

# JTLS

## Version Description Document

July 2015



DEPARTMENT OF DEFENSE  
JOINT STAFF J7  
116 LAKE VIEW PARKWAY  
SUFFOLK, VA 23435-2607

JOINT THEATER LEVEL SIMULATION  
(JTLS 4.1.10.0)

[Blank Page]

## ABSTRACT

The Joint Theater Level Simulation (JTLS<sup>®</sup>) is an interactive, computer-based, multi-sided wargaming system that models combined joint and coalition resource air, land, naval, and Non-Governmental Organization (NGO) environments.

This *JTLS Version Description Document (VDD)* describes specific features of the Version 4.1.10.0 delivery of the configuration-managed JTLS software suite.

JTLS 4.1.10.0 is a maintenance release of the JTLS 4.1 series that includes code modifications that represent corrections to known Software Trouble Reports (STRs), which 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 the JTLS model. Corrections, additions, or recommendations for improvement must reference specific sections, pages, and paragraphs with appropriate justification and be forwarded to:

JTLS Development Team Leader  
ROLANDS & ASSOCIATES Corporation  
120 Del Rey Gardens Drive  
Del Rey Oaks, California 93940 USA  
jtlsdev@rolands.com

Copyright 2015 ROLANDS & ASSOCIATES Corporation All Rights Reserved

[Blank Page]

## TABLE of CONTENTS

ABSTRACT .....	iii
<b>1.0 INTRODUCTION .....</b>	<b>1-1</b>
1.1 SCOPE .....	1-1
1.2 INVENTORY OF MATERIALS .....	1-1
1.2.1 Obsolete/Outdated Documents .....	1-1
1.2.2 Unchanged Documents .....	1-1
1.2.3 Updated Documents .....	1-2
1.2.4 Delivered Software Components .....	1-2
1.2.5 Released Databases .....	1-4
1.3 INTERFACE COMPATIBILITY .....	1-5
1.3.1 Support Software .....	1-5
1.3.2 Special Consideration for the JTLS Air Tasking Order Translator (ATO-T) .....	1-7
1.3.3 JTLS High Level Architecture Compliance .....	1-8
1.4 DATABASE MODIFICATIONS .....	1-8
1.4.1 Database Upgrade to JTLS 4.1 Series .....	1-8
1.4.2 Database Upgrade from JTLS 4.0 or Earlier .....	1-9
1.5 INSTALLATION .....	1-10
1.5.1 Installation Instructions .....	1-10
1.5.2 Oracle Compatibility and Installation .....	1-10
1.5.3 Disabling Certificate Authority .....	1-10
<b>2.0 MINOR MODEL ENHANCEMENTS .....</b>	<b>2-1</b>
2.1 JTLS-2015-12417 REQUIREMENT TO SORT BY SQUADRON SERVICE .....	2-1
2.2 JTLS-2015-12422 AAR TRACKING OF MISSILES .....	2-1
2.3 JTLS-2015-12431 NEW WHIP ALERT MESSAGE FOR UNIT OUT OF FUEL .....	2-1
2.4 JTLS-2015-12444 SPECIFY EXTERNAL SQUAWK MODES AND SHOOTER INFORMATION ..	2-2
2.5 JTLS-2015-12467 STANDARDIZE LOADING OF CHECKPOINTS INTO DDS .....	2-2
2.6 JTLS-2015-12469 ALLOW BROWSER ACCESS TO AAR DATA .....	2-3
<b>3.0 SOFTWARE TROUBLE REPORTS .....</b>	<b>3-1</b>
3.1 JTLS-2014-12127 DDS - MAP EDIT IADS LINKS TARGETS ON DIFFERENT SIDES .....	3-1
3.2 JTLS-2014-12412 FUNCTION XML.DESTROY.ELEMENT CHANGED TO ROUTINE .....	3-1
3.3 JTLS-2015-12413 JOBE CRASH WHEN LOADING SAVED SCENARIO .....	3-1
3.4 JTLS-2015-12414 FORMATION OFF BOARD MOVE CRASH .....	3-1
3.5 JTLS-2015-12415 CONTROLLER NOT INFORMED OF TPFDD MODIFICATION .....	3-2
3.6 JTLS-2015-12416 RANGE RINGS NOT UPDATED FOR ASSAULTED UNITS .....	3-2
3.7 JTLS-2015-12418 ACTIVE ROW ON WHIP SITREP NOT MEANINGFUL .....	3-2
3.8 JTLS-2015-12419 CAN NOT GET INTERIM MISSION REPORT FOR AIRLIFT .....	3-2
3.9 JTLS-2015-12420 ERROR IN DATA CHECK OF MANDATORY UNITS OF MEASURE .....	3-3
3.10 JTLS-2015-12421 CAN NOT LOAD GRAPHIC SYMBOLS INTO DDS .....	3-3
3.11 JTLS-2015-12423 SPLIT AIR MISSION CRASH WRITING CHECKPOINT .....	3-3
3.12 JTLS-2015-12424 CRASH ON REPAIR OF UNOWNED TARGET .....	3-4

- 3.13 JTLS-2015-12425 DESTROYED HRU TURNING EMITTER OFF ..... 3-4
- 3.14 JTLS-2015-12426 TOO MANY OBJECTS IN AIR MISSION INFORMATION SET ..... 3-4
- 3.15 JTLS-2015-12427 UNABLE TO DEPLOY ALERT AT ANOTHER BASE ..... 3-5
- 3.16 JTLS-2015-12428 AIRLIFT/AIRDROP DOESN'T FOLLOW TRANSIT PATH ..... 3-5
- 3.17 JTLS-2015-12429 CAN'T ADD TASKS TO INSERT/EXTRACT MISSIONS ..... 3-5
- 3.18 JTLS-2015-12430 BROADCAST JAMMER TURNING ON WITHOUT JAMMED UNIT ..... 3-5
- 3.19 JTLS-2015-12432 SIP CRASH READING REAL VALUE ANTENNA HEIGHT ..... 3-6
- 3.20 JTLS-2015-12433 TEMPORARY OBJECT DATA NOT CLEARED FROM CEP ..... 3-6
- 3.21 JTLS-2015-12434 EMITTERS AND WEAPONS NOT INITIALIZED ON JODA BOUNCE ..... 3-6
- 3.22 JTLS-2015-12435 ERRORS WHEN ISSUING SUPPLIES TO UNITS ..... 3-7
- 3.23 JTLS-2015-12436 SSM TARGETS NOT USABLE AFTER REPAIR ..... 3-7
- 3.24 JTLS-2015-12437 ATTACKING MISSION NOT PROVIDED ON AIR-AIR ENGAGEMENT ..... 3-7
- 3.25 JTLS-2015-12438 CEP CRASH DUE TO NO SHIP TARGET CAT ENTERED ON ANY TTG ..... 3-8
- 3.26 JTLS-2015-12439 CHECKPOINT LOAD FAILS WHEN NEXT REPORT TIME IN MINUTES .... 3-8
- 3.27 JTLS-2015-12440 TECHTOOL NOT HIGHLIGHTING SEARCHES WITH "OR" COMPONENTS 3-8
- 3.28 JTLS-2015-12441 INCONSISTENT ELS COMBAT SYSTEM COUNTS FOR UNITS ..... 3-8
- 3.29 JTLS-2015-12442 ELS PERFORMANCE ISSUE WHEN LARGE UNITS ARRIVE ..... 3-9
- 3.30 JTLS-2015-12443 UNABLE TO SEARCH FOR TARGET ELEMENTS IN EODA CONSOLE ..... 3-9
- 3.31 JTLS-2015-12445 ELS ISSUES DURING RESTART FROM CHECKPOINT ..... 3-9
- 3.32 JTLS-2015-12446 SOME ORDERS WITH SILENT FIELDS COULD NOT BE RECALLED ..... 3-10
- 3.33 JTLS-2015-12447 OPM LINKS TO LOGISTICS CHAIN NOT WORKING ..... 3-10
- 3.34 JTLS-2015-12448 INVALID XML WHEN ORDER CONTAINS ILLEGAL CHARACTER ..... 3-10
- 3.35 JTLS-2015-12449 INACTIVE WHIPS CAN STILL BE LOGGED IN ..... 3-10
- 3.36 JTLS-2015-12450 TECHTOOL ROE VOCABULARY OUT OF RANGE ..... 3-11
- 3.37 JTLS-2015-12451 UNABLE TO SET HRU BOAT TYPE ..... 3-11
- 3.38 JTLS-2015-12452 REAL VALUES IN UTILITIES NOT FILLED WHEN ROW CLICKED ..... 3-11
- 3.39 JTLS-2015-12453 WHIP UNABLE TO OPEN SITREPS AND IMTS ..... 3-11
- 3.40 JTLS-2015-12456 CORRECT LC2IS NATO MESSAGES ..... 3-12
- 3.41 JTLS-2015-12457 UNIT'S SUPPLY NOT UPDATED TO JODA WHEN DECREMENTED ..... 3-12
- 3.42 JTLS-2015-12459 CONTROLLER CAN SET UNIT CQR RATING TO ZERO ..... 3-12
- 3.43 JTLS-2015-12460 NO REJECTION MESSAGE FOR ORDER TENANT ACTIVITY ..... 3-12
- 3.44 JTLS-2015-12461 SHOWING FACTION ATTRIBUTES WITH MERGED FACTION CRASH ... 3-13
- 3.45 JTLS-2015-12462 NATIONAL BOUNDARIES SHOULD BE OBJECTS ON ORDER PANELS 3-13
- 3.46 JTLS-2015-12463 GLASSFISH HOSTS NOT SWITCHED IN ICP ..... 3-13
  
- 4.0 REMAINING ERRORS ..... 4-1
  - 4.1 JTLS-0942 CEP: AIR TRANSPORT CANNOT COMBINE WET AND DRY SUPPLIES ..... 4-1
  - 4.2 JTLS-0956 CEP: MPP MESSAGES FOR CANCELED MISSIONS IN ERROR ..... 4-1
  - 4.3 JTLS-0961 CEP: GROUP GROUND MOVE DELAYED TO LEAD UNIT ..... 4-1
  - 4.4 JTLS-0968 CEP: INCONSISTENCY BETWEEN REGULAR RUN AND PUSHER ..... 4-2
  - 4.5 JTLS-0973 CEP: PERIODIC REPORT AIR SUPPLIES AND FUEL NOT CORRECT ..... 4-2
  - 4.6 JTLS-0974 CEP: SUBMARINE DETECTION BY GROUND SENSORS ..... 4-2
  - 4.7 JTLS-1384 DOCUMENTATION: AREA, TARGET, AND UNIT REPORT DOCUMENTATION ..... 4-2
  - 4.8 JTLS-2014-12093 CEP - HRU REPORTS DO NOT INCLUDE DETECTED HRUS ..... 4-2
  - 4.9 JTLS-2014-12094 DDS/SVPR - UOM FLICKER ..... 4-2
  - 4.10 JTLS-2014-12096 APACHE/SYNAPSE CANNOT RUN ON SAME CENTOS 6 MACHINE ..... 4-2

