JTLS-GO

Version Description Document

May 2025

DEPARTMENT OF DEFENSE
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JOINT THEATER LEVEL SIMULATION - GLOBAL OPERATIONS
(JTLS-GO 6.3.5.0)

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ABSTRACT

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

This *JTLS-GO Version Description Document (VDD)* describes the new features of the Version 6.3.5.0 delivery of the configuration-managed JTLS-GO software suite.

JTLS-GO 6.3.5.0 is a Maintenance release of the JTLS-GO 6.3 series that includes fixes to uncovered software issues, an updated repository of standard data, and a demonstration scenario based in the western Pacific. This release includes the new Database Development System (DDS) Automatic Supply Calculation (ASC) tool. A summary of the new ASC capabilities is included 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:

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1.0 INTRODUCTION

1.1 SCOPE

This *JTLS-GO Version Description Document* (VDD) describes Version 6.3.5.0 of the configuration managed Joint Theater Level Simulation - Global Operations (JTLS-GO®) software suite. JTLS-GO 6.3.5.0 is a Maintenance delivery for the JTLS-GO 6.3 series of releases.

JTLS-GO 6.3.5.0 includes the entire JTLS-GO suite of software, a repository of engineering level data, and a realistic demonstration scenario, called “wespac63”, based on the Western Pacific theater of operations. There were no database format modifications between this Maintenance release and the original JTLS-GO 6.3.0.0 version. Appendix B of the original *JTLS-GO 6.3.0.0 Version Description Document* summarized the database format changes made between the JTLS-GO 6.2 series and this JTLS-GO 6.3 series of the software system.

Detailed description of the new Database Development System (DDS) Automatic Supply Calculation (ASC) tool is provided in Chapter 2.0. Chapter 3.0 summarizes the Software Trouble Reports (STRs) that have been corrected and are delivered with this version of JTLS-GO 6.3.

JTLS-GO 6.3.5.0 executes on the Red Hat Enterprise Linux Version 9.4 and Oracle Linux 9.4 64-bit operating systems. The Web-Hosted Interface Program (WHIP®) user workstation interface can be executed on any 64-bit 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 Air Services User Guide (*JTLS-GO Document 02, Version 6.3.4.0)
- *JTLS-GO Configuration Management Plan* (JTLS-GO Document 03, Version 6.3.0.0)
- *JTLS-GO Controller Guide* (JTLS-GO Document 04, Version 6.3.4.0)
- *JTLS-GO Director Guide* (JTLS-GO Document 07, Version 6.3.4.0)
- *JTLS-GO Executive Overview* (JTLS-GO Document 08, Version 6.3.0.0)
- *JTLS-GO Player Guide* (JTLS-GO Document 12, Version 6.3.4.0)

- *JTLS-GO Repository Description* (JTLS-GO Document 14, Version 6.3.4.0)
- *JTLS-GO Software Maintenance Manual* (JTLS-GO Document 15, Version 6.3.4.0)
- *JTLS-GO Entity Level Server User Guide* (JTLS-GO Document 19, Version 6.3.4.0)
- *JTLS-GO Federation User Guide* (JTLS-GO Document 20, Version 6.3.0.0)
- *JTLS-GO DoD Architecture Framework* (JTLS-GO Document 22, Version 6.3.0.0)

1.2.3 Updated Documents

- *JTLS-GO Analyst Guide* (JTLS-GO Document 01, Version 6.3.5.0)
- *JTLS-GO Data Requirements Manual* (JTLS-GO Document 05, Version 6.3.5.0)
- *JTLS-GO DDS User Guide* (JTLS-GO Document 06, Version 6.3.5.0)
- *JTLS-GO Installation Manual* (JTLS-GO Document 09, Version 6.3.5.0)
- *JTLS-GO WHIP Training Manual* (JTLS-GO Document 10, Version 6.3.5.0)
- *JTLS-GO Technical Coordinator Guide* (JTLS-GO Document 16, Version 6.3.5.0)
- *JTLS-GO Version Description Document* (JTLS-GO Document 17, Version 6.3.5.0)
- *JTLS-GO C4I Interface Manual* (JTLS-GO Document 21, Version 6.3.5.0)

1.2.4 New Documents

No new documents are required for this version of the software.

