

JTLS-GO

Version Description Document

May 2023



DEPARTMENT OF DEFENSE
JOINT STAFF J7
116 LAKE VIEW PARKWAY
SUFFOLK, VA 23435-2697

JOINT THEATER LEVEL SIMULATION - GLOBAL OPERATIONS
(JTLS-GO 6.2.1.0)

[Blank Page]

ABSTRACT

The Joint Theater Level Simulation - Global Operations (JTLS-GO[®]) is an interactive, computer-based, multi-sided wargaming system that models air, land, naval, and Non-Governmental Organization (NGO) functions within a combined joint and coalition environment.

This *JTLS-GO Version Description Document (VDD)* describes the new features of the Version 6.2.1.0 delivery of the configuration-managed JTLS-GO software suite.

JTLS-GO 6.2.1.0 is a Maintenance release of the JTLS-GO 6.2 series that includes an updated repository of standard data, a demonstration scenario based in the western Pacific, as well as a few minor model functionality improvements implemented as Engineering Change Proposals (ECPs). These ECPs are summarized in Chapter 2. Code modifications that represent corrections to known Software Trouble Reports (STRs) are described in Chapter 3. Remaining and outstanding STRs are described in Chapter 4.

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

JTLS-GO Director of Development
ROLANDS & ASSOCIATES LLC
120 Del Rey Gardens Drive
Del Rey Oaks, California 93940 USA
jtlsgo@rolands.com

Copyright 2023 - ROLANDS & ASSOCIATES LLC - All Rights Reserved

[Blank Page]

TABLE of CONTENTS

ABSTRACTiii

1.0 INTRODUCTION 1-1

 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 1.2.1 Obsolete/Outdated Documents..... 1-1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 New Documents..... 1-2

 1.2.5 Delivered Software Components 1-2

 1.2.6 Released Databases..... 1-4

 1.3 INTERFACE COMPATIBILITY 1-4

 1.3.1 Support Software 1-4

 1.3.2 JTLS-GO Cybersecurity Compliance 1-6

 1.3.3 JTLS-GO High Level Architecture Compliance 1-7

 1.4 DATABASE MODIFICATIONS 1-8

 1.4.1 JTLS-GO Using Legacy Default Symbol Set 1-8

 1.4.2 JTLS-GO Using New Default Symbol Set..... 1-8

 1.4.3 Standard Repository Changes 1-9

 1.5 INSTALLATION 1-9

2.0 ENGINEERING CHANGE PROPOSALS..... 2-1

 2.1 JTLS-2023-16074 ADDITIONAL INTEL INFORMATION ON VISUAL 2-1

 2.2 JTLS-2023-16097 CONFIGURE CUSTOMIZED SHAPE FILE FOR WHIP AND DDSC ... 2-1

 2.3 JTLS-2023-16118 COMMAND AUTHORITY REPORT 2-2

 2.4 JTLS-2023-16125 ADD LOCATION TO UNIT HIERARCHY REPORT 2-2

3.0 SOFTWARE TROUBLE REPORTS 3-1

 3.1 JTLS-2023-16064 SURFACE-AIR ENGAGEMENTS REJECTED BY AAR DATABASE 3-1

 3.2 JTLS-2023-16066 TECHNICAL COORDINATOR GUIDE CORRECTIONS 3-1

 3.3 JTLS-2023-16067 ATOT MULTI-TARGET UTILITY USES OLD PARAMETER 3-1

 3.4 JTLS-2023-16069 RPM TEST SCRIPT MISSING PACKAGE REFERENCE 3-1

 3.5 JTLS-2023-16072 CONTINUE AIR INTERCEPT PARAMETER IGNORED (PT 2) 3-1

 3.6 JTLS-2023-16076 UPDATE WARNING 1412 3-2

 3.7 JTLS-2023-16078 IMPROPER COLUMN HEADING FOR POTS 3-2

 3.8 JTLS-2023-16079 FORCE SIDE MISSING FROM ACO XML FILE 3-3

 3.9 JTLS-2023-16080 GIS TOOL ALLOWS GRID ELEVATION LESS THAN 5000 FEET 3-3

 3.10 JTLS-2023-16082 UNDAMAGED AIRCRAFT ALWAYS AVOID MAINTENANCE 3-3

 3.11 JTLS-2023-16084 NATIONAL BOUNDARY ARCS MAY BE TOO SHORT 3-4

 3.12 JTLS-2023-16087 ASSESS WEAPON DAMAGE FORBIDS DIRECT HRU ACTION 3-4

 3.13 JTLS-2023-16088 CONTROLLER CANNOT SET POC PRIORITY 3-4

 3.14 JTLS-2023-16090 ATTACK ORDER CONSTRAINT FAILURE MESSAGE 3-4

- 3.15 JTLS-2023-16092 AIR TRANSPORT MISSION LAUNCHES BEFORE LOADING 3-4
- 3.16 JTLS-2023-16094 DOCUMENTS DIRECTORY UNNECESSARY FILES 3-5
- 3.17 JTLS-2023-16095 AIR TRANSPORT MISSION REPEATEDLY LAUNCHES 3-5
- 3.18 JTLS-2023-16098 INSERT EXTRACT MISSION CRASH 3-5
- 3.19 JTLS-2023-16103 MOBILITY SELF-LIFT CRASH 3-6
- 3.20 JTLS-2023-16104 SIP CRASH FOR COLOR CLEAR 3-6
- 3.21 JTLS-2023-16107 WARNING 1422 NOT IGNORED 3-7
- 3.22 JTLS-2023-16109 WHIP LOCATION HIGHLIGHT EXCEPTION 3-7
- 3.23 JTLS-2023-16110 CONTROLLER REPAIRS SINKING SHIP IN FORMATION CRASH 3-7
- 3.24 JTLS-2023-16111 AAR WEAPON DAMAGE REPORT MISMATCHED DATA 3-7
- 3.25 JTLS-2023-16117 WHIP AAR ORDERS INCORRECT GAME UTILITIES 3-8
- 3.26 JTLS-2023-16120 ATO SPREADSHEET PARSER MISSING SIDE ATTRIBUTE 3-8
- 3.27 JTLS-2023-16123 MISSILE OBJECT HAS INCORRECT WEAPON IDENTIFIER 3-8
- 3.28 JTLS-2023-16129 WHIP ILLEGAL CHARS ATTRIBUTE 3-8
- 3.29 JTLS-2023-16130 WHIP REMOTE SHUTDOWN FORBIDS USER EXIT 3-8
- 3.30 JTLS-2023-16131 BAD MISSION REPORT CANCELED BY FORMATION MOVE 3-9
- 3.31 JTLS-2023-16134 DSA SPREADSHEET FILE CREATES HIDDEN FILES 3-9
- 3.32 JTLS-2023-16137 JXSR FILTER REQUEST REFUSED COMMAS IN STRINGS 3-10
- 3.33 JTLS-2023-16139 DSA AND CONTAMINATION AREA DEFAULT COLOR 3-10
- 3.34 JTLS-2023-16140 ERRORS GENERATING MUSE SNAP REPORTS 3-10
- 3.35 JTLS-2023-16143 WARNING 1132 SVP CORRECTION UNNECESSARY 3-10
- 3.36 JTLS-2023-16148 ERROR 5000 CORRECTION NONFUNCTIONAL 3-11
- 3.37 JTLS-2023-16149 INDEFINITE GROUND ALERT MISSION DAMAGED CRASH 3-11
- 3.38 JTLS-2023-16152 TWO MISSION UNIT LIFT DIFFERENT DESTINATIONS CRASH . 3-11
- 3.39 JTLS-2023-16157 PRIMARY UNIT INCORRECT SUPPLY BLAST DAMAGE 3-11
- 3.40 JTLS-2023-16158 AIRBASE FUEL COLUMN SHOWS GROUND FUEL 3-12
- 3.41 JTLS-2023-16160 ERROR 5007 CORRECTION DOES NOT WORK 3-12
- 3.42 JTLS-2023-16162 CANCELED MISSION HAS TROUBLE COMPLETING 3-12
- 3.43 JTLS-2023-16164 DCP USER UNABLE TO CHANGE GLASSFISH HTTPS PORT 3-13
- 3.44 JTLS-2023-16165 LOGIC ERROR CHECKING DESTROYED SSM TEAR DOWN 3-13
- 3.45 JTLS-2023-16168 SATELLITE MOVE TIMES NOT UPDATED 3-13
- 3.46 JTLS-2023-16171 REPLENISHING UNIT CAN ENTER INFINITE MOVE LOOP 3-13
- 3.47 JTLS-2023-16173 LOGIC ERROR CHECKING LOAD VALIDITY 3-14
- 3.48 JTLS-2023-16177 MISSING INFORMATION FOR SATELLITE DETECTIONS 3-14
- 3.49 JTLS-2023-16179 ERROR 5017 CORRECTION ISSUE 3-14
- 3.50 JTLS-2023-16181 LC2IS COLLAPSE/EXPAND ICONS MISSING 3-15
- 3.51 JTLS-2023-16190 LIMIT ORDERS IN CONTROLLER WHIP MENUS 3-15
- 3.52 JTLS-2023-16193 ATOT REMOVE SPACES IN ACM NAMES FROM ACO 3-15
- 3.53 JTLS-2023-16195 WHIP INCORRECTLY SHOWING CONTEXT SENSITIVE MENU .. 3-16
- 3.54 JTLS-2023-16196 ATO PARSER FLIGHT LEVEL ELEVATIONS INCORRECT 3-16
- 3.55 JTLS-2023-16197 ATO PARSER SHOULD FORBID ZERO ACM RADIUS 3-16
- 3.56 JTLS-2023-16198 DDSR SYNCHRONIZE TOOL CANNOT UPDATE LOCATION 3-16
- 3.57 JTLS-2023-16200 DDSR SYNCHRONIZE DATA 3-16
- 3.58 JTLS-2023-16202 JTOI ICC REMOVE USER CREDENTIALS FROM SAVE FILE 3-17