4.11 JTLS-2014-12098 CEP - MOVED UNITS DO NOT REMOVE CS FROM SHELTERS .....	4-3
4.12 JTLS-2014-12099 SVPR - ENSURE DDS SENDING SVP INFO TO DEBUG .....	4-3
4.13 JTLS-2014-12101 SVPR - AUTO-FIX NOT SELECTING AFFECTED SUPPLY CATEGORY .....	4-3
4.14 JTLS-2014-12102 DDS - SVPR WARNING 1223 EMPTY TABLE .....	4-3
4.15 JTLS-2014-12103 DDS - NO CHANGE FOR DEFAULT UOM FOR BASIC CATEGORIES .....	4-3
4.16 JTLS-2014-12104 WHIP - ISSUES ON 32 BIT MACHINES .....	4-3
4.17 JTLS-2014-12106 AAR - EXCEPTION WHEN TRANSLATING REPORT .....	4-3
4.18 JTLS-2014-12107 WSM - APACHE STATUS FAILS WHEN FIREWALL BLOCKS HTTP .....	4-3
4.19 JTLS-2014-12108 CEP - BDA REPORTS INACCURATE ON SHELTERED CS KILLS .....	4-3
4.20 JTLS-2014-12110 DDS - PRINTING MULTIPLE DDS REPORTS NEEDS CORRECTION .....	4-4
4.21 JTLS-2014-12112 DDS - ORACLE ERROR DISPLAY DIALOG .....	4-4
4.22 JTLS-2014-12114 DDS - ADD NEW VALIDATOR TO CHECK FOR "NOTOFFSPRING" .....	4-4
4.23 JTLS-2014-12116 DDS - RAILROAD NAME REMAINS ON MAP AFTER DELETION .....	4-4
4.24 JTLS-2014-12117 DDS - MAP CREATE RAILROAD NETWORK WORKS DECEPTIVELY .....	4-4
4.25 JTLS-2014-12119 DDS - COLUMNS DATA FROM ANOTHER TABLE NOT UPDATED .....	4-4
4.26 JTLS-2014-12121 DDS - DRAG/DROP PROBLEMS MODIFYING RAIL NETWORKS .....	4-5
4.27 JTLS-2014-12122 DDS - NO SPACES IN LONG NAME AFTER HIERARCHY DEEPCOPY .....	4-5
4.28 JTLS-2014-12123 DDS - ADD UIC REPLACEMENT OPTION IN HIERARCHY DEEPCOPY .....	4-5
4.29 JTLS-2014-12125 DDS - EDITING LOCATION FIELDS XX-60-60.0N CAN BE ENTERED .....	4-5
4.30 JTLS-2014-12126 AAR - AIRCRAFT KILL SUMMARY REPORT TIME FORMAT .....	4-5
4.31 JTLS-2014-12131 DDS - ADD REPORT TITLE TO REPORT .....	4-5
4.32 JTLS-2014-12132 DDS - CONFUSING REPORT POPUP MENU ITEM .....	4-5
4.33 JTLS-2014-12133 DDS - REPORTS ORDER HELP TEXT NEEDS IMPROVEMENT .....	4-5
4.34 JTLS-2014-12136 DDS - TMU DIFFERENT ALGORITHMS FOR POLYGONS, AREAS .....	4-6
4.35 JTLS-2014-12140 DDS - FLIGHT PATHS DIFFICULT TO SEE .....	4-6
4.36 JTLS-2014-12143 DDS - REPORTS - RENAME THE MUSE REPORT TO DIS. ....	4-6
4.37 JTLS-2014-12144 DDS - EXCEPTION WHILE OPENING TUP FROM SVPR .....	4-6
4.38 JTLS-2014-12145 DDS - EXCEPTION LOGGED WITH NO STACK TRACE .....	4-6
4.39 JTLS-2014-12146 DDS - CANNOT DELETE ILLOGICAL PIPELINE ARC FROM MAP .....	4-6
4.40 JTLS-2014-12147 DDS - FLIGHT PATH WITH MIN ALTITUDE HIGHER THAN MAX .....	4-6
4.41 JTLS-2014-12148 DDS HISTORY TABLE MISSING RECORD IDENTIFIER .....	4-6
4.42 JTLS-2014-12264 CEP - NAVAL MINE DAMAGE DOCUMENTATION OBSOLETE .....	4-7
4.43 JTLS-2014-12265 DDS - NEED "NOT IN" VALIDATOR FOR COMPOSITE UNIQUE KEY .....	4-7
4.44 JTLS-2014-12266 WSM - RELOADING DATABASE WHILE STARTING SERVICE LOCKUP ..	4-7
4.45 JTLS-2014-12270 WHIP - MESSAGE BROWSER MOVES WITH NEW MESSAGE .....	4-7
4.46 JTLS-2014-12272 WHIP - INCORRECT BEHAVIOR SELECTING MULTIPLE MESSAGES .....	4-7
4.47 JTLS-2014-12275 DDS - MOUSE PANNING DOCUMENTATION NEEDED .....	4-7
4.48 JTLS-2014-12277 DDS - NB MAP FILTER DOES NOT TURN NB ON/OFF .....	4-7
4.49 JTLS-2014-12278 DDS - TARGETS GONE WHEN PARENT UNIT'S NAME CHANGED .....	4-8
4.50 JTLS-2014-12279 DDS - REMOVE REFERENCE FIELD FROM REPORT ORDERS .....	4-8
4.51 JTLS-2014-12280 JTLSCONSOLE - NEEDS RECALL COMMAND SIMILAR TO XTERM .....	4-8
4.52 JTLS-2014-12281 SVPR - ERROR CORRECTIVE ACTION FINDS TARGET, NOT JDPI .....	4-8
4.53 JTLS-2014-12282 WHIP - ON DEMAND RANGE RING REMAINED AFTER DELETION .....	4-8
4.54 JTLS-2014-12284 SVPR - VARIOUS ERROR/WARNING ISSUES .....	4-8
4.55 JTLS-2014-12285 AAR/DDS REPORTS - USER ADDED REPORTS DOCUMENTATION .....	4-8
4.56 JTLS-2014-12286 CEP - IMPROPER CALCULATION MANIFEST PROCESSING TIME .....	4-8

4.57 JTLS-2014-12287 DDS - ORACLE ERROR WINDOWS WHEN DDS RECONNECTS ..... 4-9

4.58 JTLS-2014-12288 AAR - TARGET DAMAGE HISTORY REPORT MISSING TABLE ..... 4-9

4.59 JTLS-2014-12289 CEP - AMPHIBIOUS ASSAULT CRASH ..... 4-9

4.60 JTLS-2014-12290 CEP - AMPHIBIOUS ASSAULT NOT COMPLETING ..... 4-9

4.61 JTLS-2014-12291 AAR - ADD AAR DOCUMENTATION ..... 4-9

4.62 JTLS-2014-12292 ICP - SAVING CAUSED CONNECT REQUEST TO CEP ..... 4-9

4.63 JTLS-2014-12293 WSM - ADD WEB SERVICES DOCUMENTATION ..... 4-10

4.64 JTLS-2014-12295 DDS - SQLEXCEPTION WITH COPIED TUP ..... 4-10

4.65 JTLS-2014-12296 SVPR - WARNING TO FIND CEP CRASH, NEVER GENERATED ..... 4-10

4.66 JTLS-2014-12297 WHIP - COORDINATE CONVERTER CANNOT FIND LAT/LON ..... 4-10

4.67 JTLS-2014-12298 DDS - HISTORY TABLE FIELD NOT UPDATED FOR POT TARGETS ..... 4-10

4.68 JTLS-2014-12299 DDS - STRANGE BEHAVIOR IN HIERARCHY DEEPCOPY ..... 4-11

4.69 JTLS-2014-12300 SVPR - AUTO-FIX TERRAIN PROBLEMS NONFUNCTIONAL ..... 4-11

4.70 JTLS-2014-12301 CEP - NO DIVERT WHEN FRIENDLY AIR REFUEL FLAG CHANGES .... 4-11

4.71 JTLS-2014-12303 WHIP - TRIPP RUNNING WITH SHUT DOWN WEB SERVICES LOCK ... 4-11

4.72 JTLS-2014-12304 WHIP - NEW WHIP PUSHED WHEN RUNNING SECURITY EXCEPTION 4-11

4.73 JTLS-2014-12305 WHIP - ROUTE DESELECTED USING CONTEXT MENU STAYS ..... 4-11

4.74 JTLS-2014-12306 WHIP - DEADLOCK WHILE SAVING MAP FILTERS ..... 4-11

APPENDIX A. ABBREVIATIONS AND ACRONYMS .....A-1



## 1.0 INTRODUCTION

### 1.1 SCOPE

This *JTLS Version Description Document* (VDD) describes Version 4.1.10.0 of the configuration managed Joint Theater Level Simulation (JTLS<sup>®</sup>) software suite. JTLS 4.1.10.0 is a Maintenance delivery for the JTLS 4.1 series of releases. JTLS 4.1.10.0 includes the entire JTLS suite of software and the SDBKOR41 Standard Database that supports a realistic scenario based on the current Korean Peninsula theater of operations.

Detailed descriptions of Engineering Change Proposals (ECPs) and minor model enhancements implemented for this release are provided in [Chapter 2.0](#). [Chapter 3.0](#) summarizes all of the bug fixes made since the previous official release of JTLS. Finally [Chapter 4.0](#) lists all known bugs that have not been fixed. Each of these known issues includes a description of the problem's impact on execution of JTLS and suggestions for avoiding or working around the issue to reduce the impact on the operational use of JTLS.

The format of the database has not changed since the release of JTLS 4.1.9.0, but improvements to the suggested default data, as contained the SDBKOR41 scenario, have been made. These database improvements are summarized in this chapter, as well as [APPENDIX B](#).

JTLS 4.1.10.0 executes on the Red Hat Enterprise Linux Version 5 or 6 64-bit operating systems. The Web-Hosted Interface Program (WHIP<sup>®</sup>) 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. All JTLS documents included in this delivery are provided in PDF format within a documents subdirectory.

#### 1.2.1 Obsolete/Outdated Documents

No documents have been removed from the JTLS documentation suite for this release.

#### 1.2.2 Unchanged Documents

The following documentation is provided for this release:

- *JTLS Analyst Guide* (JTLS Document 01, Version 4.1.10.0)
- *JTLS ATOT User Guide* (JTLS Document 03, Version 4.1.10.0)
- *JTLS Controller Guide* (JTLS Document 04, Version 4.1.10.0)
- *JTLS Data Requirements Manual* (JTLS Document 05, Version 4.1.10.0)

- *JTLS DDS User Guide* (JTLS Document 06, Version 4.1.10.0)
- *JTLS Director Guide* (JTLS Document 07, Version 4.1.10.0)
- *JTLS Executive Overview* (JTLS Document 08, Version 4.1.10.0)
- *JTLS Installation Manual* (JTLS Document 09, Version 4.1.10.0)
- *JTLS WHIP Training Manual* (JTLS Document 10, Version 4.1.10.0)
- *JTLS Player Guide* (JTLS Document 12, Version 4.1.10.0)
- *JTLS Standard Database Description* (JTLS Document 14, Version 4.1.10.0)
- *JTLS Software Maintenance Manual* (JTLS Document 15, Version 4.1.10.0)
- *JTLS Technical Coordinator Guide* (JTLS Document 16, Version 4.1.10.0)
- *JTLS Entity Level Server User Guide* (JTLS Document 19, Version 4.1.10.0)
- *JTLS Federation User Guide* (JTLS Document 20, Version 4.1.10.0)
- *JTLS C4I Interface Manual* (JTLS Document 21, Version 4.1.10.0)
- *JTLS DDS Training Manual* (JTLS Document 23, Version 4.1.10.0)

### 1.2.3 Updated Documents

- *JTLS Version Description Document* (JTLS Document 17, Version 4.1.10.0)

### 1.2.4 Delivered Software Components

JTLS 4.1.10.0 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:

- Database Configuration Program (DCP)
- DDS User Interface (DDS)

In order to use the DDSC, the GlassFish domain must be re-saved as follows:

1. In the DCP, stop the GlassFish server.
2. Change the execution host and then change it back.
3. Save (After the save, the server will be left running).