1.2.5 Delivered Software Components

JTLS-GO 6.3.5.0 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)
- Geo-Spatial Service (GSS)
- 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 214.
- Web Services Manager (WSM)
- Web-Hosted Interface Program (WHIP) and its component programs:

  Apache Server (APACHE) version 2.4.62

  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)

  JTOI_ICC302 - Used to feed NATO Integrated Command Control (ICC) Version 3.0.2 system.

  JTOI_ICC320 - Used to feed NATO ICC Version 3.2.0 system.

  JTOI_ICC340 - Used to feed NATO ICC Version 3.2.0 system.

  JTOI_ICC350 - Used to feed NATO ICC Version 3.2.0 system.

  JTOI_NECCCIS - Used to feed NATO Northern European Command, Command Control Information System (NECCCIS).

  JTOI_TBMCS - Used to feed US Theater Battle Management Core System (TBMCS).

- JTLS Interface Network Navigator (JINN)
- JTLS Order of Battle Editor (JOBE)
- 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.

  VCP63 - Converts a JTLS-GO 6.2 database to a JTLS-GO 6.3 formatted database.

Instructions for installing JTLS-GO 6.3.5.0 are provided in the *JTLS-GO Installation Manual*. Compared to the JTLS-GO 6.2 series, the JTLS-GO 6.3 series uses a significantly different version of PostgreSQL and the Linux operating system. If an organization has not already upgraded to the JTLS-GO 6.3 version, ensure special attention is given to following the documented operating system and PostgreSQL installation procedures. 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-GO.

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 “repository63”. 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 “wespac63”, which is suitable for training and demonstrations. The scenario has been updated to use the newest version of engineering level data.

1.3 INTERFACE COMPATIBILITY

1.3.1 Support Software

JTLS-GO 6.3.5.0 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 9.4, 64-bit architecture.

  JTLS-GO 6.3 has been tested with the following versions of Linux 9:

  RedHat Linux 9.4 - this operating system license must be purchased.

  Oracle Linux 9.4 - 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 Defense Information System Agency (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 be a 64-bit architecture with a Java-enabled web browser. JTLS-GO 6.3.5.0 has been tested on the following operating systems:

  Red Hat Linux Enterprise Edition Version 9.4

  Oracle Linux 9.4

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

- JTLS-GO 6.3.5.0 is delivered with the Adoptium project Temurin Java Development Kit (JDK) 1.8 Update 452 package. Both the ICP and DCP have the option for an organization to increase the maximum memory heap for the WHIP and DDSC. For large scenarios and databases, an organization should consider increasing the maximum heap size.

- JTLS-GO uses IcedTea to provide the Java Web Start capability that implements the web-enabled JTLS-GO functionality. JTLS-GO supports IcedTea version 1.8.4.

- JTLS-GO 6.3.5.0 is being delivered PostgreSQL 15.12 that has been compiled under Linux 9.4 and is bundled with the tar files for this release. This version of PostgreSQL is the latest security patch release of PostgreSQL and is being delivered in accordance with US Department of Defense Cybersecurity requirements. It is not necessary to use the delivered solution, but it is the easiest method to meet the requirements of JTLS-GO 6.3.5.0. There are several alternative methods available for obtaining the PostgreSQL 15.12 software. Refer to Chapter 6 of the *JTLS-GO Installation Manual* for additional installation details.

JTLS-GO 6.3.2.0 was released with PostgreSQL 15.8. There is no currently known available method to upgrade PostgreSQL 15.8 to PostgreSQL 15.12.

- If your organization requires the use of the most current security release of PostgreSQL, download each of your scenarios held by PostgreSQL. Install PostgreSQL 15.12 by following the instructions in Chapter 6 of the *JTLS-GO Installation Manual* and reload your scenarios.

- If your organization is willing to skip this PostgreSQL maintenance release, JTLS-GO will operate without error using the previously delivered PostgreSQL 15.7, PostgreSQL 15.8, or PostgreSQL 15.10 server. U.S. Government organizations should note that doing so may be contrary to your authority to operate JTLS-GO on Government computer systems.

- 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-2.0HLA 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.

- JTLS-GO 6.3.5.0, using the JODA service, allows connections and data exchange with customer client programs. The customer client programs are linked with a set of JTLS-GO-provided API libraries that permit a TCP/IP connection between the JODA and the client program. These API libraries, called JDSP libraries, are built for Linux and Windows and allow customers to built client applications on either of these operating systems. Below are the development environments under which each of the JDSP libraries are built:

  RedHat Linux 9.4 using gcc (GCC) 11.4.1 20231218 (Red Hat 11.4.1-3.0.1)

  Windows 10 using Visual Studio 2017 version 15.9.60 and Visual C++ 00369.60000.00001-AA807

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.