3.59 JTLS-2023-16203 ATOT DOES NOT GENERATE ACM ORDERS	3-17
3.60 JTLS-2023-16204 IMPROVE TASK CANCELATION MESSAGE	3-17
3.61 JTLS-2023-16207 OVT DID NOT WORK WITH APACHE PKI	3-17
3.62 JTLS-2023-16208 ATOT SUMMARY SHOWS SKIPPED RESIDUAL MISSIONS	3-18
3.63 JTLS-2023-16209 ICP ALLOWED APACHE PKI AND SCENARIO PASSWORD	3-18
3.64 JTLS-2023-16210 DDS MAP NETWORK EDITING SLUGGISH	3-18
3.65 JTLS-2023-16211 POSTPONING SHIP PATROL IN ACM CRASHES	3-18
3.66 JTLS-2023-16212 ADDITIONAL AAR LOGISTICS DATA REPORTING	3-19
3.67 JTLS-2023-16214 MOBILITY MISSION UNABLE TO MOVE UNIT	3-19
4.0 REMAINING ERRORS.....	4-1
APPENDIX A. ABBREVIATIONS AND ACRONYMS	A-1
APPENDIX B. VERSION 6.2.0.0 DATABASE CHANGES	B-1
APPENDIX C. VERSION 6.2.0.0 REPOSITORY CHANGES	C-1

1.0 INTRODUCTION

1.1 SCOPE

This *JTLS-GO Version Description Document (VDD)* describes Version 6.2.1.0 of the configuration managed Joint Theater Level Simulation - Global Operations (JTLS-GO[®]) software suite. JTLS-GO 6.2.1.0 is a Maintenance delivery for the JTLS-GO 6.2 series of releases.

JTLS-GO 6.2.1.0 includes the entire JTLS-GO suite of software, a repository of engineering level data, and a realistic demonstration scenario based on the Western Pacific theater of operations called “wespac62”. Detailed descriptions of some minor Engineering Change Proposals (ECPs) implemented for this release are provided in [Chapter 2.0](#), and [Chapter 3.0](#) describes the software errors that have been fixed since the last release of the JTLS-GO 6.2 series.

JTLS-GO 6.2.1.0 executes on the Red Hat Enterprise Linux Version 8.7 64-bit operating systems. The Web-Hosted Interface Program (WHIP[®]) user workstation interface can be executed on any operating system from any Java-compatible Web browser.

1.2 INVENTORY OF MATERIALS

This section lists documents and software that are relevant to JTLS-GO. All JTLS-GO documents included in this delivery are provided in PDF format within a documents subdirectory.

1.2.1 Obsolete/Outdated Documents

No documents have been deleted or become outdated as a result of this release.

1.2.2 Unchanged Documents

- *JTLS-GO Analyst Guide* (JTLS-GO Document 01, Version 6.2.0.0)
- *JTLS-GO Air Services User Guide* (JTLS-GO Document 03, Version 6.2.0.0)
- *JTLS-GO Configuration Management Plan* (JTLS-GO Document 03, Version 6.2.0.0)
- *JTLS-GO Director Guide* (JTLS-GO Document 07, Version 6.2.0.0)
- *JTLS-GO Executive Overview* (JTLS-GO Document 08, Version 6.2.0.0)
- *JTLS-GO Standard Database Description* (JTLS-GO Document 14, Version 6.2.0.0)
- *JTLS-GO Software Maintenance Manual* (JTLS-GO Document 15, Version 6.2.0.0)
- *JTLS-GO Entity Level Server User Guide* (JTLS-GO Document 19, Version 6.2.0.0)
- *JTLS-GO Federation User Guide* (JTLS-GO Document 20, Version 6.2.0.0)

- *JTLS-GO C4I Interface Manual* (JTLS-GO Document 21, Version 6.2.0.0)
- *JTLS-GO DoD Architecture Framework* (JTLS-GO Document 22, Version 6.2.0.0)

1.2.3 Updated Documents

- *JTLS-GO Controller Guide* (JTLS-GO Document 04, Version 6.2.1.0)
- *JTLS-GO Data Requirements Manual* (JTLS-GO Document 05, Version 6.2.1.0)
- *JTLS-GO DDS User Guide* (JTLS-GO Document 06, Version 6.2.1.0)
- *JTLS-GO Installation Manual* (JTLS-GO Document 09, Version 6.2.1.0)
- *JTLS-GO WHIP Training Manual* (JTLS-GO Document 10, Version 6.2.1.0)
- *JTLS-GO Player Guide* (JTLS-GO Document 12, Version 6.2.1.0)
- *JTLS-GO Technical Coordinator Guide* (JTLS-GO Document 16, Version 6.2.1.0)
- *JTLS-GO Version Description Document* (JTLS-GO Document 17, Version 6.2.1.0)

1.2.4 New Documents

No new documents are delivered with this version of the software.

1.2.5 Delivered Software Components

JTLS-GO 6.2.1.0 may be delivered either on a CD or as a set of compressed TAR files to be downloaded. Either method includes the complete suite of software executable code and command procedures. The following software components are included with this release:

- Combat Events Program (CEP)
- Scenario Initialization Program (SIP)
- Interface Configuration Program (ICP)
- Reformat Spreadsheet Program (RSP)
- JTLS Symbols Application (JSYMS)
- Database Development System (DDS)

Database Configuration Program (DCP)

DDS Client User Interface (DDSC)

- ATO Translator Service (ATOT)
- ATO Generator Service (ATOG)
- ATO Retrieval Program (ATORET)
- JTLS Convert Location Program (JCONVERT)
- 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)

The current JODA build number is 188.

- Web Services Manager (WSM)
- Web-Hosted Interface Program (WHIP) and its component programs:
 - Apache Server (APACHE)
 - JTLS XML Serial Repository (JXSR)
 - Order Management Authority (OMA)
 - Synchronized Authentication and Preferences Service (SYNAPSE)
 - XML Message Service (XMS)
 - Total Recall Interactive Playback Program (TRIPP)
- Entity Level Server (ELS)
- JTLS Operational Interface (JOI) for both OTH-Gold and Link-16 generation
- Tactical Electronic Intelligence (TACELINT) Message Service
- Keyhole Markup Language (KML) Operational Interface (KOI)
- JTLS Transaction Interface Program (JTOI)

- JTLS Interface Network Navigator (JINN)
- JTLS Order of Battle Editor (JOBED)
- JTLS Geographic Information System (GIS) Terrain Building Program
- JTLS Master Integrated Database (MIDB) Tool
- JTLS Version Conversion Program (VCP)

VCP60 - Converts a JTLS-GO 5.1 database to a JTLS-GO 6.0 formatted database.

VCP61 - Converts a JTLS-GO 6.0 database to a JTLS-GO 6.1 formatted database.

VCP62 - Converts a JTLS-GO 6.1 database to a JTLS-GO 6.2 formatted database.

Instructions for installing JTLS-GO 6.2.1.0 are provided in the *JTLS-GO Installation Manual*. Installing a previous version of JTLS-GO prior to installing JTLS-GO 6.2.1.0 is not necessary. The software provided with this delivery is a complete release that includes all files and code required to execute JTLS-GO.

The basics of installation have not changed significantly, but due to many Cyber-Security improvements, a new Linux RPM package named "xerxex-c", is required to run JTLS-GO 6.2.1.0. The Synapse will not function without this package. Prior to installing JTLS-GO 6.2.1.0, please run the RPM checking script delivered with JTLS-GO to ensure that this package and all other packages are installed as part of your Linux operating system.