- Combat Events Program (CEP)
- Scenario Initialization Program (SIP)
- Interface Configuration Program (ICP)
- Reformat Spreadsheet Program (RSP)
- Database Development System (DDS)
- Terrain Modification Utility (TMU)
- JTLS Symbols Application (JSYMS)
- Lanchester Development Tool (LDT)
- ATO Translator Program (ATOT)
- ATO Retrieval Program (ATORET)
- Convert Location Program (XCONVERT)
- Count Critical Order Program (CCO)
- 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:
  - a. Apache Server, version 2.4.7 (APACHE)
  - b. JTLS XML Serial Repository (JXSR)
  - c. Order Management Authority (OMA)
  - d. Synchronized Authentication and Preferences Service (SYNAPSE)
  - e. XML Message Service (XMS)

f. Total Recall Interactive Playback Program (TRIPP)

In order to use After Action Reports in the TRIPP the GlassFish domain must be re-saved as follows:

1. In the WSM, stop the AAR GlassFish server.
2. In the ICP, on the GlassFish tab, deselect, and then reselect GlassFish.
3. In the ICP, save.
4. Restart the AAR GlassFish server.

- Entity Level Server (ELS)
- JTLS Operational Interface (JOI)
- KML Operational Interface (KOI)
- TBMCS/ICC Interface Program (JTOI)
- JTLS Interface Network Navigator (JINN)
- JTLS Order of Battle Editor (JOBED)
- Technical Control Tool (TechTool)

Instructions for installing JTLS 4.1.10.0 are provided in the *JTLS Installation Manual*. Installing a previous version of JTLS prior to installing JTLS 4.1.10.0 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.

### 1.2.5 Released Databases

This release includes these sample unclassified databases:

- The scenario developed as the Korea Standard Database and named SDBKOR41 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 DEMSDBKOR41, which is a reduced version of SDBKOR41, **has** been updated from JTLS 4.1.5.0 for this release and contains the most current engineering level data from the SDBKOR41 scenario.
- The scenario blank40 is the SDBKOR41 database, with all force structure data removed, can be used as a framework for building your customized database. This database has been updated and contains the most current engineering level data from the SDBKOR41 scenario.

### 1.3 INTERFACE COMPATIBILITY

#### 1.3.1 Support Software

JTLS 4.1.10.0 requires the following versions of support software, including operating systems, compilers, scripting utilities, database tools, transfer protocols, and display managers.

- Operating systems for the model:

Red Hat Linux Enterprise Edition Version 5 or 6 (ES), 64-bit architecture.

CentOS Linux Version 5 and 6

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.

When running JTLS on any Version 6 Red Hat Linux Enterprise Edition system, do not run the SYNAPSE and APACHE services on the same machine. This is a known issue, and the development team is continuing to find a solution, so this restriction is not necessary.

The Development Team has started to investigate the impact of Version 7 Red Hat Linux on JTLS. This testing is not complete; therefore, JTLS 4.1.10.0 is not approved for use with Version 7 of Red Hat Linux.

- There are no restrictions on the operating system for client workstations, except that the operating system must have a Java-enabled web browser. JTLS 4.1.10.0 client software has been tested on the following operating systems:

Red Hat Linux Enterprise Edition Version 5 and 6

CentOS Linux Version 5 and 6

Windows Vista, Windows 7, or Windows 8 can be used only if the workstation is an external HTTP client of the simulation network.

- Java 1.7.0 Update 80 for model server machines.
- Java 1.8.0 Update 51 for client workstations.

Oracle has announced that Java 1.7.0 Update 80 will be the last public update for Java 7. Java 1.7.0 Update 80 has expired as of July 15, 2015 and can no longer run the WHIP, TRIPP and DDSC via a web browser on the model server machines.

Server machines cannot be upgraded to Java 8, because the Glassfish server software will not run under Java 8. To work around this problem, three new scripts have been added to run the WHIP, TRIPP and DDSC from the command line on model server Linux machines. Typing either "whip", "tripp", or "ddsc" in a terminal window will print the usage instructions.

Client machines must be upgraded to Java 8 Update 51 to run the WHIP, TRIPP, and DDSC.

- JTLS database tools require use of a certified Oracle database server and the full Oracle Client installation for runtime requirements. Refer to [Section 1.5.2](#) 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 the supported versions of Red Hat Linux ES.
- 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 the supported versions of Red Hat Linux ES is sufficient.
- The Perl script language is used by the JTLS system and game setup scripts. The version of Perl included with the supported versions of Red Hat Linux ES 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.
- 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.
- 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 the supported versions of Red Hat Linux ES 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 the supported versions of Red Hat Linux ES is sufficient.
- The JTLS DDS (Database Development System) application uses these open source libraries, which are delivered with JTLS:

JFreeChart, licensed under LGPL (GNU LESSER GENERAL PUBLIC LICENSE) by Object Refinery Limited, <http://www.object-refinery.com>

JCommon, licensed under LGPL2.1 (GNU LESSER GENERAL PUBLIC LICENSE version 2.1 or later) by Object Refinery Limited, <http://www.object-refinery.com>

Commons-math3-3.0.jar, licensed under Apache Software Foundation (Apache License, Version 2.0) <http://www.apache.org/licenses/LICENSE-2.0> OHLA Compliance

- KML Operational Interface (KOI)

The Keyhole Markup Language (KML) Operational Interface (KOI) server utility enables the model to feed operational simulation data to any version of Google Earth™. 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 *C4I Interface Manual* describes requirements and procedures for using the KOI capabilities.

### 1.3.2 Special Consideration for the JTLS Air Tasking Order Translator (ATO-T)

The ATO-T executes in two modes:

- In the basic mode, one or more files 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.
- In the advanced mode, the ATO-T 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 libraries needed to support both ATO-T modes are delivered as part of the JTLS software package with the permission of CACI, Inc and Oracle Corporation. The necessary SIMSCRIPT libraries are released in the `~/bin_support/Linux64/simscript` directory. The Oracle libraries are released in the `~/bin_support/Linux64/oracle` directory.

To run the advanced mode, users must have access to an Oracle server. Users must obtain, install, and configure the most current Oracle Full Client to use the ATO-T in the OEC mode.

### 1.3.3 JTLS High Level Architecture Compliance

The JTLS 4.1.10.0 release is fully High Level Architecture (HLA) compliant, and includes all the programs required to run JTLS in an HLA mode. JTLS has moved to a new Federation Object Model (FOM) located in the \$JGAME/data/hla directory. Federation testing of JTLS is not complete, but some initial tests with CAE's Gefechts-Simulation system (GESI) have been accomplished. Future plans include expanding the capabilities to fully establish the GlobalSim Federation.

The HLA RTI (Run Time Infrastructure) executive program (rtiexec) recommended for use with this release is RTI-NG-Pro-v7.0 or Pitch pRTI Evolved 4.4.2.0. However, these programs are not included in the JTLS 4.1.10.0 delivery. Users may obtain a full installation package of the RTI software from either vendor: Raytheon Company (<http://www.raytheon.com>) or Pitch Corporation ([www.pitch.se](http://www.pitch.se)). For information about executing the HLA RTI Executive and other HLA-related software, refer to the appropriate HLA documentation and user guides.

## 1.4 DATABASE MODIFICATIONS

### 1.4.1 Database Upgrade to JTLS 4.1 Series

No database structure differences exist between JTLS 4.1.10.0 and any previous 4.1 series database.

There are no changes between the database structure in JTLS 4.1.9.0 and JTLS 4.1.10.0. There are no special requirements to upgrade your database for JTLS 4.1.10.0.

To upgrade your previously installed and modified JTLS 4.1.5.0 scenario or earlier for JTLS 4.1.10.0, you must unload and reload your scenario. This will recreate the modified stored procedures, database triggers, etc. Failing to do so will cause issues in DDS operations, such as renaming, copying, and deep copying existing records.

If you are upgrading to JTLS 4.1 from JTLS 4.0 or earlier, you must unload and reload your scenario after the modification is completed.

The JTLS Default Symbol Set has not changed since the initial delivery of JTLS 4.1.0.0, If this version of JTLS is your first JTLS 4.1 series installation, then the Default Symbol set must



propagated to any of your scenarios that originated under JTLS 4.0 or any previous version. Use the procedure that follows. You should not make any modifications to the Default Symbol Set.

Use this procedure to start the JSYMS program to update the Default Symbol Set used by one or more scenarios.

1. Enter the command "jsyms –edit-default" from a command prompt window. Do not use the JTLS Menu > Database Menu for this purpose. This message appears:  
  
"!!! JSYMS Allows Editing and Saving the Default Symbol Set."
2. Select the Default Symbol Set from the drop-down menu and select OK.
3. Select Symbols from the menu bar, and select Save to update all scenarios that use the Default Symbol Set.
4. Close JSYMS.
5. Use the JTLS Menu Option 1 > 1 > 6 (Load Symbols) to load the current Default Symbol Set to your scenario account in the Oracle database.

#### 1.4.2 Database Upgrade from JTLS 4.0 or Earlier

Users who currently possess a JTLS scenario (ASCII file set) compatible with a version earlier than Version 4.1.0.0 can use this recommended modification procedure after installing this new version of JTLS:

1. Create a new Oracle account for the scenario.
2. From the new JTLS account, load the scenario ASCII files to the newly created Oracle 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 4.1, 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 a full Oracle Client version 10.2.0.5.4 or higher installation.

## 1.5 INSTALLATION

### 1.5.1 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.

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

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

### 1.5.3 Disabling Certificate Authority

Keeping with high security standards, R&A has opted to sign its web-enabled applications with a certificate from the COMODO Certificate Authority (CA). It uses the Public Key Infrastructure (PKI) to validate the digital signature. The PKI attempts to validate the certification on COMODO's servers via the Internet. Because of security issues and the expiration of versions, it is strongly recommended that Web Start technologies be signed by a CA to validate that an application being run comes from a trusted and registered source under the PKI.

Local area networks, intranets and standalone systems that have no outside connection to the Internet must configure their installation to disable certificate revocation checks. If this step is not taken under a closed environment, the JTLS web enabled applications will experience a significant delay in start up.

The following outlines how to turn off certificate revocation checks. Again, this step should only be taken if the WHIP, TRIPP and/or DDS are going to be run in a closed environment.

Bring up the Control Panel. On Linux, typing 'jcontrol' in a terminal window will bring up the configuration panel. On Windows, go to the Windows Control Panel and select 'Java'. Both Linux and Windows will display the same configuration panel.

Navigate to the 'Advanced' tab and scroll down to the 'Perform certificate revocation checks on' heading. Select the 'Do not check (not recommended)' radio button and click 'OK'. The image below illustrates the corresponding selection in the Control Panel.

Completing this step will allow you to run the JTLS web enabled applications without any external checks and launch the application without the validation delay.