One of the DoD requirements is that the software must implement a methodology that ensures that the end user keeps the software up-to-date and all security patches are properly installed. In previous versions of JTLS-GO, Java 8, as delivered by Oracle, fulfilled this mandate by implementing an expiration date for its software. The concept of an expiration date has been removed from the DoD requirement, but the concept of always using the latest version of third-party software remains a strong component of DoD Cybersecurity requirements.

The following procedure has been established and approved by the JS/J7 Cybersecurity branch to meet the software update requirement:

- Within days of an Oracle Java security release, AdoptOpenJDK produces an equivalent version using infrastructure, build and test scripts to produce pre-built binaries of the OpenJDK class libraries. All AdoptOpenJDK binaries and scripts are open source licensed and available for free.

- Within two-weeks of the AdoptOpenJDK release, JTLS-GO provides a bug release version (JTLS-GO 6.3.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.

The JTLS-GO 6.3 series has been issued an Exit Gate letter and certification from the JS/J7 Cybersecurity branch. Please contact the U.S. Government Program Manager, Mr. Douglas Failor (douglas.l.failor.civ@mail.mil) to obtain the completed Cybersecurity paperwork.

1.3.3 JTLS-GO High Level Architecture Compliance

The JTLS-GO 6.3.5.0 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. Previous federation testing of JTLS-GO with CAE's GESI model has been accomplished using this FOM. The reader should note that the JTLS-GO Development Team, to date, has not been able to test this federation using this maintenance release of JTLS-GO. If there is interest in running this federation, please contact the JTLS-GO Help desk at jtlsgo@valkyrie.com.

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 6.3.5.0 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

Significant database structure differences exist between the JTLS-GO 6.3 series and the previous JTLS-GO 6.2 series database structure. Appendix B of the *JTLS-GO 6.3.0.0 Version Description Document* has a summary of all database changes. To upgrade your JTLS-GO 6.2 scenario to JTLS-GO 6.3 compatibility, see instructions listed in the *JTLS-GO DDS User Guide*, Chapter 3.1.

Due to changes made in support of STR JTLS-2025-17088 Missile Capability Does Not Have Torpedo, the record has been added to the JTLS-GO 6.3.5.0 Configuration Managed tw_missile_capability lookup table. This is not a database format change, but to make this new record available for the database building effort, users should **unload** their JTLS-GO 6.3 series scenarios prior to installing JTLS-GO 6.3.5.0, and then **load** them following installation. Please refer to Section 3.7 for more details.

Upgrading earlier JTLS-GO versions to the JTLS-GO 6.3 format will automatically correct the problem. No additional action is required.

Due to the mandated Cyber-Security improvements made to the Database Configuration Program (DCP) and the Database Development System Client (DDSC) for JTLS-GO 6.3.4, each PostgreSQL database scenario needs to be reconfigured. If you skipped moving in JTLS-GO 6.3.4, please execute the procedure in the following note for each JTLS-GO 6.3 scenario:

- Go to the $JTLSHOME/data/scenario/<scenario_name>/config directory.
- Delete the entire directory and its subdirectories.
- Start the new DCP and create the needed DDSCs.
- Each organization can decide whether they want to use the new encrypted password capability and the new DDSC privilege capability. Refer the *JTLS-GO Database Development User Guide* for information concerning the new DCP interface.

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 6.3.0.0 formatted data from your PostgreSQL database server into the JTLS-GO 6.3.0.0 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

Users are reminded that organizations should not make any modifications to the Default Symbol Set delivered with JTLS-GO. End-user organizations are free to use the Default Symbol Set in their scenarios and alter the scenario symbol set to their scenarios to meet specific organizational needs.

The JTLS-GO Default Symbol Set has not been changed since August 2020. At that time, some new symbols were created to meet end-user requirements. No previously existing symbols were deleted nor were any of the preexisting symbol names changed. If any existing scenarios have not moved to this new Default Symbol Set, this means that the user can easily move in this new symbol set. 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

The JTLS-GO Database Team has continued to improve and expand the unclassified data repository, which has been renamed to “repository63”. 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. Specifically, significant effort has been started to represent additional Combat Systems to more closely match the Combat Systems recognized by the Joint Live Virtual Constructive (JLVC) federation of models. This effort is expected to be an ongoing effort for the next three to five months.