1.2.6 Released Databases

This release includes the following sample unclassified databases:

- The scenario that serves as a repository of engineering level data called "repository62". Although not useful as a scenario, it does follow all of the database requirements for a scenario, and should be loaded into your PostgreSQL scenario table-space.
- The scenario "wespac62", which is suitable for training and demonstrations.

1.3 INTERFACE COMPATIBILITY

1.3.1 Support Software

JTLS-GO 6.2.1.0 requires the following versions of support software, including operating systems, compilers, scripting utilities, database tools, transfer protocols, and display managers.

- Operating system for the model: Red Hat Linux Enterprise Server (ES) Edition Version 8.7, 64-bit architecture.

JTLS-GO 6.2 has been tested with the following versions of Linux 8:

RedHat Linux 8.7 - this operating system license must be purchased.

Oracle Linux 8.7 - This operating system is free to download, use, and distribute, and is provided in a variety of installation and deployment methods. It has been approved by DISA for use by U.S. Government Agencies.

- There are no restrictions on the operating system for client workstations, except that the operating system must have a Java-enabled web browser. JTLS-GO 6.2.1.0 has been tested on the following operating systems:

Red Hat Linux Enterprise Edition Version 7.9, 8.4, and 8.7

Oracle Linux 8.4 and 8.7

Windows 10, which can be used only if the workstation is an external HTTP client of the simulation network.

- JTLS-GO 6.2.1.0 is delivered with the Adoptium project Temurin Java Development Kit (JDK) 1.8 Update 372 package, which is equivalent to the current version of OpenJDK.
- JTLS-GO uses IcedTea to provide the Java Web Start capability that implements the web-enabled JTLS-GO functionality. JTLS-GO supports IcedTea version 1.8.8.
- JTLS-GO database tools require a certified PostgreSQL 11.19 database server and the full PostgreSQL installation. A containerized solution, that fulfills this specification, is provided as part of the JTLS-GO download. It is not necessary to use the delivered containerized solution, but it is the easiest method to meet the requirements of JTLS-GO 6.2.1.0. There are several alternative methods available for obtaining the PostgreSQL 11.19 software. Refer to Chapter 6 of the *JTLS-GO Installation Manual* 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-GO 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 III (SIMSCRIPT to C) translator/compiler: SIMSCRIPT is required for recompiling JTLS-GO code. It is not necessary to have a SIMSCRIPT compiler to execute JTLS-GO, because all JTLS-GO 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-GO SIMSCRIPT code.
- ANSI C Compiler: It is not necessary to use a C compiler to execute JTLS-GO. This compiler is used only by U.S. Government organizations that can obtain source code and intend to re-compile any of the JTLS-GO 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-GO. This compiler is used only by U.S. Government organizations that can obtain source code and intend to re-compile any of the JTLS-GO HLA component programs. The C++ Compiler version delivered with the supported versions of Red Hat Linux ES is sufficient.

- The JTLS-GO DDS application uses these open source libraries:

JFreeChart, licensed under a GNU Lesser General Public License (LGPL) 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>HLA 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 an operational Command, Control, Communication, Computer Information (C4I) systems may be able to install and use Google Earth and configure the KOI to provide a capability that resembles C4I for observing perception Force Side data.

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

1.3.2 JTLS-GO Cybersecurity Compliance

Because of recent incidents of intrusions into software systems, the United States Department of Defense (DoD) has implemented a strong and strictly enforced Cybersecurity program. JTLS-GO,

as software that executes on DoD systems, must comply to the mandates of the program, along with all of the third party software used by JTLS-GO, such as PostgreSQL and Java.

JTLS-GO has moved to Adoptium, a full OpenJDK Java environment with licensing alternations allowing an application to deliver the software. The following procedure has been established and approved by the JS/J7 Cybersecurity branch:

- Within days of an Oracle Java security release, Adoptium produces an equivalent version using infrastructure, build and test scripts to produce pre-built binaries of the OpenJDK class libraries. All Adoptium binaries and scripts are open source licensed and available for free.
- Within two-weeks of the Adoptium release, JTLS-GO provides a bug release version (JTLS-GO 6.2.n.0) including a full Version Description Document (VDD) for download to all authorized agencies. All DoD agencies using JTLS-GO will be in full compliance with this specific Cybersecurity mandate as long as they download and use the bug released versions when distributed.

Contact the U.S. Government Program Manager, Ms. Jessica Camacho by email at jessica.l.camacho.civ@mail.mil to obtain the completed Cybersecurity paperwork and a current Gate completion certificate.

As a result of new security requirements built into JTLS-GO 6.2.0.0 as part of ECP JTLS-2022-15976 “Encrypt Passwords To Start WHIP/DDSC”, users must delete **all** existing scenarios in their \$JGAME directory. This will require you to set up your scenarios from a fresh state:

1. Convert your scenarios to JTLS-GO 6.2.0.0 using the Version Conversion Program (see Chapter 13 of the *JTLS-GO DDS User Guide* for instructions).
2. Perform Option 3, “Setup System For A Specific Scenario”, for each scenario.
3. Perform Option 5, “Run Interface Configuration Program”, for each scenario.

This is **not** a requirement if you have already installed JTLS-GO 6.2.0.0 and are upgrading to JTLS-GO 6.2.1.0.

1.3.3 JTLS-GO High Level Architecture Compliance

The JTLS-GO 6.2.1.0 release is fully High Level Architecture (HLA) compliant, and includes all the programs required to run JTLS-GO in an HLA mode. JTLS-GO currently belongs to one federation known as GlobalSim. GlobalSim is a comprehensive constructive simulation solution for joint training and wargaming that helps commanders and all levels of staff prepare for a range of operational scenarios.

The solution combines JTLS-GO with CAE's GESI constructive tactical entity-level simulation system. CAE's GESI constructive simulation system is designed to run complex and comprehensive exercises from the company level up to division level. The GESI system is used to represent a virtual battlefield, including weapons, vehicles, aircrafts, ground forces and more.

Combining JTLS-GO and GESI brings together operational and tactical level constructive simulations to prepare commanders and staff to make timely, informed and intelligent decisions across the full spectrum of operations, including conventional combat, disaster relief, and operations other than war.

From the JTLS-GO perspective, all software needed to run GlobalSim is included in this delivery. JTLS-GO uses the Federation Object Model (FOM) located in the \$JGAME/data/hla directory, Federation testing of JTLS-GO 6.2.0.0 with CAE's GESI model has not been accomplished. CAE should be contacted concerning the continued support of GlobalSim.

The HLA RTI (Run Time Infrastructure) executive program (rtiexec) recommended for use with this release is Pitch pRTI Evolved 4.4.2.0. However, this program is not included in the JTLS-GO 6.2.1.0 delivery. Users may obtain a full installation package of the RTI software from Pitch Corporation (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

Several database structure differences exist between JTLS-GO 6.2 series and the previous JTLS-GO 6.1 series database structure.

To upgrade your JTLS 6.1 scenario to JTLS-GO 6.2 compatibility, see instructions listed in the *JTLS-GO DDS User Guide*, Chapter 3.1, followed by the instructions in Chapter 13 of the *JTLS-GO DDS User Guide*.

1.4.1 JTLS-GO Using Legacy Default Symbol Set

If a user organization is still using the pre-JTLS-GO 5.0.0.0 legacy default symbol set, prior to unloading your JTLS-GO 6.2.0.0 formatted data from your PostgreSQL database server into the JTLS-GO 6.2.0.0 scenario American Standard Code for Information Interchange (ASCII) text files, you must execute the JSYMS program using the procedure outlined in the *JTLS-GO DDS User Guide*, Appendix B.11. This procedure will reorganize the structure of the <scenario_name>.gs and databases symbol.scf file.

1.4.2 JTLS-GO Using New Default Symbol Set

You should not make any modifications to the Default Symbol Set delivered with JTLS-GO 6.2.1.0, but end-user organizations are free to use the Default Symbol Set in their scenarios and alter the scenario symbol set to meet specific organizational needs. No symbols changes have been made to JTLS-GO 6.2.1.0. The symbols available in JTLS-GO 6.2.1.0 are identical to the symbols

available in the JTLS-GO 6.1 software series. This means that the user should not need to make any symbol changes when converting from a JTLS-GO 6.1 series scenario to a scenario usable by JTLS-GO 6.2.0.0. If an organization has made their own symbol changes, please follow the steps outlined in the *JTLS-GO DDS Users Guide*, Section B.13, Updating Scenario Symbol Set.

1.4.3 Standard Repository Changes

R&A has continued to improve and expand the unclassified data repository, which has been renamed to “repository62”. The DDS comparison and synchronization function can be used to determine if any of the changes delivered are of use to a JTLS-GO user organization.