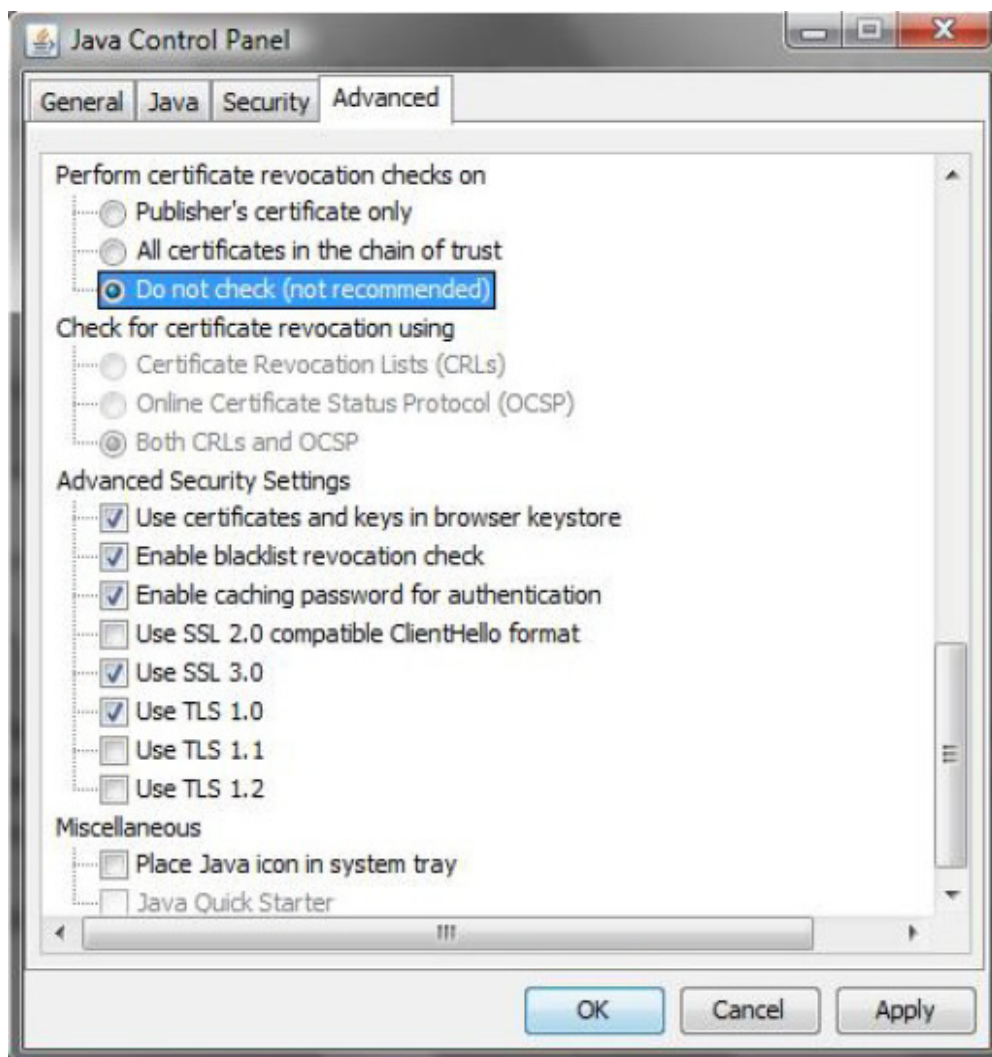


Figure 1.1 Control Panel



## 2.0 MINOR MODEL ENHANCEMENTS

This chapter summarizes model capabilities added to JTLS 4.1.10.0 as a result of implementing minor Engineering Change Proposals (ECPs). No major design related ECPs are delivered with JTLS 4.1.10.0.

### 2.1 JTLS-2015-12417 Requirement To Sort By Squadron Service

#### Summary of Model Change Request

During an exercise, there were both large Air Force and Marine air assets within the database. The various Response Cells, broken out by service, required a method to easily distinguish between their assets. The easiest way to do this was to include a service filter and column on both the Squadron and Air Mission IMT screens.

#### Design Summary

The service was already an existing JODA attribute, so it could be used for both filtering and displaying on the two IMT screens. For the Air Mission IMT screen the service is retrieved via the air mission's home squadron.

### 2.2 JTLS-2015-12422 AAR Tracking Of Missiles

#### Summary of Model Change Request

Ballistic missiles, cruise missiles, and torpedoes interact with other objects via engagements but are not tracked by the AAR system. This means any damage done by them, or intercepts of incoming missiles, is not available. This is regarded as a major deficiency for tracking data during an exercise.

#### Design Summary

A new type of object, missile, was added to the AAR database. This allows the tracking of missiles independently once they are launched from their land, sea, or airborne platforms. In addition to tracking the objects, the damage done by them and intercept of them by air defense and point defense systems are also tracked as engagements.

### 2.3 JTLS-2015-12431 New WHIP Alert Message For Unit Out Of Fuel

#### Summary of Model Change Request

A naval formation stopped moving, because one of the formation ships had run out of fuel. To make it easier to identify this condition, operators requested that the model generate an alert on the WHIP. This would clearly signal that the unit has run out of fuel.

## Design Summary

A new alert was implemented to show when a unit has stopped moving because it has run out of fuel. This alert applies to units on the ground, to naval units, and to ships in a formation. The alert is triggered at the first instance when the model determines that the unit is out of fuel. Like all other alerts, this flag can be turned on or off using the WHIP filters for Alert Messages.

### 2.4 JTLS-2015-12444 Specify External Squawk Modes And Shooter Information

#### Summary of Model Change Request

A capability was added such the air missions created by an external model could specify their squawk modes. This was done primarily for the MUSE simulation of Unmanned Aerial Vehicles. Also, when MUSE fired its on board weapons at a JTLS-owned entity, then the shooter information was not properly passed into the ELS. Including both of these new capabilities as part of JTLS version 4.1 was desired for usage in a near-term future exercise.

#### Design Summary

The version 5.0 code to allow an external model to specify their squawk modes was added to the version 4.1.9 code. Similarly, code was added to pass the identification of the shooter in an external weapon fire into the ELS and then up to the CEP. When an external model launches an air mission, it sent an order to the ELS. This order format was modified to include the preferred squawk modes as data fields on the order.

### 2.5 JTLS-2015-12467 Standardize Loading Of Checkpoints Into DDS

#### Summary of Model Change Request

JTLS checkpoints contain two sets of files, those that contain the initialization data and those that contain run-time data. The checkpoint files that contain the initialization related data follow the same format as the scenario's actual initialization files. This is done so that the checkpoint files can be moved into a scenario directory and loaded into the DDS, permitting Controller database changes made during the course of an exercise to be re-captured in the scenario. The process of loading a checkpoint into the DDS, though well documented, is cumbersome. A more automated, and thus faster, way to handle the process was required at the Balikpapan 2015 exercise because of time constraints at the end of the exercise to accomplish the task.

#### Design Summary

A script was written, checkpointToDds, that allows the Technical Controller to specify the game scenario and checkpoint to be prepared for DDS loading and the DDS scenario name to be used. The script copies the required files from the scenario's checkpoint directory and renames them for the DDS load. During this phase the script also cleans up blank trailing and leading lines from the file which often lead to load issues. The end result of the script is the checkpoint files have

been moved into the \$JDATA/scenario/ directory and are prepared for a DDS load into a database.

## 2.6 JTLS-2015-12469 Allow Browser Access To AAR Data

### Summary of Model Change Request

The Technical Controller required a method to easily and quickly view the contents of the AAR database to help in the investigation of problems. Sqlplus is always available but provides the table data in a format that is not easily decipherable. For example, a column that references another object only lists the index of the object not the name. The columns that represent event types list the event index, necessitating the Tech Controller to consult the aar\_data.xml file to decipher the type of event. Similarly, data for weapon types or supply categories include the index of the weapon or supply and not the name. All of this makes examining the data from the AAR tables using sqlplus a time consuming process. What was desired was a way to view the data using a web browser that would combine the retrieved data with the data description from the aar\_data.xml and scenario vocabulary files in an easily readable format.

### Design Summary

Servlets were added to the AAR Glassfish server to provide HTML access to the AAR database. At the entry level a table is provided with links to the various object, engagement, and detection tables. By following a link the user requests the Glassfish server to provide the records from the table in question. Since the meaning of these columns is well defined the Glassfish server can present it in a readable manner, translating object identifiers into object names for instance.

In addition, the data within the table that refers to an object is presented as a link so that the user can follow the names to retrieve data about individual objects, engagements, or detections. When the link for a single object is followed, the server not only provides the information about that object but retrieves all events associated with the object. Since the meaning of this event data is available within the aar\_data.xml file, the server combines the individual events with their meaning to display the event in a readable format.

Finally, event parameters that represent objects identifiers are again listed as named links to the objects, and parameters which represent an index to a vocabulary item display the actual text versus index of the item. Since both Surface Engagement and Detection Events have a parent-child relationship, where a single surface engagement may result in numerous damage items, when the link for an individual engagement or detection is followed the server provides the associated data from the child table.

In order to ensure easy access to these HTML pages the Apache homepage was modified in the ICP to provide a direct link to this capability of the Glassfish server. This link is written on the Apache homepage whenever the Glassfish server is marked as Active within the ICP. If the Glassfish server is not marked as Active then the Apache home page just shows an empty table cell for this item.





### 3.0 SOFTWARE TROUBLE REPORTS

Software Trouble Reports (STRs) describe software code errors that have been discovered by JTLS users or developers and have been corrected. The following STRs have been identified for this JTLS Maintenance release.

STRs that remain outstanding from previous JTLS versions are listed and described in [Chapter 4.0](#).

#### 3.1 JTLS-2014-12127 DDS - Map Edit IADS Links Targets On Different Sides

*In the DDS "IADS Edit Mode", a user was able to link a target (comm site, sensor site, or SAM/AAA) to a target on a different side. Linkage should be allowed only between targets on the same side. An SVP Error (ERROR 628) catches this problem, but the DDS should be able to catch the situation.*

Users are now not allowed to pick a target that is not on the same side to create an IADS link.

#### 3.2 JTLS-2014-12412 Function XML.DESTROY.ELEMENT Changed To Routine

*Simsript function XML.DESTROY.ELEMENT should be changed to a routine to improve system performance.*

Function XML.DESTROY.ELEMENT was changed to Routine SML.DESTROY.ELEMENT in all Simsript code. There is no explicit user testing that can be performed on this code change. No user features have been changed or added.

#### 3.3 JTLS-2015-12413 JOBE Crash When Loading Saved Scenario

*The JOBE was trying to read antenna height as a byte, but it was saved by the JOBE as a float. The JINN saves it as a long so the error only occurred when starting the JOBE after saving the scenario and exiting and restarting the JOBE.*

The JOBE read code was changed to handle the antenna height as a float.

#### 3.4 JTLS-2015-12414 Formation Off Board Move Crash

*The model crashed when attempting to find a suitable location for a naval vessel during an off-board formation move. None of the code to search for a suitable location was prepared for off-board locations.*

The code to find a suitable hex for the naval vessel was modified to protect against proposed locations that are off the game board. If a proposed location is off the game board it is considered a suitable location to place the vessel, and it is placed there.

### 3.5 JTLS-2015-12415 Controller Not Informed Of TPFDD Modification

*When a Controller sends a Manage TPFDD order to create or modify a unit's TPFDD, a message is sent to the Force Side commander's WHIP with the details of the TPFDD, but no message is sent to the Controller that submitted the order. This makes it hard for the Controller to verify that the change has happened.*

The code was modified to inform both the Controller that sent the order and the Force Side Commander's WHIP of the change/creation of the unit's TPFDD.