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 15.12.

Reminder: Ensure existing JTLS-GO Version 6.3 databases held in the PostgreSQL table-space are unloaded prior to installation and reloaded after installation, as explained in Section 1.4.

2.0 ENGINEERING CHANGE PROPOSALS

Two Engineering Change Proposals (ECP) are delivered with this release.

2.1 JTLS-0293 Redesign Automatic Supply Calculation Tool

Summary of Model Change Request

The redesign of the Automatic Supply Calculation Tool (ASC) was added to the JTLS-GO 6.3 series because it is not a model functional change, but is needed to help numerous end-user organizations planning to conduct major exercises using the JTLS-GO 6.3 series within the next year. This ECP solves many of the issues with the old version of the ASC, but is not closed as a result of this delivery. The second half of the ECP, improving the ability to update individual unit logistics data, will be delivered in June 2025 as part of the next maintenance release of the JTLS-GO 6.3 series.

The Automatic Supply Calculation DDS utility (ASC) is responsible for automatically computing supplies for:

- Tactical Unit Prototypes (TUPs) - this capability is delivered in this version.
- Ship Unit Prototypes (SUPs) - this capability is delivered in this version.
- Highres Unit Prototypes (HUPs) - this capability will be delivered with JTLS-GO 6.3.6.0 in June 2025.
- A specific Unit instance - this capability will be delivered with JTLS-GO 6.3.6.0 in June 2025.

Design Summary

The tool is designed to compute the supplies needed to:

- Support Combat Systems - Within JTLS-GO, each Combat System can be drawn from a database-defined Supply Category and has defined weight in the database. The ASC is responsible for computing the starting supplies needed to support the Table of Organization and Equipment (TO&E) Combat Systems specified for the object. If replacement Combat Systems are needed by a unit, the JTLS-GO logistics model must move the required weight of the designated supply category to the unit using any of the available, modeled supply movement capabilities.
- Represent Supply Consumption - Within JTLS-GO, supplies can be consumed based on the status of the unit during game play. If the desire is to have JTLS-GO consume supplies based on combat status and movement status, the Supply Category needs to be designated as consuming supplies on either a “Per Day” or “Per Person Per Day” basis.

The database then contains data indicating the rate of supply usage under various conditions. The ASC is responsible for taking the rate data and computing the needed supplies under user-specified expected status assumptions.

- Plan For Explicit Supply Usage - Explicit supply usage is based on Player-ordered tasks given to units, such as firing Artillery, firing Missiles, or flying Air Missions. This ECP is primarily geared towards improving the explicit supply usage computation.

Within the DDS Client, there is a new ASC Menu structure. Each of the computations has its own input panel in which the user enters the assumption data that should be used to compute the needed supplies for the TUP, SUP, HUP, or individual unit.

From the ASC table dialog, after specifying the parameters for the supply calculation, the user should click the “Continue” button at the bottom of the panel. This will send the computation request to the DDS Glassfish server. Unlike the previous ASC dialog, the window does not go away at this point. Instead, a status text area will appear at the bottom of the dialog to display the status of the required data retrieval from the server, and a summary of the resulting computations. A list of adjusted Supply Categories will be displayed using the following symbology:

- “~1” indicates the record has been updated.
- “+1” indicates a new supply record has been inserted.
- “-1” indicates the record has been deleted or zeroed out.
- “-s” indicates the record was skipped because the specified calculation parameters made the record of no interest to the computation.

When the status indicates the ASC process is finished, the “Continue” button on the ASC dialog will be changed to “Done”. Click on this button to dismiss the dialog. Note that the ASC dialog is modal - if the dialog is up, the user will not be able to access other parts of the DDSC.

Finally, a user may also find it useful to examine the tup_sc and the sup_sc table history records.

2.2 JTLS-2024-16930 Change Data For All COMAO Missions

Summary of Model Change Request

NATO’s air planning process includes the concept of a Composite Air Operations (COMAO) package. A COMAO is an operation consisting of multiple air missions using multiple different air platforms to fulfill multiple roles in support of a specific objective. A COMAO can consist of a wide variety of missions types over a period longer than the current JTLS-GO concept of an Air Mission Package. For this reason, during a NATO exercise, all COMAO missions are built as individual missions. It is not unusual for a COMAO to include ten to twenty missions.