1.5 INSTALLATION

The *JTLS-GO Installation Manual*, a Portable Document Format (pdf) file available for direct download, is part of this JTLS-GO delivery. It provides detailed instructions for installing the new version of JTLS-GO and the installation of PostgreSQL 11.19 required to operate JTLS-GO 6.2.1.0.

2.0 ENGINEERING CHANGE PROPOSALS

This chapter summarizes model capabilities added to JTLS-GO 6.2.1.0 as a result of implementing authorized minor Engineering Change Proposals (ECPs).

2.1 JTLS-2023-16074 Additional Intel Information On Visual

Summary of Model Change Request

The symbols for enemy Units on the WHIP Map should be updated to indicate that the detection time for that Unit is outdated.

Design Summary

Detection status is now an option on the WHIP Map filter panel. When shown, a status bar will appear next to the enemy object's symbol icon. The bar color will indicate how old the detection of this object is. Recently detected objects will appear in the object's Force Side color, and incrementally reduce to yellow as the detection ages in six-hour increments. This is an extremely important feature when attempting to fire on a mobile target.

2.2 JTLS-2023-16097 Configure Customized Shape File for WHIP and DDSC

Summary of Model Change Request

The Interface Configuration Program (ICP) and Database Configuration Program (DCP) should be modified to automate the configuration of enabling the display of customized shape files for the world map in the WHIP and DDS.

Design Summary

To change the shape file used for the world map, the WHIP first looks to see if a map.properties file exists under `$JHOME/game/<scenario_name>/webroot`. The DDS looks in the Glassfish domain's docroot directory. The map.properties file is parsed for lines that end in `.shp` or `.shx`, and loads each entry.

The ICP and DCP have been changed to allow users to specify any customized shape files under the scenario's `$JGAME/data/maps` directory. The ICP and DCP generate the map.properties files during the save process, and place a copy of the necessary shape file under the respective directory.

2.3 JTLS-2023-16118 Command Authority Report

Summary of Model Change Request

It was not possible to get a report of the current Command Authority for each unit. A report is needed.

Design Summary

The user may use the new Query Command Authority order to generate a command structure report, showing the reporting WHIP for each unit and its type of authority that has been given to the WHIP.

2.4 JTLS-2023-16125 Add Location To Unit Hierarchy Report

Summary of Model Change Request

The Unit Hierarchy Report provides an indented list of units within a Command Hierarchy, but does not provide any other unit information in the report. It would be useful for the location of each unit to be included in the report.

Design Summary

Unit location was added to the Unit Hierarchy Report.

3.0 SOFTWARE TROUBLE REPORTS

Software Trouble Reports (STRs) describe software code errors that have been discovered by JTLS-GO users or developers and have been corrected.

3.1 JTLS-2023-16064 Surface-Air Engagements Rejected By AAR Database

Surface-Air Engagements were not being filed in the AAR database because the type of the object, AAR_ENGAGEMENT_SURFACE_AIR, was longer than the allowed length of 25 characters for the type field in the AAR Object Lookup table.

A new macro was introduced for the maximum table name length of 30 characters and assigned to the named type column in the AAR Object Lookup table. Because the named type is actually the name of the table, and because PostgreSQL has a 30 character limit on table names, this should accommodate all objects within the AAR.

3.2 JTLS-2023-16066 Technical Coordinator Guide Corrections

The documentation for PKI Authentication was incomplete at the time of the release of JTLS-GO 6.2.0.0.

Documentation was added to the *JTLS-GO Technical Coordinator Guide* to support PKI Authentication in this version of JTLS-GO.

3.3 JTLS-2023-16067 ATOT Multi-Target Utility Uses Old Parameter

The ATO Translator (ATOT) is writing package attack missions using the multi-target option, but the multi-target utility order is incorrect, so the order will not verify.

The definition for the multi-target utility order was recently updated to change the name of the utility and one field type. The ATOT was using the older name and field type. The ATOT code was modified to write the proper name and field type for the utility.

3.4 JTLS-2023-16069 RPM Test Script Missing Package Reference

The checkJtlsRequiredRPMs script does not report the openssl-devel package when testing for required RPMs for a JTLS-GO development server.

The missing RPM package was not properly included in the required RPM list when testing a development server. This package name has been added to this list.

3.5 JTLS-2023-16072 Continue Air Intercept Parameter Ignored (Pt 2)

JTLS-GO 6.1.9.0 STR JTLS-2023-16058 was ported over to JTLS-GO 6.2.0.0 prior to its official release. The fix had some undesirable results.

The logic that was implemented did not execute the break-off logic for an interceptor until at least one of interceptor's weapons was within range of the enemy. This meant that a mission with only short-range guns would be fearless when intercepting an enemy air mission with long range weapons. This was not desired and negated the importance of the database parameter AC CONTINUE ENGAGE MULTIPLIER.

Three changes were made which should provide more realistic break off results:

- The user is now allowed to set an air mission's Continue Engage Multiplier to zero. Setting the value to zero will make the mission fearless and it will always continue to intercept - no matter the odds.
- The interceptor is allowed to know the ROE distance of the enemy mission. As long as the next move will keep the mission out of the interceptee's ROE distance, the intercept will continue.
- If the next move is determined to probably result in the two missions passing each other, the next distance between the two missions is assumed to be zero, and the logic will compare the best weapons held by each mission.

3.6 JTLS-2023-16076 Update Warning 1412

SVP Warnings 1412, 1488, 1489 and 1490 are not working as originally intended. Additional criteria need to be added.

The warnings were intended to identify when a unit with a SAM target that had an inherent Fire Control Radar also had a Fire Control Radar built as a separate target, which was unnecessary. The user may have built what appeared to be the extra Fire Control Radar for use as a general-purpose Air Search Radar.

The new criteria look for the SAM target to see if it has a matching Sensor built of the same subcategory as the Fire Control radar for the SAM site. If so, then it looks to see if there is yet another Air Search radar. If there is, then the SVP recommends deleting the duplicate Fire Control Radar.

Warning 1412 has been removed. Warnings 1488-1490 are now Warnings 1488-1495, based on whether the SAM, Fire Control and Air Search radars are built as POTs or real targets.

3.7 JTLS-2023-16078 Improper Column Heading For POTs

The column header on the TUP and SUP detail page for prototype targets uses the term "CCF Number". It should say "POT Base Name".

A POT Target's CCF Number is a concatenation of the unit name and the POT Base Name. The change was made for both TUPs and SUPs to distinguish between the two concepts.

The second column header was also changed from Long Name to POT Long Name for consistency. This was also done for TUPs and SUPs.

3.8 JTLS-2023-16079 Force Side Missing From ACO XML File

The ATOT generated an error message that indicated there was no Force Side associated with the ACO data. The Force Side was present in the spreadsheet file read by the ATO Parser.

The ATO Parser read the primary Force Side from the ACO spreadsheet, but did not write it and the coalition Force Sides to the ACO XML file used by the ATOT. The missing primary Force Side generated the error message from the ATOT. The missing logic was added to the spreadsheet ATO parser program to correct the error.

3.9 JTLS-2023-16080 GIS Tool Allows Grid Elevation Less Than 5000 Feet

The DDS constrains non-Ocean terrain grid elevations (average and maximum) to be between negative 5000 (-5000) feet and 32767 feet. A problem occurred when the terrain from a GIS Tool project was exported to JTLS-GO scenario text format and then loaded by the DDS. The DDS found an Open type terrain grid with an average elevation of -6227 feet. The load failed as a result. The tool needs an elevation check like the one implemented for the DDS.

The GIS tool now checks the average elevation and maximum elevation of non-Ocean grids. If the elevation is less than -5000, it is set to -5000. If the elevation is greater than 32767, it is set to 32767.

The model was modified to limit depths to be no deeper than the maximum depth of the deepest depth zone when changed using the order to alter terrain.

3.10 JTLS-2023-16082 Undamaged Aircraft Always Avoid Maintenance

Undamaged aircraft were observed not entering maintenance after completing their missions. This behavior was true for missions that launched only once, and for missions that launched multiple times from alert status or air transport. Alert missions that never launched did not enter maintenance, as expected.

The air mission attribute AM.NUMBER.MISSIONS.FLOWN tracks the number of times a mission takes-off. After the mission is completely finished, the number of take-offs influences the likelihood an aircraft requires maintenance. Investigation revealed that the AM.NUMBER.MISSIONS.FLOWN was always zero. Therefore, aircraft never entered maintenance upon mission completion, unless damaged. The AM.NUMBER.MISSIONS.FLOWN was not being incremented each time a mission took-off.

The missing code was added to correct the problem. As designed, missions that take off at least once have a probability of requiring “malfunction” maintenance upon completion. The greater the AM.NUMBER.MISSIONS.FLOWN, the greater the likelihood each aircraft will enter malfunction maintenance. Aircraft that avoid malfunction maintenance (due to the randomness

of the process) will enter routine maintenance for a much shorter length of time. Again, alert missions that never launch will not enter any type of maintenance.