### 3.6 JTLS-2015-12416 Range Rings Not Updated For Assaulted Units

*The CEP bases the direct fire and indirect fire ranges of a unit on the ranges of the various manned systems the unit has. When a unit is embarked on a formation it does not have any manned systems and therefore its ranges are set to zero. Once a unit is assaulted or magic moved onto shore its systems become manned. However, this information was not being sent to the JODA, so such a unit would still display zero radius range rings.*

If a unit's manned systems has changed and the system involved is a direct or indirect attritor, the CEP now re-calculates the range rings of the unit while updating the combat system information to the JODA.

### 3.7 JTLS-2015-12418 Active Row On WHIP Sitrep Not Meaningful

*On both the Air Mission and Emitter WHIP Situation Reports (SitReps) there is a row with the title "Active". This designates whether the CEP has marked the is\_active flag for the item or not. This flag is of great importance to the system in terms of when items should be displayed or manageable, but is not something that your normal WHIP operator needs to know, or would be able to use. Therefore, to avoid confusion and questions this row of the two SitReps should be removed.*

The data file that defines which defines the data collection and presentation of WHIP SitReps was modified to eliminate the is\_active flag.

### 3.8 JTLS-2015-12419 Can Not Get Interim Mission Report For Airlift

*An airlift mission which was loading a unit at a remote airbase had the runway cut. This caused the mission to be stuck on the ground at the remote airbase. The WHIP operator was unable to get a Mission Report for the unit to gather details about the situation.*

For an unknown reason airlift and transport missions were not permitted in the order for the interim Mission Report. This may have just been an oversight when the order was created. The mission types have been added to the data file as valid types and the reports can now be generated.

### 3.9 JTLS-2015-12420 Error In Data Check Of Mandatory Units Of Measure

*The Scenario Verification Program (SVP) produced unexplained errors in the Unit of Measure (UOM) data. The resulting errors indicated that some of the mandatory UOM data were missing. The errors were found in both the user's scenario and in the standard JTLS scenario databases.*

Close inspection of the UOM data showed that the mandatory data were present as required. The scenario verification checked that there was at least one entry per UOM category. These categories included distance, speed, dry weight, wet weight, and so on.

The SVP code included an unnecessary check to make sure the long name for the conversion record matched a specific text string for the DRY\_WEIGHT and WET\_WEIGHT categories. Specifically, the SVP expected to find the string "DRY\_WET" for those two types of UOM. This extra limitation was removed for matching the long names. No further errors occur when verifying the data.

### 3.10 JTLS-2015-12421 Can Not Load Graphic Symbols Into DDS

*At the end of an exercise, tech control attempted to load the final checkpoint into the DDS to capture all the parametric data and order of battle changes from the exercise. We were unable to successfully use the checkpoint graphic symbol file. After investigation it was discovered that the DDS requires two non-adjacent pieces of data from this file, and therefore expects each record to be precisely formatted by column numbers. The CEP write of the checkpoint did not adhere to these requirements.*

The CEP checkpoint write was modified to format the output data to match the columns expected by the DDS symbol.ctl control file.

### 3.11 JTLS-2015-12423 Split Air Mission Crash Writing Checkpoint

*The CEP crashed for a reference to a destroyed entity while writing out the checkpoint data for an air mission's ordered load. The ordered load can be either a database defined load or a player specified load. In the case of a database defined load the checkpoint only writes out the name of the load. However, this crash was caused by a player specified load, which should be written out in its entirety, but the load no longer existed.*

The problem was tracked back to the creation of the air mission which was due to a Split Mission order for an existing mission. This broke 2 aircraft out of a mission of originally 4 aircraft and set them up as their own independent air mission. During the course of this logic the pointer for the ordered load was shared between the missions, thus both air missions pointed to the same memory location for the ordered load.

If the ordered load was a database specified load this would not have mattered since we never destroy such loads. But in this case, the original air mission had a player specified load, which when the first air mission landed was destroyed. The split mission was still flying and a

checkpoint was taken, which attempted to access the memory of the now destroyed load resulting in the crash.

The fix was simply to copy the ordered load when it is not a database defined load while splitting the air missions.

### 3.12 JTLS-2015-12424 Crash On Repair Of Unowned Target

*The shadow game crashed for the repair of an unowned, but associated, air defense target. The crash was due to an attempt to access the owning unit in case it was the Debug Unit or Debug Ship. These Debug entities are set by the Tech Controller and are used only for deep code investigation.*

The code was modified to check if the target was the Debug Target, and to ensure that a unit had been specified before attempting to access it to compare against the Debug Unit or Debug Ship. The addition of the Debug Target was not related to the crash but was added since we were in the routine and this permits greater flexibility if we need to perform code investigation.

### 3.13 JTLS-2015-12425 Destroyed HRU Turning Emitter Off

*The shadow game crashed when an Emitter On/Off event occurred for an HRU that had been destroyed. The HRU had previously been told to turn on its emitter for a period of 24 hours. This resulted in the emitter being turned on, and an event to turn the emitter off being scheduled. However, the HRU was destroyed before the event happened resulting in a crash when the event did happen and attempted to find the HRU.*

The code that handles the Emitter On/Off event for HRUs was modified so catch the situation where the HRU can not be found. It was decided to catch this situation rather than attempting to destroy the event when the HRU is destroyed because it results in easier to manage code. This behavior also mimics the way air missions are handled for the same situation.

### 3.14 JTLS-2015-12426 Too Many Objects In Air Mission Information Set

*The main game crashed when coming back up from a checkpoint and run-ahead because there were too many objects in the air mission's Information Set.*

*The Information Set is a self-linked list of items that have been detected. The model keeps track of the number in the set, the first object, and the last object in the set. On a checkpoint the number in the set is written out, and then data on each item is written. For the read, the number of items in the set is read, and then that many data items are read and filed in the set.*

*However, within Simscript the variable that tracks the number in the set is automatically assigned as a short integer. If the number of objects ever exceeds 65,536 then this counter will wrap back to zero. That is what happened in this instance. The number in the set was listed as 13,000+ items, when in fact the number written out was 78,536+ (65,536 + 13,000+). This caused the read to complete prematurely and attempt to read the next piece of information.*

The code was modified to use an explicitly defined full integer as the counter instead of using the default counter provided by Simsript. This will count well over 4 billion items in the set.

### 3.15 JTLS-2015-12427 Unable To Deploy Alert At Another Base

*The ATO translator always creates ALERT missions at their home base even though the ATO called for a mission from base Alpha to go on alert at base Bravo.*

The routine that assigns the ALERT location always assumed the alert missions went on alert at the location specified on the ATO record, and the ATO-T verify function took the alert location from the DEPLOY field instead of the ALERT.UNIT field. Both routines were modified and tested under exercise conditions and all problems have been verified as corrected. Mission now can leave one base to go on alert at another,

### 3.16 JTLS-2015-12428 AIRLIFT/AIRDROP Doesn't Follow Transit Path

*The air mission failed to follow the designated transit path between the pickup and drop off locations for a AIRLIFT/AIRDROP mission.*

The code was not looking at the correct part of the order to read and process the transit route information. The code was modified and retested successfully.

### 3.17 JTLS-2015-12429 Can't Add Tasks To INSERT/EXTRACT Missions

*The INSERT/EXTRACT air mission does not appear to accept any air mission changes to its assigned task list.*

The code was looking for the new instruction list on the wrong part of the order. Once this was fixed two additional problems were identified and corrected. First, depending on what type of order was creating the task list, it had to be read from different locations. Second, during testing it was identified that the locations specified on the air movement report for the INSERT/EXTRACT mission were incorrect. The later was a simple mistake of mixing the pickup coordinates with the drop off coordinates. All problems were identified, corrected, and retested.

### 3.18 JTLS-2015-12430 Broadcast Jammer Turning On Without Jammed Unit

*The CEP crashed when a unit that owned an operating mobile jammer target moved. As part of the move sequence, the jammer was turned off before the move, but maintained a default status of Turned On. When the move was complete the jammer was automatically turned on, as it should have been, but did not have the pointer to the object it was supposed to jam.*

The code which turned off the jammer always cleared the data on which side, faction, or unit was being jammed. This was modified so that the data is only cleared when the default status is Turned Off. Thus, mobile jammers will now be able to be packed up, moved, and set up again without crashing the CEP.

### 3.19 JTLS-2015-12432 SIP Crash Reading Real Value Antenna Height

*The DDS allows a real value to be entered for the antenna height of prototype-owned sensor targets. However, the SIP and CEP expect an integer. If a real value is entered, both programs will crash on the read of the data due to a mismatch in the variable type. Furthermore, the Data Requirement Manual specifies a range of 0.0 or greater indicating that a real number is an acceptable entry.*

The CEP and SIP code was modified to read the value in as a real value and convert it into an integer. This is viewed as a modest patch rather than a proper fix. The proper fix, which will ensure that the two programs are in synch with the DDS will be delivered as part of JTLS 5.0. The DRM was modified to indicate the value should be an integer.

### 3.20 JTLS-2015-12433 Temporary Object Data Not Cleared From CEP

*A data inconsistency was found during JTLS 5.0 development. The model used a temporary set to hold certain groups of object data. In this case, a set held all of the units that are located near another object. In one case, the model was attempting to determine if this target was protected by one or more units. In another case, the model was trying to identify which units near a squadron could provide supplies to launch an air mission. After these tasks were done, the model did not clear out the set of surrounding objects. This could result in having extraneous data appearing in a subsequent use of that same temporary set.*

At the end of the appropriate routines, a clear of the surrounding object set is done. This prevents any future errors associated with using extraneous objects that were left over in the set.

### 3.21 JTLS-2015-12434 Emitters And Weapons Not Initialized On JODA Bounce

*If a JODA was stopped and restarted, sensors, jammers, and weapons that were associated with air missions did not get properly initialized with the JODA. The JODA would actually throw errors specifying that updates for unknown WEAPON\_LOAD or EMITTER\_LOAD object were received. If the player looked at a WHIP IMT screen of an air mission, then accessed the Emitter and Weapon screens for the air mission, these additional screens would have no data records.*

The exact problem was that when a weapon load or emitter load object was initialized with the JODA, the object was flagged as being known to the JODA. Since this flag was not saved on a checkpoint whenever the model restarted the objects would be properly initialized with the JODA. However, if the JODA bounced once the model reconnected and sent a new download, the model would send updates for these objects because they were flagged as already being known to the JODA. The JODA would receive the update, not have any initialization for the object, and would therefore throw out the update. The fix was to clear these flags when performing the download of the air mission object and all its associated records.

### 3.22 JTLS-2015-12435 Errors When Issuing Supplies To Units

*Errors were found in the code which issues supplies to units. This code was executed when a unit arrived in the game or was reactivated through Controller action. At that time, the unit received a basic load of supplies from another unit. The code was incorrectly identifying the needed supply categories. In some cases, the issuing unit would never provide some supply categories even though they were needed by the receiving unit.*

The code to issue the basic load of supplies was only checking for available supplies in the issuing unit instead of first looking to see if the receiving unit needed the supplies. This logic was corrected such that only needed supplies are provided. This code also included an array of data that was not cleared at the end of the routine. This potential memory leak was also repaired.