Often the Response Cell, during dynamic exercises, asks CAX operators to change the timings of a given COMAO, Since COMAO missions are represented as independent missions, the CAX operator must change the time requirements for each mission. This is a tedious job, can easily introduce timing errors to the well-coordinated plan of the COMAO, and takes time away from the CAX operators handling current operations, This ECP requests that JTLS-GO be given the capability, through the entry of one order, to adjust the time of an entire COMAO package.

Design Summary

The process of adjusting the desired execution time of a COMAO is informally referred to as “roll execution” or ROLEX. As shown in *Figure 2.1*, a new ROLEX COMAO order has been added to JTLS-GO.

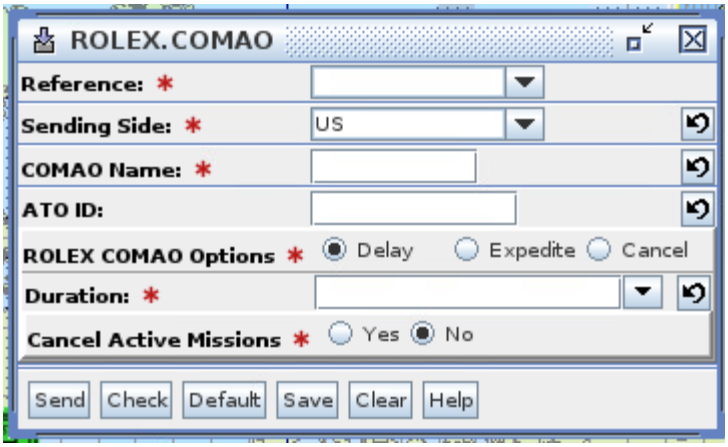

Figure 2.1 New ROLEX COMAO Order

Using the new order, the following tasks can be conducted:

- Expedite the entire COMAO - each mission in the COMAO will have its time of execution changed to occur earlier. If this order is entered too late, it is possible missions will not be able to meet the desired Time on Task (TOT). If feasible, the mission will increase its speed to meet the new TOT requirement.

- Delay the entire COMAO - each mission in the COMAO will have its time of execution changed to occur later. There are four situations in which a COMAO mission can exist when the order is submitted to the model. The model logic used under each of these circumstances is:

  a. Missions Currently Scheduled - These missions have not gone through their resourcing event. New launch times and resourcing event times are computed and scheduled to meet the delayed TOT.

b. Missions Currently in Pre-Launch - These missions have gone through their resourcing event and are holding aircraft, fuel, and weapon resources. All resources are returned to the appropriate unit and a new resourcing event time and launch is computed. Note depending on the length of the delay, it is possible that a mission will immediately go through its resourcing event again or at a future time.

c. Missions Currently in Delay - These missions have gone through their resourcing event but enough resources were not available; therefore, the mission is in a delay state. Even though the mission is not launch capable, it is still holding some of the resources needed to become launch capable. These missions are handled in the same way that Pre-Launch missions are handled. All of their resources are returned and new resourcing and launch events are computed and scheduled.

d. Active Missions - The ROLEX COMAO Order was entered too late and some of the COMAO assigned missions have already started to fly. The order allows the CAX operator to choose whether the model should automatically cancel these missions or simply notify the player of the situation so individual mission adjustments can be ordered. One side note: Air missions that are in a non-resource delay status are considered active missions. Thus, missions in “Runway Delay” or “Weather Delay” are active missions and fall under this category.

- Cancel The COMAO - All missions assigned to the COMAO are canceled.

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-2025-17081 Fortify Scan Revealed Three High Issues

The Fortify scan of the JTLS-GO 6.3.4.0 release revealed three issues to be addressed.

The GSiteParser and JsdcParser classes had "Unreleased Resource: Streams" issues. A constructor did not close an opened InputStream. This resource is now closed.

The JsdcParser class had an "XML External Entity Injection" issue. The *external-general-entities* and the *external-parameter-entities* properties for the transformerFactory object were not disabled in the method saveData(). These two properties are now disabled.