3.11 JTLS-2023-16084 National Boundary Arcs May Be Too Short

National boundary arcs that are too short may result in computational rounding errors, causing the incorrect conclusion that an object will not cross the boundary.

Changes were made to the code to generate SVP Error 171 if the distance between two national boundary points is too small.

In the CEP, checks were added to ensure that no altered arc segments had zero length in national boundaries and terrain barriers.

3.12 JTLS-2023-16087 Assess Weapon Damage Forbids Direct HRU Action

The Controller Assess Weapon Damage order did not allow for the representation of direct action weapon placement by HRU. A direct attack by HRU could not be represented by the Controller using this order.

An option was added to the Assess Weapon Damage order to support direct action. The radius of effects was set to be that for the selected weapon.

3.13 JTLS-2023-16088 Controller Cannot Set POC Priority

There was no capability to set the Priority for a Political Country in the running simulation.

The option to modify the POC Priority was added to the SET.POLITICAL.COUNTRY.DATA order.

3.14 JTLS-2023-16090 Attack Order Constraint Failure Message

The WHIP Order rejection message for the constraint "Capability_Disabled" in the Attack order needed to be revised.

The rejection message for the constraint was rewritten so the user is told the Group Attack option has been temporarily disabled.

3.15 JTLS-2023-16092 Air Transport Mission Launches Before Loading

A Mobility order was submitted to direct an Air Transport mission to load supplies at its home base. The mission took off and immediately landed before loading the specified supplies. The mission accomplished the loading and continued normally.

This behavior was observed consistently each time an Air Transport mission was ordered to load supplies at its current airbase. A logic flaw caused the model to add a Take Off task when the

mission was not airborne and in the correct location, causing the mission to take off even though it was already at the correct location to load supplies. The error was corrected.

3.16 JTLS-2023-16094 Documents Directory Unnecessary Files

The \$JHOME/documents directory contained the folders "dds" and "dds_old," which were near-duplicates.

The 'dds_old' directory was removed.

3.17 JTLS-2023-16095 Air Transport Mission Repeatedly Launches

A Mobility order was submitted to direct an Air Transport mission to unload supplies at an airbase with a Leave Option Duration of three minutes. The Order generated a Ground Wait task after the Offload Supplies task in the Air Mission Tasks IMT, as expected. During execution, the mission completed offloading the specified supplies. Then, the mission took off and landed three consecutive times before starting the Ground Wait task. After the Ground Wait, the mission continued normally.

In the Mobility order, the Transport Instruction specified “Location Option: Land Specific Unit”, which designated the airbase where the mission went to execute the Offload Supplies task. The model created the Offload Supplies task with the location and name of the airbase. The same Transport Instruction also specified “Leave Option: Task Duration” which required the mission to remain on the ground after completing the Offload Supplies task. The Ground Wait task included the coordinates of the airbase center, but not the name of the airbase itself.

When the mission landed, the model randomly placed it within the airbase radius, which in this specific case was 12 KM. After the offload completed, the model checked the location of the mission to determine if the mission was in the correct location to execute the Ground Wait. Because there was no unit to reference in the Ground Wait task, the model substituted the global MAX OFFSET DISTANCE of 1 km as the radius. The logic properly determined that the mission was too far away and dutifully created a Takeoff and Move task. When the mission landed, the logic randomly placed the mission near the airbase center, but more than 1 km (plus the mission radius) away from the coordinates in the Ground Wait task. The mission repeated this behavior twice more before the random location selected by the model placed the mission less than 1 km from the airbase center.

To avoid this behavior, the initial processing of the Transport Instruction was changed to include the unit name in the Ground Wait task when the “Location Option: Land Specified Unit” is selected in the Mobility order. This change now provides an actual unit radius to assess the location of the mission relative to the unit's center.

3.18 JTLS-2023-16098 Insert Extract Mission Crash

The CEP crashed while attempting to execute an air wait task during a mobility mission.

The crash was caused when the model tried to take the square root of a negative number. This calculation error occurred because the air mission had an altitude of negative one (-1). This value was incorrectly assigned to the mission when no altitude was specified on the Mobility Mission Order. The CEP logic was corrected to not use the -1 value from the order; instead, the mission will now fly at its database cruise altitude when no altitude is specified on the order.

3.19 JTLS-2023-16103 Mobility Self-Lift Crash

A Mobility order was submitted to a fixed-wing airlift squadron that specified to conduct a self-lift with all of its aircraft. The order specified a destination that did not have an airbase or runway. When the self-lift mission arrived at the destination, the “No Suitable Landing Place” tactical alert was generated and the model crashed.

The model crashed while attempting to find a suitable divert location. The logic assumed the squadron still had a home base assigned, but it did not because the entire squadron had been self-lifted. The squadron's home base was needed to determine if there was an alternate base assigned. The code attempted to reference the null home base and crashed.

The problem was corrected by adding a check for a non-null home base before determining if an alternate base is assigned. If the alternate base is assigned, it is selected as the divert location and the mission flies to that location and lands. If the home base is null, the logic looks for a suitable divert location.

- If found, the mission flies to that location and lands. It may be that the “best” divert location has a runway that is shorter than the aircraft's required landing length in which case a number of aircraft may be destroyed due to crash landing.
- If no suitable landing location is found, then all the aircraft in the mission are lost.

Note that none of this logic, other than the check for a non-null home base, was altered.

3.20 JTLS-2023-16104 SIP Crash For Color CLEAR

The SIP Program crashed trying to set the Force Side color to CLEAR.

JTLS-GO may have up to 20 sides and each side must have a unique color. There are only 20 significantly different colors defined within JTLS-GO, and the DDS ensures that no color is used twice. Once all 20 Sides are created within a scenario, and all 20 colors used, there was no way to change colors for a Side without duplicating a color already used and the DDS does not allow the database builder to do this. To solve this dilemma, the color CLEAR was added to be used only as a temporary filler when changing Force Side colors.

New Error 179 was added to the SIP to prevent the crash and to inform the user the color CLEAR needs to be changed.

3.21 JTLS-2023-16107 Warning 1422 Not Ignored

Warning 1422 is still created, even when the user has set their preferences to not display that Warning.

SVP warnings are created to inform the user that there is some inconsistency in their data that will not cause the model to crash, but may cause unpredictable results. Because there are many warnings that may not be of significance to the user, the user has the capability to suppress the generation of any or all Warnings.

The code for Warning 1422 did not check to see whether the user had set their preferences to suppress generating that warning. The check was added to the code, and several other warnings that had similar missing checks were corrected as well.

3.22 JTLS-2023-16109 WHIP Location Highlight Exception

Locations are highlighted on the WHIP Map with an arrow whenever a location text value is selected from one of the WHIP components, such as a location in the IMT table. Although nothing was visible in the WHIP, there was a null pointer exception printed in the WHIP's debug console when a location was highlighted on the Map in this way.

The highlighting code handles the highlighting of both Map symbol icons and locations. When highlighting a location on the WHIP Map, the symbol icon is now first checked to ensure it is not null to prevent the exception from occurring.

3.23 JTLS-2023-16110 Controller Repairs Sinking Ship In Formation Crash

A ship that belonged to a non-moving formation was damaged and started to sink. The Controller submitted a Controller Change Unit order to restore the strength of the sinking ship, which stopped the ship from sinking. When the code attempted to update the ship's speed, the model crashed.

The problem occurred because the ship's formation had an initial speed of zero, and the model was attempting to restart the formation because the sinking ship had been repaired. The model incorrectly assumed that the formation speed was zero because it had stopped to wait for the sinking ship. In this case, this was a poor assumption - the formation speed was zero, because the formation was not supposed to be moving, and had no assigned tasks.

The logic was improved to determine the reason the formation speed was zero. It now only attempts to update the formation speed and restart its movement task if the formation was stopped because of the sinking ship.

3.24 JTLS-2023-16111 AAR Weapon Damage Report Mismatched Data

The stylesheet for the AAR Weapons Damage Report was listing killed systems using the data for damaged systems and vice versa.

The stylesheets were corrected to print out the proper data parameter.

3.25 JTLS-2023-16117 WHIP AAR Orders Incorrect Game Utilities

The WHIP AAR report orders that reference a utility were failing to open the correct utility panel, or in some cases, no utility panel at all. The problem occurred because the path to the AAR utilities was not set.

The event that opens an AAR utility from a report order now sets the AAR flag properly, which sets the correct path to the AAR utilities. The “checkorder” script also now validates duplicated AAR order file names. The feeling of the Design Team was that two different Utilities with the same name, one in the Order’s directory and one in the AAR’s directory could be confusing. This possible confusion issue was removed.

3.26 JTLS-2023-16120 ATO Spreadsheet Parser Missing Side Attribute

The ATO Service crashed trying to parse the XML file.