### 3.23 JTLS-2015-12436 SSM Targets Not Usable After Repair

*Stationary SSM targets had been destroyed by enemy action. Upon automatic repair their status was switched to Turned On instead of Prepared. When the unit was sent a Fire Missile order, the resultant Fire Mission entered a state of Waiting and remained in that state.*

*The problem was that the target status was Turned On instead of Prepared. An SSM target should only ever have a status of Prepared, Not Prepared, or Destroyed. The Fire Missile code explicitly looks for an SSM target that is Prepared. The player could not get the SSM target to switched to Prepared with a Launcher Setup or because it was a stationary target, and was thus assumed to always be Prepared.*

It was discovered that this issue would have happened no matter how the SSM target was destroyed or repaired. Both normal game play attrition and Controller actions would have resulted in the same erroneous status of Turned On, rather than Prepared.

A new routine to set the target's default status was written, mainly based on existing code for when a target is first created. This new routine is now called when a target is first created, and whenever a target switches from 0% capable. It properly sets the default status for the target. Other code modifications then set the status of the target based on the default status if the target is changing strength from 0% capable. The effects of these changes now assign the target the proper status of Prepared when it is repaired whether by Controller action or automatic repair.

### 3.24 JTLS-2015-12437 Attacking Mission Not Provided On Air-Air Engagement

*The AAR Client collects and stores information on events of major importance to objects within the AAR Database. One such event is an Air-Air Engagement, which is registered within the AAR Database for the mission firing the weapons and also for the mission being fired upon. The data for the mission being fired upon does not include the link to the attacking mission, which it should.*

The receiver number of the attacker mission was added to the Air-Air Engagement event for the defending mission.

### 3.25 JTLS-2015-12438 CEP Crash Due To No SHIP Target Cat Entered On Any TTG

*The CEP crashed during an ARMED RECCE air mission. The orbit point of the mission was over water and no Target Type List was specified. While attempting to gather all possible water targets (ships) amongst all Target Type Groups, the CEP crashed because no water targets existed in the user's database. This database problem should have been prevented with an SVP Error Message.*

A new SVP Error 318 was created that checks every Target Type Group (TTG) Descriptor Set in the Database. During the check, at least one TTG must include a water type target (target category: SHIP). A new error check was placed in the CEP Routine ORDER.SET.TTG to prevent the removal of the last SHIP Category item amongst all TTGs.

### 3.26 JTLS-2015-12439 Checkpoint Load Fails When Next Report Time In Minutes

*The Controller can change the FS.NEXT.REPORT.TIME value in the model after game start. If this value is set to any value less than an hour, the related checkpoint data load into the Oracle database will fail because of the existing check constraint's lower limit setting.*

The lower limit of the related check constraint in the Oracle database schema for the force\_side table was changed so that a next report time value in minutes will be allowed. If a value of 0.0 is entered, then this will mean that the first periodic report will be generated at the game start. When a JTLS scenario is re-loaded into the Oracle database, the related check constraint of the force side table will be automatically created with the new lower limit value.

### 3.27 JTLS-2015-12440 Techtool Not Highlighting Searches With "Or" Components

*The techtool program allows the message files and order strings for a scenario to be searched and examined for a matching string. The search criteria recognizes two conjunctions: "and/or". When a specific message or order is displayed in the dialog window every bit of text that matches an element of the conjunction should be highlighted in red. This is happening for "and" conjunctions but not for "or" conjunctions.*

The code that performed the highlighting was breaking the search string into "and" components and finding the matches for each component. It should have first broken it into "or" components, and then each "or" into "and" components, but it was not. This has been fixed.

### 3.28 JTLS-2015-12441 Inconsistent ELS Combat System Counts For Units

*Some large aggregate units in the ELS had entity counts which differed from the expected combat system numbers as seen in the CEP. The differences were mainly associated with unavailable crew entities and the vehicles which the crew were manning.*



Code problems were identified in areas where the combat system entities were manned or unmanned and how the associated crew were assigned. Significant changes were made in the manipulation of systems in the aggregate units. The code now properly reflects the required consistency between the ELS and the CEP. Additional debugging statements were added, so detailed information for specific objects can be requested using the debug-object command line function.

### 3.29 JTLS-2015-12442 ELS Performance Issue When Large Units Arrive

*The ELS ran very inefficiently when a large unit arrived in the game. This TPFDD arrival caused the ELS to spend an excessive amount of time placing the new entities in the unit.*

The ELS used sets to hold the combat system entities in a unit. When a large unit arrived, a large number (tens of thousands) of entities were placed in a working set. The ELS had to search through this set to find the appropriate types of systems of the proper priorities. This search algorithm was highly inefficient.

Improvements were made to the code and now the entities are rapidly processed. Large units still require a few moments to process, but this is an acceptable level as compared to the previous iteration which required several minutes for units with ten thousand or more entities.

### 3.30 JTLS-2015-12443 Unable To Search For Target Elements In EODA Console

*The developer was using a console session to the EODA to study the properties of target elements in the ELS. The user was unable to search for a specific target element in this manner.*

The search capabilities in the EODA use the name of the object. When a search is done, the EODA returns the first matched object. In this case, the target elements were never returned because a combat system entity was found first with the same leading characters in the name. The names of the target elements were changed such that they now begin with the element number and a hyphen. This differentiates the names from the entities so a successful search on the EODA can be accomplished.

### 3.31 JTLS-2015-12445 ELS Issues During Restart From Checkpoint

*When the CEP restarts from a checkpoint, the ELS will automatically restart from the same checkpoint number. However, the CEP can advance in time without simultaneously running the ELS. If the CEP was restarted from a checkpoint and then advanced for a period of time, then when the ELS is later restarted, the ELS checkpoint data will no longer reflect the current state of the objects in the game. If some of the expected objects in the checkpoint are no longer in the game, then this will cause an ELS crash.*

*For example, the CEP is restarted at checkpoint 0004 at a game time of 8 hours, it is then run forward to 9 hours, The ELS is then restarted from checkpoint 0004. There was at least one convoy running at 8 hours and it was saved in checkpoint 0004. This convoy had finished before*

9 hours, so when the ELS restarted from checkpoint 0004, the expected object no longer existed.

A check was added to verify a consistency in time when the ELS processes a checkpoint restart. If the time of the checkpoint was within five minutes of the current game time, then the ELS will attempt to restart from the checkpoint. If the time difference was more than five minutes, then the ELS proceeds to ignore the checkpoint data and just starts from the current time.

### 3.32 JTLS-2015-12446 Some Orders With Silent Fields Could Not Be Recalled

*If silent fields were not the last fields defined in an order, that order could not be recalled. The only known order that had this issue is SETG (Set Target Parameters).*

The order panel was ignoring the silent fields when making the fields. However, when it filled a field name to index lookup, it incorrectly included the silent fields, causing the indices to be off after the first silent field. The WHIP now completely ignores silent fields.

### 3.33 JTLS-2015-12447 OPM Links To Logistics Chain Not Working

*When visiting a unit page within the OPM, a link exists to view the support hierarchy. Clicking this link takes the user to the support unit hierarchy table, but not to the specific unit that was desired. The link was designed to do the latter, but is not working properly.*

The anchor points, which tell the link exactly where in a page it should go, for the individual units within the unit logistics hierarchy did not exist. These anchors were added and the problem is solved.

### 3.34 JTLS-2015-12448 Invalid XML When Order Contains Illegal Character

*When an order contains an illegal character, the OMA, via the OVT Library, sends a response to the WHIP stating that there is an illegal character and specifying the list of illegal characters. This response is formatted in XML. However, the OVT Library has added both a line-feed and vertical-tab as illegal characters and both of them are violations of well-formatted XML. This results in the order being rejected, a traceback appear in the WHIP debug console, and no error message presented to the WHIP user.*

When formatting the error response the OVT Library now converts the line-feed and vertical-tab characters into their respective XML escape sequences.

### 3.35 JTLS-2015-12449 Inactive WHIPS Can Still Be Logged In

*The ICP creates a whip-logins.xml file for the Synapse which lists all the valid WHIP names. The Synapse uses this list, along with its knowledge of which WHIPs are already logged in, to determine if a new login is allowed or not. However, within the ICP the Technical Controller can mark a WHIP as active or not. If inactive, the WHIP still appears within the Synapse list of valid WHIPs and can still be logged on.*

The ICP code was modified so that only WHIPs whose active flag is set are added to the whip-logins.xml file. This prevents the Synapse from considering them as valid logins.

### 3.36 JTLS-2015-12450 Techtool ROE Vocabulary Out Of Range

*The Techtool program was used to examine an ROE order that had been sent to the model. When attempting to render the ROE order into a readable format, the Techtool threw an exception/trace for an unknown vocabulary item. The item in question was the force side against which the ROE order was sent.*

In order to permit vocabulary indices to be listed with their associated text, the Techtool was reading the dynamic vocabulary files for every side. This was both unnecessary and results in multiple conversions for vocabulary groups (one for each side and the Controller). The exception was caused because the first group found to convert the against ROE force side index was the dynamic vocabulary group for that force side (which of course does not list itself as a valid against side). The solution was to only load the dynamic vocabulary file for the Controller.

### 3.37 JTLS-2015-12451 Unable To Set HRU Boat Type

*Previously an HRU always consulted its HUP to determine what type of small boat it had. However, as part of JTLS 4.1 HRUs can be created with reduced assets, including no small boats even when the HUP specifies one. Therefore, the HRU now holds onto the type of small boat it uses, which will either match the HUP Organic Boat Type or will be NONE. However, there is no way for the Controller to change the small boat type used by an HRU.*

*For instance, if the HUP has no Organic Boat Type specified and the Controller assigns one, this only affects newly created HRUS and not existing ones.*

The HUP modification code was altered so that when the Controller changes the Organic Boat Type for a HUP all HRUs of that HUP are checked. If the HRUs use the old Organic Boat Type from the HUP then they are modified to use the new Organic Boat Type as their small boat.

### 3.38 JTLS-2015-12452 REAL Values In Utilities Not Filled When Row Clicked

*When the user would click on a row in the table on an order utility panel, any REAL values were not filled in the utility fields.*

The utility panel was not processing the setting of the value if the data type was a java Double object. The code was modified to process all Numbers.

### 3.39 JTLS-2015-12453 WHIP Unable To Open SITREPs And IMTs

*When a user clicked on a unit, the SITREP screen did not show the unit's data. When a user attempted to open an IMT, it contained no data. Game time stopped updating on the WHIP. Closing and restarting the WHIP solved the issue.*

All JxsrConnections share a single Timer. If there was an OutOfMemoryError while the JxsrConnection was downloading, the Timer exited and all JxsrConnections stopped requesting updates. Attempting to open the IMT or SITREP failed since the Timer was shutdown, so the new connection could not be started.

The JxsrConnection was modified so that in the case of an OutOfMemoryError, the connection resets, but does not exit. In the case of any other Error, the user is notified to pass the shown debug information to the developers and the Timer is allowed to exit. If an attempt is made to open an IMT or SITREP when the Timer is shutdown, a new Timer is started and all connections are reset. A connection monitor was added to detect if the Timer has stopped and not been recreated. If the Timer is not responsive for 2 minutes, it is recreated and all connections are reset.

#### 3.40 JTLS-2015-12456 Correct LC2IS NATO Messages

*During the NATO interoperability test, CWIX, some issues were uncovered with the ENESITREP and OWNSITREP messages.*

No code changes were required for this correction. These formatting errors were corrected and the messages passed the test.

#### 3.41 JTLS-2015-12457 Unit's Supply Not Updated To JODA When Decrementated

*One of the routines which decrements supplies from a unit did not properly update the JODA with the new values once the supplies were decremented.*

An IF check was improperly coded to decide whether the supplies values for the unit should or should not be updated. As the old code was written, the check would never succeed. The check was corrected.