3.2 JTLS-2025-17082 Checking IADS Network Follows Comm-ADA Site Links

For an Air Defense site to fire on a missile, the site must be on an Integrated Air Defense System (IADS) network and connected to a sensor that is covering the missile. This check is solved by following the IADS network from the ADA site through Comm Site - Comm Site links, looking for a Comm Site - Radar Site link where the Radar Site has coverage on the missile.

In the routine FOLLOW COMM LINK, which follows Comm - Comm and Comm - Sensor links, the Comm - ADA links are also erroneously processed as Comm - Comm links.

The code was modified in the specified routine to ignore the Comm - ADA links.

3.3 JTLS-2025-17084 SDC Not Showing Game Time in WSM Status Tab

The Scenario Data Client (SDC) program has the ability to read a filter interface file that lists tables that should, or should not, be populated. The introduction of the SDC Filter Interface tool has made setting these filters easier.

The SDC was set up to only populate the SDC_TARGET table. This resulted in the SDC always showing the game start time when viewing the status tab in the Web Services Manager (WSM), because the Simulation State objects, which contain the current game time, were filtered off. The ability to see the current game time for the SDC is important because it indicates if the SDC is maintaining pace with a running game, especially when running at high game speeds.

Handling code for Simulation State objects already existed to extract the current game time and game speed before updating the database table associated with the object. However, this code existed after the filter check on the object type for both creates and updates of JDS objects, and was not processed unless the Simulation State filter was turned on.

The code was moved to process before checking the object filters, ensuring it is now always processed.

3.4 JTLS-2025-17085 SDC Error Messages Zero Bytes Of Memory

When the SDC is brought up, it produces a number of error messages stating that there is an attempt to reserve zero bytes of memory.

This was tracked to the JDSP attributes that specify what weapons a unit can use for artillery fire, missile fire, and mine laying. Numerous units do not have some of these capabilities, which is indicated by a zero length array. The SDC would attempt to reserve an array of the same size (a request for zero bytes of memory), and then copy the data into the local array. This created the error messages. The only adverse effect from these messages was to fill up the SDC error log and the disk.

The code was modified to set the array variable to NULL after releasing any previous array, and to check the array length before requesting memory for the new array.

3.5 JTLS-2025-17086 AAR BDA Victim Assessment Report Hull Hits

When viewing the Damage by Unit version of the Battle Damage Assessment (BDA) Victim Assessment Report, the hull hits table is three columns long: “killer name”, “victim name”, and “number of hits”. However, data only exists for “victim name” and “number of hits”, leaving the “killer name” column empty.

Additionally, the headers for “victim name” and “number of hits” are generic, instead of the desired text, indicating a name mismatch.

The stylesheet that renders the report was fixed to only show the two valid columns, and the name mismatch for both column headers was fixed.

3.6 JTLS-2025-17087 AAR BDA Victim Assessment Report Controller Kills

The Controller sent a number of Assess Weapon Damage orders, causing extensive damage to a number of units and targets. When the BDA Victim Assessment report was used to determine the damage, specifying an attacking side of “NO_SIDE” to represent the Controller action, no damage records were returned.

Analysis of the situation uncovered two issues:

- The killer object in this case is a Player order, which was not being considered in the retrieval.
- The killing side (NO_SIDE) was being translated from an integer into text using the Force_Side vocabulary item, instead of the No_Force_Side vocabulary, resulting in an invalid side name.

Both these issues were fixed, and a review of other reports using a side of NO_SIDE on the order panel was conducted. Three other reports were also discovered to allow a Force Side of NO_SIDE, but using the wrong vocabulary group for the translation within the code. Some were using NO_SIDE to represent Controller actions, others to represent unowned/unassociated targets. These were also fixed.

3.7 JTLS-2025-17088 TW Missile Capability Does Not Have Torpedo

The drop-down list for the Targetable Weapon (TW) Missile Capability does not contain the TORPEDO option. The first implementation of TW Missile Capability types included the CRUISE, BALLISTIC and HYPERSONIC options. A fourth option was needed to differentiate an airborne cruise missile from a subsurface cruise missile (torpedo).

The TORPEDO option was implemented in the Combat Events Program (CEP) and Scenario Initialization Program (SIP) code, but was not added to the database schema.

The TORPEDO record was added to the related lookup table for the TW Missile Capability types in the Database Development System (DDS). To activate the correction for this STR, an end user organization should unload all existing JTLS-GO 6.3 series scenarios and reload the data after installing this maintenance release.