The parsed XML code created by the ATO Spreadsheet Parser did not create the “SIDE” attribute correctly when multiple Sides were contained in a spreadsheet ATO. This problem was fixed.

3.27 JTLS-2023-16123 Missile Object Has Incorrect Weapon Identifier

The JODA MISSILE object was not properly setting the identifier for the type of weapon that was fired.

The model incorrectly formed the JODA Update with the pointer to the weapon, and not the receiver number of the weapon. In order to ensure that the model was properly setting this JODA parameter, a Missile IMT screen was created to look at the data.

3.28 JTLS-2023-16129 WHIP Illegal Chars Attribute

The illegal characters attribute read by the WHIP for the orders did not match the order schema definition. The problem was that the WHIP incorrectly looking for the XML attribute 'illegal-chars', (plural) instead of 'illegal-char' (singular) as is defined in the schema.

The attribute name read in the WHIP as 'illegal-chars' was changed to 'illegal-char', matching the orders schema as it is defined. The capability to specify illegal characters within a WHIP Order text field now works. This corrected capability was used to ensure that Air Mission Call Signs did not include illegal characters such as “-” and “_”.

3.29 JTLS-2023-16130 WHIP Remote Shutdown Forbids User Exit

A running WHIP can be instructed to be shutdown remotely using the Synapse service. Once a running WHIP receives the shutdown instruction, the WHIP exits after some time, during which the WHIP no longer allowed users to exit the WHIP themselves or save their work during the

shutdown countdown. Users were prevented from performing any tasks on the WHIP because the exit notifier blocked all input from the user.

The exit notifier was changed to allow user input during the shutdown countdown so users can save their work and exit the WHIP themselves immediately and gracefully.

3.30 JTLS-2023-16131 Bad Mission Report Canceled By Formation Move

A mission report indicated that a mission was canceled due to Reason Code 28, and the message did not know how to interpret this reason code.

The mission was in aircraft delay from a squadron that was on board a ship that belonged to a moving formation. The formation moved, causing the ship to move, causing the squadron to move, causing the model to re-look at whether the delayed missions were still viable. The conclusion was that the aircraft delayed mission was not viable, and it was canceled due to the unrecognized reason code.

The code was changed to recognize the reason, and the format of the Mission Report message definition file was changed to list an appropriate written reason.

3.31 JTLS-2023-16134 DSA Spreadsheet File Creates Hidden Files

The output files from the DSA Spreadsheet Program (DSP) were created as hidden .dot files in the orders directory.

The DSP program uses the "REFERENCE ID" which is supposed to be the second variable on the second line of the input data. It uses the ID to form a valid and unique file name for this set of Directed Search Area (DSA) orders. If the field is blank, then the file name is created with a leading dot (.) or period character, which in a Linux system gives it the appearance of being a hidden file. It was confirmed with the user that the data had been left blank.

To fix the problem, the program checks for the blank field and, if so, generates a warning message and replaces the blank field with the text "NONAME".

There is a third field on the same line, which the user had also left blank. This field contains the simulation month and year (APR23) that is needed to correctly format the Date/Time Group field for DSAs that have a cancellation time.

A new warning was added to inform the user of this problem. Because most simulations are run using the current date and time, the program will also substitute the current system month and year for the blank field entry.

3.32 JTLS-2023-16137 JXSR Filter Request Refused Commas In Strings

Commas are valid characters that may be used in strings such as names of units. However, when a unit having a comma as part of its name was selected in the WHIP Map, it would not show up in the Sitrep display.

The JXSR uses a comma as a value separator for all types of data in the filter portion of a request stream. The comma that was used in the name of a unit caused the JXSR to separate the name into two invalid names. As a result, the filter for the Sitrep request was improperly formed to contain two unit names that did not exist.

The JXSR and WHIP were modified to use a space as a value separator for filter requests. The space is not a valid string character for a name, so the JXSR will install the names properly in the filter for all listed name values.

3.33 JTLS-2023-16139 DSA And Contamination Area Default Color

National and Tactical DSAs were defined to default to the same color, and the Contamination area types were defined to default to black.

The default color defined for tactical DSAs was changed to differentiate them from national DSAs. The default color defined for Contamination Areas was changed to use different colors for chemical and nuclear contamination.

3.34 JTLS-2023-16140 Errors Generating MUSE Snap Reports

The ELS crashed when the MUSE external model sent an order to the ELS to generate a Snap report. This capability allowed a synthetic UAV, as controlled by the MUSE simulation, to send Fixed Frame Imaging information to the JTLS-GO simulation. The end result of this interaction is the production of an IIR message in JTLS-GO which was initiated by MUSE.

The ELS crashed because it was attempting to insert information into the IIR report for air missions on the ground. Specifically, there were aircraft on the ground, which had been catastrophically killed while they were On-Alert. The ELS code was not properly processing the physical size that the aircraft occupied on the ground.

3.35 JTLS-2023-16143 Warning 1132 SVP Correction Unnecessary

The correction for Warning 1132 to set the DIS Code to 0.0.0.0.0.0 is unnecessary.

The code for checking DIS Codes generates Warning 1132 when certain conditions are met and the DIS.CODE is "0.0.0.0.0.0". One of the corrections for fixing warning 1132 is to set the DIS.CODE to "0.0.0.0.0.0". This is not necessary because that was DIS.CODE was already determined to be that value. The correction to set the DIS.CODE to "0.0.0.0.0.0" was removed.

The same problem was also noted for Warning 1159 and corrected.

3.36 JTLS-2023-16148 Error 5000 Correction Nonfunctional

The correction to open the unit table for Error 5000 does not work.

Error 5000 checks the federation compatibility for a unit and subordinate unit. If the Parent unit is anything except JTLS_ONLY, then the subordinate unit cannot be JTLS_ONLY. The correction for Error 5000 should open the unit table for the subordinate unit to allow correction of the Owing Federate type. There was a mismatch in the parameters passed to the SVPR, causing the table not to open.

The SVPR correction was corrected to properly display the table for the subordinate unit. A new correction was added to open the table for the parent unit to allow correction of its Owing Federate also.

3.37 JTLS-2023-16149 Indefinite Ground Alert Mission Damaged Crash

If a ground alert air mission, that was not given an off alert time, is damaged while on the ground, the model will crash.

The logic assumed that the Complete Mission Task for the mission's alert task would exist. If the user did not specify a specific off alert time or an alert duration, the Complete Mission Task does not exist. The logic was corrected to account for this situation.

3.38 JTLS-2023-16152 Two Mission Unit Lift Different Destinations Crash

A user submitted two Mobility Mission Orders to lift the same unit. The pickup location was identical, but the drop off location was not identical. They were close, but the two locations were in different grids. The model crashed when the last load was picked up and the model was attempting to move the unit icon from its pickup location to its drop off location.

The situation should not have been allowed. The code has been protected to catch and properly handle the situation. In the next maintenance release, the Development Team will address the issue of ensuring the orders for the multiple mission Unit lift capability are built consistently.

3.39 JTLS-2023-16157 Primary Unit Incorrect Supply Blast Damage

If a weapon was aimed at a unit, that unit is known as the weapon's primary target object. If the weapon also causes secondary blast damage, the computation tended to kill too many supplies.

The issue was based on the Command Control Prototype (CCP) Supply Type (SUT) Base Density (CCP.SUT.BASE.DENSITY) data array. The computation was not properly using this data. In addition, when computing the overlap between the unit radius and the weapon's lethality radius, the overlap computation was using Meters as the size of the radii, but the distance between the objects was using Kilometers. The end results of these two errors was the weapon was assumed to cover too much of the unit, which caused too much damage. This mismatch was corrected.

The computation for blast damage to Combat Systems properly used the Combat System Base Density data but still had the wrong unit of measure for the distance between the unit circle and the weapon's lethal radius circle centered on the impact location. This problem was also solved.

3.40 JTLS-2023-16158 Airbase Fuel Column Shows Ground Fuel

When JTLS-GO moved to multiple fuel types, the ability to list the fuel at different units became more complicated. This complicated situation resulted in an Airbase Unit updating its available aviation fuel whenever it received a shipment of Ground Fuel.

The JTLS-GO Design Team is considering alternative methods to easily provide the user with available fuel summary information. Until a design can be approved, a more well-defined definition of a unit's fuel IMT parameter has been implemented. On the IMT Unit Logistics Screen, the fuel listed is different for each basic type of unit, using the following rules:

- Airbase - the sum of all aviation fuel held by the airbase.
- Squadron - the sum of all fuel that the squadron's aircraft can use.
- FARP - the sum of all aviation fuel that can be used by helicopters.
- Ground - the sum of all fuel that can be used by the unit's Combat Systems.
- Support - the sum of all fuel - no matter what it is used for.
- Naval - the sum of all fuel that the Ship can use.