#### 3.42 JTLS-2015-12459 Controller Can Set Unit CQR Rating To Zero

*Every unit must have a Communication Quality Rating (CQR). This database parameter is used to determine how long it takes the unit to communicate with other units. It should never be zero. The Controller could send an order that would set the CQR for a unit to zero.*

The problem was in the definition of the order. The order panel was changed and the Controller can no longer set this unit parameter to zero.

#### 3.43 JTLS-2015-12460 No Rejection Message For Order Tenant Activity

*The order for managing Tenant Activity at an airbase is not currently a supported capability in JTLS. Since no action is taken, submitting the order should have resulted in a rejection message. No such message was returned to the player.*

The tenant activity code was modified such that it always generates a rejection message. No further action is taken as this is not a supported capability.

#### 3.44 JTLS-2015-12461 Showing Faction Attributes With Merged Faction Crash

*The Controller's Faction Attribute Change order, which permits the Controller to request info on a faction as well as access a faction, extracts the country code from the faction and then checks if the faction exists. In the event that the faction does not exist, this sequence of events will result in a model crash.*

The sequence of events was reversed so that the model now checks if the faction exists before accessing the country code. Factions can be destroyed by merging two factions, with the surviving faction remaining. Therefore, to actually get this crash to happen the user would have to send a Faction Merge order, and then before the sending WHIP was informed of the faction being destroyed, send the Faction Attribute Change order. The timing on this is possible, but unlikely in the normal course of operations. However, the situation can easily be accomplished if the orders are sent as part of a group.

#### 3.45 JTLS-2015-12462 National Boundaries Should Be Objects On Order Panels

*When using the WHIP to send orders regarding an existing National Boundary, such as Boundary Over-ride List for ROE settings, the user must type in the name of the National Boundary. These objects are known to the JXSR and therefore the fields should be specified as Generic Object fields allowing the JXSR to provide a list of allowed entries and the WHIP user to select one from the list.*

The Manage National Boundary order, Boundary Override List utility, and the Boundary Rules List utility were all modified to specify the boundary field as a graphic object with a type of National Boundary. For the Manage National Boundary order, which used the same field for creating and deleting the boundary, this required the addition of a new field. For creation of a boundary the user must still type in a name, but on deletion of a boundary the user selects from the list of existing boundaries.

#### 3.46 JTLS-2015-12463 Glassfish Hosts Not Switched In ICP

*When using the ICP, the Tech Controller has the ability to switch the hosts of all the models, the Apache, the JODA, and all JODA clients with a single menu selection of Set Server Hosts. This action does not, but should, switch the execution host of the Glassfish server.*

The code was modified to change both the execution host and the URL host of the Glassfish server when the menu option is selected. This is consistent with what is done with the Apache server.



## 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 CEP: 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 CEP: 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 CEP: 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 CEP: 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-0973 CEP: 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.

#### 4.6 JTLS-0974 CEP: 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.

#### 4.7 JTLS-1384 Documentation: 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.

#### 4.8 JTLS-2014-12093 CEP - HRU Reports Do Not Include Detected HRUs

Periodically, an HRU will report what it has seen. It reports units moving into and out of the area. The data is collected when it detects HRUs moving into and out of the area, but this information is not included in the generated report. This should be done in the routine GENERATE HRU REPORT.

#### 4.9 JTLS-2014-12094 DDS/SVPR - UOM Flicker

It appears that the UOM periodically changes and then changes back in the SVPR, but it doesn't stay changed long enough to see what it changes to.

#### 4.10 JTLS-2014-12096 APACHE/SYNAPSE Cannot Run On Same CentOS 6 Machine

When the Synapse and Apache are run on the same instance of CentOS 6 or Red Hat 6 on the same machine, the Synapse will back up. Running the Synapse and Apache on separate virtual machines or two different physical machine works correctly. The JTLS Development Team have continue to consider this a high priority item.



#### 4.11 JTLS-2014-12098 CEP - Moved Units Do Not Remove CS From Shelters

Units moved out of a hex do not remove combat systems from shelters.

#### 4.12 JTLS-2014-12099 SVPR - Ensure DDS Sending SVP Info To Debug

The SVP crashed while running the SVP from the SVPR, but the only sign there was a problem was that nothing was happening. The output of what was being read by the SIP was hung, without any information in the debug console or other information.

#### 4.13 JTLS-2014-12101 SVPR - Auto-Fix Not Selecting Affected Supply Category

When auto-selecting a TUP/SUP supply category to fix, the SVPR always opens the corresponding column in the first supply category, rather than the affected supply category.

#### 4.14 JTLS-2014-12102 DDS - SVPR Warning 1223 Empty Table

When clicking on the solution for Warning 1223 in the SVPR to bring up the CSP\_CS table, an empty table is brought up instead.

#### 4.15 JTLS-2014-12103 DDS - No Change For Default UOM For Basic Categories

Since the CEP is coded to expect a default UOM of the raw data for each basic category. The user should not be able to delete or edit these UOM.

#### 4.16 JTLS-2014-12104 WHIP - Issues On 32 Bit Machines

WHIPs being run on a 32 bit Windows machine were using over 1 gigabyte of memory each. In addition, the WHIPs would often lock up or the Map would not respond to Sitreps, route requests, and so on. This problem will be corrected with the release of JTLS 5.0.

#### 4.17 JTLS-2014-12106 AAR - Exception When Translating Report

When a report is rendered in the TRIPP, the report is rendered in English even if another language is selected. Two FileNotFoundExceptions are found in the GlassFish log, indicating that the language properties and default language properties are not found.

#### 4.18 JTLS-2014-12107 WSM - Apache Status Fails When Firewall Blocks HTTP

The WSM always uses HTTP to get the Apache status even when running with HTTPS. Both ports are open on the server, so this fails when the firewall blocks HTTP.

#### 4.19 JTLS-2014-12108 CEP - BDA Reports Inaccurate On Sheltered CS Kills

When air missions attacked airbase targets sheltered in barracks shelters and killed combat systems, the BDA Report for the attacking side showed grossly inflated numbers of combat

systems killed. The BDA report is much more accurate when killing systems by attacking the unit or a location. The false numbers only happen when killing an occupied shelter.

#### 4.20 JTLS-2014-12110 DDS - Printing Multiple DDS Reports Needs Correction

One can print multiple DDS Reports with one print command. This is done by selecting the reports individually. With more than one highlighted, a single print command can be used. However, in the resulting print, the reports run together - the second report starts on the next line after the previous report ended. Also, it adds a line of text that looks like the last line of the first report. This added line is actually the title of the second report, left justified and inserted in a smaller font. You see the title of the second report twice, and it looks unprofessional.

#### 4.21 JTLS-2014-12112 DDS - Oracle Error Display Dialog

A dialog currently exists in the DDS that pops up when an error condition happens. This dialog should be used to display Oracle errors as well, given that the user sees nothing happening when a command is executed and it fails for one reason or another and is confusing them. When no action is displayed, the interpretation is that the DDS is failing and not the database layer.

#### 4.22 JTLS-2014-12114 DDS - Add New Validator To Check For "NotOffspring"

Current validators for fields like "HHQ" cannot verify that the assigned unit is not an "offspring" of the unit that is being modified. Even though this type of mistake can be caught by SVP eventually, it still can have ill effect to components like Command Hierarchy once the data committed to the database. It needs to be caught and prevented.

#### 4.23 JTLS-2014-12116 DDS - Railroad Name Remains On Map After Deletion

If a user deletes a Railroad Network from the Map, the Name remains displayed. It stays even if Railroad Edit Mode is exited and reentered. Stopping and restarting the DDS is necessary to remove the Railroad Network Name from the Map.

#### 4.24 JTLS-2014-12117 DDS - Map Create Railroad Network Works Deceptively

When you select the "New Railroad" button in the DDS, the cursor becomes a "pointing finger," allowing you to select a location on the map to place the first Railroad node. However, after you place the first node, the cursor reverts to its default appearance. One expects that selecting a new location will place the next node there, but no matter what location you select, the second node is always created on the hex due east of the first node.

#### 4.25 JTLS-2014-12119 DDS - Columns Data From Another Table Not Updated

Some tables have columns whose data is retrieved using a "Select" statement that queries data from another database table (e.g. the formation column in the naval unit screen). For these columns, when DDS does a flashback version query for the updates, Oracle does not report any

update if the actual update occurs in the other table. Therefore, these columns' data are not updated in the DDS.

#### 4.26 JTLS-2014-12121 DDS - Drag/Drop Problems Modifying Rail Networks

When clicking and dragging a Node or an Arc, one has to be careful to make sure the correct item is selected. One can, for example, drag an arc completely away from its endpoint nodes. In addition, Java exceptions can occur when the correct item is not selected.

#### 4.27 JTLS-2014-12122 DDS - No Spaces in Long Name After Hierarchy DeepCopy

A user cannot enter spaces in the long name replacement string after a Hierarchy Deep Copy, although spaces are allowed in long names.

#### 4.28 JTLS-2014-12123 DDS - Add UIC Replacement Option In Hierarchy DeepCopy

The short name replacement string should be added to the UIC, so that hand-editing UICs after a Hierarchy DeepCopy is not necessary.

#### 4.29 JTLS-2014-12125 DDS - Editing Location Fields XX-60-60.ON Can Be Entered

It is possible to enter a location such as 10-60-60.ON in a location field in the DDS, The location field text formatting functions needs to be improved.

#### 4.30 JTLS-2014-12126 AAR - Aircraft Kill Summary Report Time Format

AAR reports can contain times, but these are currently being generated using the url time format, which is difficult to read by the end user. These times need to be output in a more user friendly format.

#### 4.31 JTLS-2014-12131 DDS - Add Report Title To Report

All DDS Reports should have titles. If a user prints out several reports, it is difficult to know what each report contains. The title should help with this.

#### 4.32 JTLS-2014-12132 DDS - Confusing Report Popup Menu Item

The bottom of the report browser popup menu has part of the stylesheet name (e.g., 01-dcr). This is confusing.

#### 4.33 JTLS-2014-12133 DDS - Reports Order Help Text Needs Improvement

DDS report orders help text needs improvement.

#### 4.34 JTLS-2014-12136 DDS - TMU Different Algorithms For Polygons, Areas

The DDS TMU Map Polygon algorithm is different from the TMU Area algorithm. In other words, drawing a rectangular Polygon does not result in the same area having its attributes changed as does drawing a rectangular Area of exactly the same size.

#### 4.35 JTLS-2014-12140 DDS - Flight Paths Difficult To See

Flight Paths are difficult to see because the default color is white. The color should be changed to Cyan. Cyan is currently the color used to display OPAREAs, so the default OPAREA color should be changed to Orange. This change should be made in both the DDS and the WHIP for consistency.

#### 4.36 JTLS-2014-12143 DDS - REPORTS - Rename the MUSE report to DIS.

The MUSE Report should be renamed to the DIS (Distributed Interactive Simulation) Report. The report is no longer just used for MUSE. There are several other models that need to know the current set of DIS codes in a specific scenario.

#### 4.37 JTLS-2014-12144 DDS - Exception While Opening TUP From SVPR

An exception occurs when opening a TUP from the SVPR. The exact circumstances have still not been identified, and so a correction could not be implemented.