A review of the data repository (repository63) was conducted and all Targetable Weapons that represented Torpedoes were changed and now properly refer to the new TORPEDO record.

If a user's TW data is based on the JTLS-GO delivered repository, the JTLS-GO Database Team **strongly** suggests that, after unloading and reloading your scenario data, the synchronization capability should be used to quickly update existing scenario TW data.

3.8 JTLS-2025-17090 Complete Naval Task Patch

There was a crash in Complete Naval Task. The ship that was supposed to be completing a Naval Mine Laying task had no tasks in its task list.

The exact cause of crash could not be determined. A patch was added to the code to check for the situation. It is possible that this was caused by the misuse of the Correct Object Task Order. STR JTLS-2025-17171 Make Correct Object Task Critical Order, Section 3.61 has altered the order to make it easier to determine if the misuse of the order is causing the problem.

3.9 JTLS-2025-17093 Mission Adopts Intercept Speed Before Committing

An air mission increased its speed to maximum before being committed to an intercept.

In the logic that determines whether the mission can legally fire air-to-air weapons, a code error permitted the mission to speed up in certain situations, even though it was not currently intercepting. The error was corrected to first make sure the mission was currently intercepting before adjusting the mission's speed.

3.10 JTLS-2025-17094 IADS Nodes Do Not Move

When a mobile IADS node moves, the WHIP IADS network does not update.

The IADS node did not move on the WHIP when the owning unit moved normally or magically. A review of the CEP code showed that the IADS node's latitude/longitude and XGRID/YGRID coordinates were not updating as the unit moved. Code was added to update the node's location and then report the update to the JDS.

When testing this fix, it was observed that the IADS nodes' locations were updating, and the nodes were being redrawn on the WHIP properly. However, the IADS arcs remained at their original positions and were not redrawn to follow the moving nodes. A correction was made in the WHIP code to redraw the arcs between the updated nodes.

3.11 JTLS-2025-17095 ATOT Not Writing Side List Utility Into Groups

When Order Groups are moved between different scenarios using the Tech Tool, utilities not included in the groups, but which are referenced by orders in the groups, are not moved along with the Order Groups.

The ATO Translator (ATOT) is not including the Force Side List utility in both the Air Control Mean (ACM) Order Group and the Basic Order Group. Moving the Order Groups causes a "missing utility" error on the WHIP in the game to which the Groups were moved.

The ATOT was modified to include the Force Side List utility in each of the Order Groups containing orders referring to the Force Side List utility.

3.12 JTLS-2025-17096 AARC Memory Leak While CEP Is Connected

The AAR Client (AARC) service consumes memory while processing data from the JODA, which flows to the AARC while the CEP is connected. It normally requests and then returns the memory as it processes the data. However, even when the CEP is idle, the AARC increases its requirement for system memory without reducing its consumed memory.

The AARC periodically gains and removes objects in local memory as part of its main loop. A routine used for removing objects will request a list to hold all the objects prior to checking each object. When the routine finished with the list it was not returning the memory used by the list. This has been corrected.

3.13 JTLS-2025-17098 Check Missile Capability Type Code

The Missile Capable Flag in 6.3 is no longer a flag but a type, but is still identified in the SVP Template as a flag.

All uses of the TW.MISSILE.CAPABILTY type were checked to ensure they were correctly identified and functioning as a type, and not a flag, in the SIP and SVP code.

3.14 JTLS-2025-17099 Remove Password From .jnlp File

The whip.jnlp and tripp.jnlp files contain a user element and a Apache scenario password hash element. The WHIP/TRIPP use these parameters to determine whether the Apache instance is password-protected. This presents a security vulnerability.

The user/password elements were removed from the whip.jnlp and tripp.jnlp files. The WHIP/TRIPP will no longer depend on any flags in the .jnlp file, and will instead use the initial Apache response to determine whether a password or client certificate is needed to authenticate itself.

Unused DCP and DDSC code to export the password was also removed.

3.15 JTLS-2025-17100 Allow Comparison of Aircraft Type To Value Zero

If the user wants to Attach two units that own aircraft, both the attaching and accepting unit must own aircraft of the same type (such as “F16” or “C130”). The Attach order XML file represents this as a field restriction, where either the attaching unit or accepting unit’s aircraft type must be zero (meaning the unit does not have an aircraft type), or the attaching unit aircraft type is equal to the accepting unit aircraft type.