3.41 JTLS-2023-16160 Error 5007 Correction Does Not Work

The corrections for SVP Error 5007 do not work. Error 5007 is generated when a parent TUP has zero combat systems to support a subordinate HUP or TUP.

The correction attempted to correct the problem by updating the combat system record for the parent TUP. The correction did not work, because the parent TUP did not have a combat system record to update.

Error 5007 will still be used to update the number of combat systems if a record exists. New Error 5018 was created to insert a new combat system record when the parent TUP does not have a combat system record.

3.42 JTLS-2023-16162 Canceled Mission Has Trouble Completing

If a mission had a Refuel Task scheduled when the user or the model cancels the mission, the mission may have trouble completing.

The issue was caused by the routine to compute the mission's next refuel location. When a mission is canceled, the model purposefully does not clear the mission's task list. This allows users to change their minds and easily get the mission to resume its original flight plan. The problem was that the cancel mission kept using the Refuel Task as its next refuel location, when in fact the mission's return base, as specified in the first "Mission Complete" task, should have been the next refuel location. The mission kept attempting to get to the next refuel location for no reason, which caused it to keep trying indefinitely. The logic was updated to avoid this situation.

3.43 JTLS-2023-16164 DCP User Unable To Change Glassfish HTTPS Port

The "Domain HTTPS Port" field was disabled for editing in the DCP, so the port number could not be changed.

There was originally a "Domain HTTP Port" field in DCP, and the relevant port numbers were changed through the DCP's HTTP port column. Since then, the HTTP Port field has been removed, the DCP lost the ability to change the port. To fix this, the code was modified to enable editing the "Domain HTTPS Port" field.

3.44 JTLS-2023-16165 Logic Error Checking Destroyed SSM Tear Down

The model generated a Logic Error when it checked whether an SSM site needed to be torn down. The specific SSM Target was destroyed and had a current status of zero. The Logic Error was generated because the code did not recognize a status code of zero.

It is well documented that a status of zero for an SSM target means it is destroyed. The code simply needed to account for the defined STATUS.DESTROYED., which indicates that nothing needs to be done with the target because the target is already assumed to be torn down. The model was functioning properly, and the inefficiency of generating a Logic error has been removed.

3.45 JTLS-2023-16168 Satellite Move Times Not Updated

As a satellite moved in orbit, the times of its last move and its next move were never updated on the JODA. This resulted in incorrect times on the Situation Report and IMT screen for Satellites.

Code was modified to publish the move times on the JODA each time a satellite moved.

3.46 JTLS-2023-16171 Replenishing Unit Can Enter Infinite Move Loop

When a Naval Unit is told to replenish another ship, the replenishing ship follows the intercept route logic so it continues to travel to the current location of the receiving ship. A naval unit conducting a move to get to the ship that was to be replenished entered an infinite movement loop, moving over and over to the same location.

The problem only occurs if the ship executing the task to replenish another ship cannot find a direct route or a sealane route to get to the ship being replenished. If the model needed to use the gridded terrain algorithm to get to the ship being replenished, the situation occurred.

The issue was that the gridded naval terrain algorithm never placed the final destination route point in the replenishing ship's route. The fix ensures that this last route point is added to the ship's route.

3.47 JTLS-2023-16173 Logic Error Checking Load Validity

If a user specifies a load for a specific air mission, the model ensures that the user-specified load is valid for the type of mission being flown. This routine generated a Logic Error for a MINE.CLEARING mission. This indicated that the model logic had not properly handled the case for MINE.CLEARING missions.

There are no needed load validity checks for a MINE.CLEARING mission. The mission's mine clearing capabilities are organic to the type of aircraft being flown and not the Aircraft Load being used. The code was modified such that no checks are required for a MINE.CLEARING mission.

3.48 JTLS-2023-16177 Missing Information For Satellite Detections

Some of the information was missing or categorized incorrectly when the model made detections using satellites. Specifically, when DSAs were used, the DSA name was not associated with the detection. The source of the detections was labeled as "External" instead of "Satellite" for these detections.

The code was modified to assign the proper DSA name to each of the detection items. For satellites, the detection source was changed from "External" to "Satellite".

3.49 JTLS-2023-16179 Error 5017 Correction Issue

When a correction for Error 5017 is made, the record goes blank.

Error 5017 is only created when the "Check Federation" data flag is set and the JTLS-GO default dry or wet unit of measure (UOM) are not compatible with the known federated model list of valid values. The Error 5017 correction asked the DDS to retrieve the record that contained the illegal UOM. The problem record was then displayed. When the user fixed the problem, the filter criteria based on the old UOM for the record no longer applied and the record appears to clear.

Because the global table value is a single record, no special selection criteria is needed. The selection criteria was modified to select the record without qualification.

3.50 JTLS-2023-16181 LC2IS Collapse/Expand Icons Missing

Within the browser-based interface for the LC2IS Message Service (LC2MS), units are arranged in a Command Hierarchy with a plus or minus (+/-) sign to permit expanding or collapsing a hierarchy. The capability exists, but the actual signs are missing.

A link from the scenario's webroot directory to the \$JGAME/data/icons directory was moved so that it appears as webroot/data/icons instead of webroot/icons. This prevents the Javascript command, which references the icons using a relative path like ../icons/..., from finding the icons associated with the actions. The Javascript relative path references were changed to ../data/icons/... to match the new location under webroot.

The Javascript files are also used by the OPM, with the icons copied into a directory under \$JGAME/<scenario>/onlineman/icons. The location of these icons had to be switched to \$JGAME/<scenario>/onlineman/data/icons to match the change to the Javascript. It was also decided to move the opm.gif file to this same location because it was copied from \$JGAME/data/icons. This change necessitated a change to the OPM source code to look for the icon in the new location.

The Command Hierarchy was printing the expansion/contraction icon on a separate line for the unit names due to an anchor point being created after the list item. The order of this creation was switched so the icon and the unit now appear on the same line.

3.51 JTLS-2023-16190 Limit Orders In Controller WHIP Menus

There were two orders in the Controller menus for the WHIP that are only meant to be used by technical control. These orders caused problems during an exercise when they were used by someone who did not fully understand their consequences.

The orders to Correct Object Tasks and Enter Debug were removed from the menus used by the WHIP for most Controller menus. Only the primary menu for a Controller WHIP contained these orders. This will allow technical control to limit access to these orders in the future.

3.52 JTLS-2023-16193 ATOT Remove Spaces In ACM Names From ACO

A new capability of this version of JTLS-GO allows users to create air missions that fly routes involving ACM objects, which are defined in the user's ACO or ATO. So, air mission orders that have this capability include fields filled with the name of the specific ACM. However, the ICC often includes spaces in the names of the ACMs. Order fields can not have spaces, so the order would fail verification.

The ATOT was modified to internally retain the ACM name as defined by the ACO, with any included spaces. When the orders are generated the ATOT substitutes the spaces in the ACM name with underscores whenever an order field is to reference the name of an ACM. This keeps the internal referencing accurate in the ATOT and referencing within the simulation accurate.

3.53 JTLS-2023-16195 WHIP Incorrectly Showing Context Sensitive Menu

Right-clicking on a faction with a short name of "CHI" in the IMT table produced a context sensitive menu for a ship called "CHICAGO_US". Right-click events on string values had two errors. It performed a regular expression find of the matching object name and compared the value with not only object names but also alias names. If the value did not match a map object name but matched an alias name, that object's context menu would incorrectly show.

The event that shows the context sensitive menu for the corresponding selection was changed to get the exact match of the context menu's object name, and to avoid comparing with alias names when attempting to show a context sensitive menu from the IMT table and the Message Browser.

3.54 JTLS-2023-16196 ATO Parser Flight Level Elevations Incorrect

The 1TRACK record used for an ACM includes a field for vertical dimension for each leg that is specified. The vertical dimension is decoded by using a single letter descriptor in front of the min and max elevation values. When the "D" descriptor is provided, the Parser should look for Flight Level values. However, it was looking for Relative Altitude values and produced an error message instead of computing the vertical dimensions.

The ATO Parser was modified to associate the "D" descriptor properly with the Flight Level values and compute the correct vertical elevation.

3.55 JTLS-2023-16197 ATO Parser Should Forbid Zero ACM Radius

When a RADARC air control mean area (ACM) includes a zero-length radius, the Parser passes this length to the ATOT. The ATOT then uses this radius when it creates the ACM order. An order to manage a RADARC ACM with zero-length radii will fail; it requires a minimum of 0.05 KM.

The ATO Parser was modified to convert radii of a RADARC to the minimum of 0.05 KM whenever it is smaller than this length.

3.56 JTLS-2023-16198 DDSR Synchronize Tool Cannot Update Location

The DDS Repository's Synchronization tool failed to update the location differences of units.