#### 4.38 JTLS-2014-12145 DDS - Exception Logged With No Stack Trace

A ClassCastException in the DDS was logged, but no Stack Trace was saved. The exact circumstances have still not been identified, and so a correction could not be implemented.

#### 4.39 JTLS-2014-12146 DDS - Cannot Delete Illogical Pipeline Arc From Map

You cannot delete an illogical Pipeline arc from the Map. An illogical Arc is one that would create an illogical flow. An example of an illogical flow would be one connecting nodes: A to B to C to A. The Map will not let you create Arc C to A. But you can create that illogical arc in the Pipeline Arc table. IF you do so, the arc will show up on the Map and exist in the arc table, and you cannot delete it from the Map. You must use the table to delete it.

#### 4.40 JTLS-2014-12147 DDS - Flight Path With Min Altitude Higher Than Max

When you create a Flight Path between two Nodes, you are asked to assign a Minimum and a Maximum altitude along the path. You can assign a Minimum that is greater than the Maximum. You cannot do this in the Table, but the Map allows it.

#### 4.41 JTLS-2014-12148 DDS History Table Missing Record Identifier

The DDS keeps track of when data is changed in a table history table. If an attribute of a child table is changed, the history table does not list exactly what is changed. For example, assume

you change the quantity of a CL.V supply category with which an SSA Target. This supply information is in a child table for the SSA target type table. The problem is that this one change generates a single history record which properly indicates the old value and the new value, but does not list what SSA SC category record was changed.

#### 4.42 JTLS-2014-12264 CEP - Naval Mine Damage Documentation Obsolete

The discussion of Naval Mine Damage in the Analyst Guide is obsolete. It does not address the use of lanes nor the current variables used in the determination of encounter and damage.

#### 4.43 JTLS-2014-12265 DDS - Need "Not In" Validator For Composite Unique Key

Currently, the "not in" validator has limited capability, meaning it can only check for single column. But many database tables have composite unique keys, which can take up to N number of columns. Therefore to check their uniqueness, the current "notin" validator is not sufficient. It needs to be expanded or a new validator needs to be introduced that can check uniqueness for multiple columns. This problem will be corrected in JTLS 5.0.

#### 4.44 JTLS-2014-12266 WSM - Reloading Database While Starting Service Lockup

If the ICP database is reloaded while a service is starting, the WSM appears to freeze for a period of time.

#### 4.45 JTLS-2014-12270 WHIP - Message Browser Moves With New Message

If the user selects a message and then scrolls down, the Message Browser jumps to the selected message when the next message arrives.

#### 4.46 JTLS-2014-12272 WHIP - Incorrect Behavior Selecting Multiple Messages

If a number of messages are selected using the shift key in the WHIP Message Browser, and an attempt is made to select more, the second batch begins with the last message selected in the first batch, thus excluding many messages from the first batch.

#### 4.47 JTLS-2014-12275 DDS - Mouse Panning Documentation Needed

New documentation on how to use the Mouse Panning map mode needs to be added to the DDS User Guide.

#### 4.48 JTLS-2014-12277 DDS - NB Map Filter Does Not Turn NB On/Off

National Boundaries and hex barriers are not displayed on the DDS map.

#### 4.49 JTLS-2014-12278 DDS - Targets Gone When Parent Unit's Name Changed

On the DDS Command Tree, when a Unit name changed on the 'Reset Tree' mode, all or a part of Targets under the Unit disappeared.

#### 4.50 JTLS-2014-12279 DDS - Remove Reference Field From Report Orders

The reference field for report orders appears to be unused, but is required to be filled in. It should be removed.

#### 4.51 JTLS-2014-12280 JTLSConsole - Needs Recall Command Similar To Xterm

The JTLSConsole needs a library for managing command history.

#### 4.52 JTLS-2014-12281 SVPR - Error Corrective Action Finds Target, not JDPI

The corrective action for Error 634 centers the map on a target of the same name as the JDPI, rather than the intended JDPI.

#### 4.53 JTLS-2014-12282 WHIP - On Demand Range Ring Remained After Deletion

An on-demand weapon range ring was added and then deleted, but remained visible until the next screen update.

#### 4.54 JTLS-2014-12284 SVPR - Various Error/Warning Issues

A number of issues have been noted in the format of the SVPR Errors and Warnings, including Warnings 2000-2008 being documented but not implemented anywhere, a number of Error and Warning numbers not currently being used, and many Errors and Warnings requiring a minor correction or clarification.

#### 4.55 JTLS-2014-12285 AAR/DDS Reports - User Added Reports Documentation

New documentation on how to create custom AAR and DDS reports needs to be added.

#### 4.56 JTLS-2014-12286 CEP - Improper Calculation Manifest Processing Time

The routine MANIFEST.PROCESSING.TIME specifies that all manifests take one hour to load or offload. This routine needs to be made more robust, and examine the contents of the manifest, the A/C load/offload time, and the possibility of using MHE. Additionally, the 4th argument within the calls to this routine, which specifies whether it is a loading or offloading event, need to be standardized.

#### 4.57 JTLS-2014-12287 DDS - Oracle Error Windows When DDS Reconnects

With DDS sessions up at two separate workstations, the primary DDS user shut down and restarted GlassFish for the scenario. The DDS at the second workstation lost, and then attempted to re-establish connection (as it should have). However, at the DDS that was up during the GlassFish stop and restart, a pop-up "Oracle Error" window was displayed.

The problem was that NUMEROUS versions of this error window are present, and clicking to close each window simply reveals more error windows, even though the DDS is by now reconnected. The error window probably came up every time the DDS tried to update some table. This error window should, if possible, only be displayed once.

#### 4.58 JTLS-2014-12288 AAR - Target Damage History Report Missing Table

The Target Damage History detailed report outputs the data as a block quote, rather than the expected table.

#### 4.59 JTLS-2014-12289 CEP - Amphibious Assault Crash

When two ground units, magic moved onto a naval formation, were ordered to conduct an amphibious assault using vehicles and helicopters (which were magic moved onto the formation after having their Naval Qualified flag changed to YES), the CEP crashed. This problem is related to but separate from JTLS-2014-12154, which has been fixed in release 4.1.9.0.

#### 4.60 JTLS-2014-12290 CEP - Amphibious Assault Not Completing

Out of two ground units, magic moved onto a naval formation, and ordered to conduct an amphibious assault using vehicles and helicopters (which were magic moved onto the formation after having their Naval Qualified flag changed to YES), one ground unit completed the assault, while the other (which arrived onto the game board through a port) never assaulted. This problem is related to but separate from JTLS-2014-12154, which has been fixed in this release.

#### 4.61 JTLS-2014-12291 AAR - Add AAR Documentation

New documentation on how to run AAR reports needed to be added to the WHIP Training Manual.

#### 4.62 JTLS-2014-12292 ICP - Saving Caused Connect Request to CEP

The JXSR execution host was changed while the JXSR is running, and then changed back. When the ICP was saved and the WSM was refreshed, the CEP crashed. It appears the JXSR sent a new connection request.

#### 4.63 JTLS-2014-12293 WSM - Add Web Services Documentation

New GlassFish documentation, adding instructions for modifying a game in progress (such as adding new WHIPs or moving web services to a different host) needs to be added to the Technical Controller's Guide.

#### 4.64 JTLS-2014-12295 DDS - SQLException With Copied TUP

When copying a TUP and attempting to fill in the number of location transponders on the copy, an error message pops up, saying that "this feature is still in development. This is an error expected by the development team. It is not necessary to report this error." This error is caused by attempting to insert a null value in a field that cannot hold a null character.

#### 4.65 JTLS-2014-12296 SVPR - Warning To Find CEP Crash, Never Generated

Warning 1137 states: Database Entity ENTITY.NAME, index INDEX, should have at least one record. The absence of at least one record for a permanent entities causes a CEP Crash during start. It happens, for example, when the CEP tries to reserve certain arrays using a zero length. There is SIP code to generate this Warning, but the Warning will never be generated. The SIP first crashes during Read, for the same reason the CEP would crash during its Read.

The resolution to this problem involves four actions:

- The DDS should prevent removal of the last remaining record for selected tables holding Permanent Entity data.
- The DDS should perform checks for selected tables being empty whenever a Download is generated from the DDS. Tables could have been emptied by direct sql statements.
- The SIP read code should, when reading the record count file, cease execution if any zeros are found. It will generate a message to the execution window saying why.
- Warning 1137 should be removed.

#### 4.66 JTLS-2014-12297 WHIP - Coordinate Converter Cannot Find Lat/Lon

As with the WHIP IMT windows, the Coordinate Converter tool should allow users to locate a Lat/Log point on the Map, but it currently does not.

#### 4.67 JTLS-2014-12298 DDS - History Table Field Not Updated For POT Targets

The DDS History Table "Record Identifier" field was not updated for SUP/TUP POT targets.



#### 4.68 JTLS-2014-12299 DDS - Strange Behavior In Hierarchy DeepCopy

A ground unit had 10 ground subordinates and 1 depot subordinate (Hierarchy A). When Hierarchy Copy was performed (from the Command Hierarchy window) it only copied the top unit and the subordinate depot. After using this copy as Hierarchy B, and just copying the individual subordinate units and re-parenting them under Hierarchy B, a successful Hierarchy Copy of Hierarchy B in its entirety was able to be performed.

#### 4.69 JTLS-2014-12300 SVPR - Auto-Fix Terrain Problems Nonfunctional

The SVPR was unable to auto-fix mismatched barriers.

#### 4.70 JTLS-2014-12301 CEP - No Divert When Friendly Air Refuel Flag Changes

Commented out code exists in the routine CHANGE.REFUEL.FLAG when the Friendly Refuel Flag for a tanker mission is switched to NO. The code appears to have been commented out because it was causing an infinite loop, but there may be a problem with foreign missions that are heading for the tanker when the flag changes not diverting elsewhere.

#### 4.71 JTLS-2014-12303 WHIP - TRIPP Running With Shut Down Web Services Lock

The TRIPP will sometimes freeze when running with web services shut down.

#### 4.72 JTLS-2014-12304 WHIP - New WHIP Pushed When Running Security Exception

A security exception is thrown when a WHIP component is used for the first time after a new WHIP is pushed while the WHIP is running.

#### 4.73 JTLS-2014-12305 WHIP - Route Deselected Using Context Menu Stays

A route that was deselected using the context-sensitive menu stayed on the map. The route could be removed using the routes filter panel for demand routes.

#### 4.74 JTLS-2014-12306 WHIP - Deadlock While Saving Map Filters

The WHIP froze while trying to save map filters.



## 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
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
EI	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
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

---

ICPLLogin	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
JDA	Japan Defense Agency
JDPI	Joint Desired Point of Impact (formerly DMPI: Desired Mean Point of Impact)
JDS	JTLS Data System
JDSP	JTLS Data System Protocol
JEDI	JODA Entity Data Identifier
JMCIS	Joint Maritime Combat Information System
JMEM	Joint Munitions Effectiveness Manuals
JODA	JTLS Object Distribution Authority
JOI	JTLS Operational Interface
JPL	Jet Propulsion Laboratory
JRSG	Joint Rapid Scenario Generation (formerly JIDPS: Joint Integrated Database Preparation System)
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)
LDAP	Lightweight Directory Access Protocol
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	Material 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
MUSE	Multiple Unified Simulation Environment
NCSA	National Center for Supercomputing Applications (University of Illinois)
NEO	Noncombatant Evacuation Operations
NFS	Network File Server
NGO	Non-Governmental Organization
NIS	Network Information Service or Network Information System
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