Deleted all target PK values except ships for RGM84G.
- Deleted all target PK values except ships for RGM84L.

B.8 Global Values

- Under Extras, all Global Values changed the Missile Update Interval time to 12 seconds.

B.9 Submarine SUPs

- Updated all Electric and AIP submarines SUP data for Maximum Battery Time, Minimum Battery Time, Battery Recharge Time and Recharge Amount.

B.10 Surface to Air Lethality for Aircraft Type by Altitude Zone

- Added Aircraft Target Class IRBM and MRBM to the PATRIOTGEM_SAL.
- Added Aircraft Target Class IRBM and MRBM to the PATRIOTPAC3_SAL..

B.11 Air Defense Class Table – Prob Engage #

- Added Aircraft Target Class IRBM and MRBM to the PATRIOTGEM.BTY and set to .8.
- Added Aircraft Target Class IRBM and MRBM to the PATRIOTPAC3.BTY and set to .9.
- Added Aircraft Target Class IRBM and MRBM to the PATRIOTPAC3.PLT and set to .9.

B.12 Aircraft Class Changes

- Added RQ170.SENTINEL (FW) to Aircraft Class Table.
- Added T-50.PAK.FA (FW) to Aircraft Class Table (Soviet Stealth FW).
- Added UH72A.LAKOTA (RW) to Aircraft Class.
- Changed US1.SHIN.MEIWA from Fixed Wing to Rotary - Allows aircraft to do SAR missions better and act as if lands on water, which it is capable of.
- Changed US2.SHIN.MEIWA from Fixed Wing to Rotary - Allows aircraft to do SAR missions better and act as if lands on water, which it is capable of.

B.13 Aircraft Loads Added or Changed

- Added 12A158X8A86..
- Added 2AA11ERX8AA12.
- Added 2AA11MRX8AA12
- Added 2AS11.EXPX2AA11ERX2AA12.
- Added 2AS11.EXPX2AA11MRX2AA12.
- Added 2AS11X2AA11ERX2AA12.
- Added 2AS11X2AA11MRX2AA12.
- Added 2AS11X2AS11.EXPX2AA11ER.
- Added 2AS11X2AS11.EXPX2AA11MR.

- Added 2AS13X2AS17X2K1500LX2K1500X2AA11ERX2AA12.
- Added 2AS13X2AS17X2K1500LX2K1500X2AA11MRX2AA12.
- Added 2KAB1500LF-LGBX2KAB1500KRX2AA11ER.
- Added 2KAB1500LF-LGBX2KAB1500KRX2AA11MR.
- Added 3A1W2 - 740GALS - F16CJ.
- Added 5A1W2 - 740GALS - F16CJ.
- Added 6A2W2 - 1500GALS - F15.
- Added 6AA12X4AA11.
- Added 8KAB500L-LGBX2AA11ER.
- Added 8KAB500L-LGBX2AA11MR.
- Added RQ170.SENTINEL.DEF.
- Added SBOYFLD.LGA_ASS and SBOYFLD.LGP_ASS to EP3.DEF.
- Added SBOYFLD.LGA_ASS and SBOYFLD.LGP_ASS to OP3C.DEF.
- Added T50.PAK.FA.DEF.
- Added TU154.REECE Load (A.TO.A.FLIR_AAA, SHORTHORN-S_AGK).
- Added U2S-SR.RUBY_AEE (U2).
- Added U2S-SR.SPEAR_AEC (U2).
- Added U2S-SYERS_AGR (U2).
- Changed name of ACL for ASARS_2B to U2S-ASARS_2B.
- Changed name of ACL for ASARS_2S to U2S-ASARS_2S.
- Changed SU33.FLANKER-D AIR TO AIR LOAD DAY AND NIGHT to 6AA12X4AA11.
- Changed TU154 RECCE_LOAD DAY and NIGHT to TU154.REECE.
- Changed U2S LOAD Assignment for RECCE_LOAD Day and Night to U2S-ASARS_2S.
- Changed U2S.DEF Load - Removed ASARS_2S, SR.RUBY_AEE AND SR.SPEAR_AEC

B.14 Sensors

- Deleted the TBM Tracker Sensor.
- Added AN-TPY-2 Radar for the THAAD BTY.
- Added N050.AESA_AAD Radar for T-50.PAK.FA.
- Added N050.AESA_AGK Radar for T-50.PAK.FA.

B.15 Supply Category

- Copied CL.V.SA-LR-2 and called it CL.V.SA-LR-PAC2.
- Copied CL.V.SA-LR-2 and called it CL.V.SA-LR-2GEM.
- Copied CL.V.SA-SR-2 and called it CL.V.SA-SR-PAC3.

B.16 Targetable Weapons

- Added DH-10 Cruise Missile TW.
- Added Musadan TW.

B.17 Target Category - SSM Type.

- Added WS2400.LNCHR for the DH-10 Cruise Missile TW.
- Added MUSADAN(TEL1) for the Musadan TW.

B.18 Naval

- Deleted DD123_JA - Retired.

B.19 Squadrons

- Deleted RW Squadron DD123.SH60.DET_JA - Ship Retired.

B.20 B.9 Air Defense Class Table

- Added a THAAD.BTY.

B.21 TUPs

- Added the TBM.LAUNCH.SEN to the FORCE.HQ_US TUP.
- Added a THAAD.BTRY_US TUP.

- Modified all Patriot TUPs with new Supply Category accordingly.

B.22 Ground Units

- Added JU Number 71000 to Ground Unit TOP-UNIT_US.