In the DDS, unit location is a pseudo field, that maps into two actual fields in the database. The server did not take that into consideration. The Glassfish server was changed to handle this situation.

3.57 JTLS-2023-16200 DDSR Synchronize Data

Sometimes, no data was downloaded when trying to load data into the DDS Repository's Synchronize Table.

This happened because the database account was not set up correctly. The source database account has to have Foreign Data Wrapper for synchronization. But the GUI did not capture the error message to inform the user of such error, so it appeared to hang. The code is changed to capture the error message during the download and inform the user in a popup window.

3.58 JTLS-2023-16202 JTOI ICC Remove User Credentials From Save File

The JTOI saved sensitive data to the configuration file, including the username, password, and COSI server address. Saving this information may lead to a security issue.

For security purposes, the connection information will no longer be saved to the ICC JTOI's configuration file.

3.59 JTLS-2023-16203 ATOT Does Not Generate ACM Orders

In the ATOT, whenever the option "Create ACMs" is not selected, ACM orders will not be produced. The ATOT should produce the orders for all the ACM objects when the "Generate ACMs" option is selected, regardless of whether "Create ACMs" is selected.

The user has two options for controlling the production of ACM orders, corresponding to airspaces defined in the ACO. The first option, "Generate ACMs", is intended to only produce the ACM orders from all other orders. The second option, "Create ACMs", is intended to control whether the ACM orders are produced when all other orders are produced. However, when the user selects "Generate ACMs", the ATOT should produce ACM orders, regardless of whether "Create ACMs" is selected.

The ATOT was modified to consider both options when doing translations of all orders, or doing translations of just the ACM orders.

3.60 JTLS-2023-16204 Improve Task Cancellation Message

A Player was unable to cancel a naval unit's JOIN.FORMATION task. The message from the CEP only indicated that the task had not been canceled. The message should be more informative.

In this case, Message 2205 was created when a user tried to cancel the Primary Task of JOIN.FORMATION for a naval unit. A simple message was returned, indicating the task was not canceled, but did not provide any reasoning.

The message was expanded to inform the user that a Formation primary task for a unit cannot be canceled. The unit needs to be removed from the formation and given a new task.

3.61 JTLS-2023-16207 OVT Did Not Work With Apache PKI

The Order Verification Tool (OVT) user interface could not verify orders when the game Apache was configured with Public Key Infrastructure (PKI).

The Apache PKI configuration generates user certificates. When Apache is configured with PKI, the OVT now prompts the user for a valid Apache client certificate and loads it to provide it in the Apache order verification and order submission requests. A PKI user certificate for the OVT UI can be specified in the ICP.

3.62 JTLS-2023-16208 ATOT Summary Shows Skipped Residual Missions

The Mission Summary generated by the ATOT shows all translated missions from the ATO. These missions will have corresponding orders to send. If the option to Process Residuals is not selected, all missions marked as residual will not be translated into orders and should not appear in the mission summary. However, the mission summary always shows all missions from the ATO, including the residual ones, whether the option to Process Residual is selected or not.

The ATOT was modified to skip any residual mission while generating the mission summary when the option to Process Residuals is not selected.

3.63 JTLS-2023-16209 ICP Allowed Apache PKI And Scenario Password

The ICP allowed setting Apache with both PKI and Scenario Password Protection. Configuring Apache with both PKI and the Scenario Password Protection provides no additional security to the authentication and authorization process of clients. In addition to adding an unneeded step to the user login procedure, maintaining and testing an unwarranted option is not beneficial to the JTLS-GO project.

The ICP now disallows setting both PKI and Scenario Password Protection by disabling the other option when one is selected. Users must deselect the option to enable the other.

3.64 JTLS-2023-16210 DDS Map Network Editing Sluggish

Users can edit networks in the DDS from the map. However, editing large networks, such as the flight path, caused the GUI's responses to be extremely sluggish.

The GUI map's responses were sluggish because the DDS downloaded all network data and drew them on the map. When editing, the process had to go through all the data to determine which one the user intended to edit. The DDS network display has been reworked to only draw the data inside the portion of the map that is visible to the user.

3.65 JTLS-2023-16211 Postponing Ship Patrol In ACM Crashes

A user attempted to postpone the current patrol for a naval unit that was patrolling in a new Air Control Mean Area. The model crashed.

The model was attempting to remove the object from an OPAREA. The naval ship was not in an OPAREA, but was patrolling a new ACM. The model logic was altered to check for this situation.

3.66 JTLS-2023-16212 Additional AAR Logistics Data Reporting

An implementation of logistics reporting to the AAR was included in JTLS-GO 6.2.0.0. Several sections of these data were overlooked in the model and not reported. The overall concept was to report all logistics interactions to the AAR to support the tracking of supplies.

Code changes were made to add the missing reporting for this project.

3.67 JTLS-2023-16214 Mobility Mission Unable To Move Unit

A mobility mission was ordered to move a ground unit. The mission was immediately canceled and the unit was not airlifted. The reason for the cancellation was due to problems with the unit's supplies. This did not make sense for the specified unit and aircraft.

The specified aircraft for the mission did not have a capability to carry a single piece of the highest priority equipment. As a result, the overall carry capacity for the mission was incorrectly set to zero and the mission was canceled. The code was corrected to properly keep track of the current carry capacity for the whole mission.

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.

The following list of issues is known and have not been fixed in time to make it into this release of JTLS-GO 6.2.1.0.

- The ATOT Spreadsheet Parser has been found to have numerous issues within the Spreadsheet format that are not caught and cause the spreadsheet parser to crash. Fixing the uncovered issues are being worked and should be fixed prior to the next maintenance of the JTLS-GO 6.2 series.

APPENDIX A. ABBREVIATIONS AND ACRONYMS

Terms are included in this Appendix to define their usage in JTLS-GO 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

ICPLogin	Interface Login Program
ID	Identifier
IFF	Identification Friend or Foe
IIP	Intelligence Information Prototype
IMT	Information Management Tool
INFO	Information
INTEL	Intelligence
JCATS	Joint Conflict And Tactical Simulation
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
JTLS-GO	Joint Theater Level Simulation - Global Operations
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
PKI	Public Key Infrastructure
PKL	Point Kill Lethality
POL	Petroleum, Oil, and Lubricants
POSIX	International operating system standard based on System V and BSD
PPS	Postprocessor System
PSYOPS	Psychological Operations
RAM	Random Access Memory
RDMS	Relational Database Management System
RECCE	Reconnaissance (air missions)
RECON	Reconnaissance (ground missions)
REGT	Regiment
RNS	Random Number Seed
ROE	Rules Of Engagement
RPT	Report
RSP	Reformat Spreadsheet Program
SAL	Surface-to-Air Lethality
SAM	Surface-to-Air Missile
SAM/AAA	Surface-to-Air Missile/Anti-Aircraft Artillery
SC	Supply Category
SCP	Simulation Control Plan
SDB	Standard Database
SEAD	Suppression of Enemy Air Defense

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

UOM	Unit Of Measure
USA	United States Army (U.S. and U.S.A. refer to United States and United States of America)
USAF	United States Air Force
USCG	United States Coast Guard
USMC	United States Marine Corps
USMTF	United States Message Text Format
USN	United States Navy
UT	Unit entity attribute prefix
UTM	Universal Transverse Mercator
VIFRED	Visual Forms Editor
VMS	Virtual Memory System
VTOL	Vertical Take-Off and Landing aircraft
WAN	Wide Area Network
WDRAW	Withdraw
WEJ	Web Enabled JTLS
WHIP	Web Hosted Interface Program
WIA	Wounded In Action
WPC	Warrior Preparation Center
WPN	Weapon
WT	Weight
WW	Wild Weasel
XMS	XML Message Service

APPENDIX B. VERSION 6.2.0.0 DATABASE CHANGES

Refer to the JTLS-GO 6.2.0.0 Version Description Document (VDD) for the list of database changes between the JTLS-GO 6.1 series and the JTLS-GO 6.2 series.

APPENDIX C. VERSION 6.2.0.0 REPOSITORY CHANGES

The R&A Database Team is continually adding and vetting unclassified data to expand and maintain the JTLS-GO Data Repository. Over the last year as part of the JTLS-GO 6.2 development effort, this entire process has been conducted in both the JTLS-GO 6.1 and JTLS-GO 6.2 versions of the repository. No specific, unique, additions were made to the JTLS-GO 6.2 repository. The repository delivered with this initial version of JTLS-GO 6.2 contains the same data as the JTLS-GO 6.1 version of the repository, except the format has been altered to meet the requirements of JTLS-GO 6.2.

Although R&A will continue to support JTLS-GO 6.1 for a minimum of one year, from here forward, all repository work will only be accomplished within JTLS-GO 6.2 only.