The Order Management Authority (OMA) rejected the order if one of the units had an aircraft type but the other did not. The OMA knew the aircraft type as a JODA Entity Data Identifier (JEDI), but the value of zero was an integer, so the OMA could not compare the two values because they are different types of objects.

Code was added to check if the first value of a binary comparison is a JEDI and the second is an integer, and if so, to treat the second value as a JEDI instead, which allows the OMA to compare the objects as like types.

A minor spelling error was corrected in the order file for the help text informing the user of the problem when the unit aircraft types did not match.

3.16 JTLS-2025-17102 Create Squadron Without Home Base Crash

If a user creates a squadron during the game, and does not assign it a home base or alter its location as part of the TPFDD order to bring the unit into the game, the model crashes.

The crash happens because the unit has a legal latitude and longitude, but it has not been assigned any grid coordinates. To ensure that the unit has the correct grid assignment, the model now takes the arriving location for every unit and updates its grid coordinates prior to placing the unit in a grid.

3.17 JTLS-2025-17104 Change Unit Strength With Targets Message Lost

JTLS-GO 6.3.4.0 was released with ECP JTLS-2013-11738 to expand the Controller Change Unit order to include the capability for the Controller to specify how the damage was supposed to be

implemented. The old method used database probabilities to compute random damage. The improvement allowed the Controller to indicate deterministic damage was preferred. To implement this capability, a completely expanded message was created to inform the Controller the results of the processed order.

If the order included the option to also damage the targets owned by the unit, the message was not generated.

When the target damage was computed, the algorithm generated a separate message for each owned target that was damaged. When these target damage messages were generated, the original Controller Change Unit message was lost.

The problem was fixed by using what is known as a "Widespread Message". This same methodology is used for other large-scale changes such a Unit Magic Move or Magic Move Formation order, in which related capabilities can generate messages causing the primary message to be lost.

3.18 JTLS-2025-17105 DCP Cannot Set Up Destination Domain

When setting up a destination domain in the Database Configuration Program's (DCP), clicking the "OK" button caused exceptions to be thrown, and no destination domain was set up.

This was caused by freezing the DCP DDS Clients table's name column. The code is now fixed.

3.19 JTLS-2025-17106 NBC Attrition Crash

The CEP crashed when evaluating casualties from exposure to chemical or nuclear agents. The model was calculating the number of replacement personnel that should be killed based on the weight of excess supply category personnel, divided by the weight of a crew member. In this database, the Crew combat system had neither a resupply category nor a weight, which is legal, but caused a divide by zero crash.

Instead of using the weight of a crew member, the code was modified to use the mean weight of Combat Systems derived from the supply category for personnel. This could still be zero, so a check to avoid the divide by zero was added.

3.20 JTLS-2025-17108 Trusted User Fixes

Several problems were identified with the Trusted User configuration:

- The getchkpt.tmplt script was not using the remote system's JGAME path to locate checkpoints.
- The specialPermissions script was not changing the permissions on user-managed certificate files. This prevented users from being able to start the Apache process.

- The Trusted User ".jtlssite" file recommended configuration executed xhost commands even when no graphical environment was detected. This caused errors to be printed to the screen.

- The Trusted User ldconfig instructions failed to include a step to delete the /etc/ld.so.cache.

The following fixes were made to the Trusted User configuration:

- The getchkpt.tmplt script now uses the remote system's JGAME path to locate checkpoints.

- The specialPermissions script now changes the permissions on user-managed certificate files.

- The Trusted User ".jtlssite" recommended configuration no longer executes xhost commands when no graphical environment is detected.

- The Trusted User ldconfig instructions now includes a step to delete the /etc/ld.so.cache.

3.21 JTLS-2025-17109 TRIPPs Launching As WHIPs

TRIPPs were being launched as WHIPs due to a missing argument in their JNLP file.

TRIPP JNLP files were modified to properly include the arguments to launch as a TRIPP.

3.22 JTLS-2025-17110 Tech Tool Order Group Copy For Trusted Users

In a Trusted User configuration environment, the Tech Tool's Order Group Copy was failing to access the designated remote host's scenarios. The path of the base JGAME directory could not be accessed using the Secure File Transfer Protocol (SFTP) alone. It required tunneling the JTLS-GO environment variable's path via Secure Shell (SSH).

An SSH connection is used to pass the remote path of the available scenarios. Once the path is properly established, Order Groups and Map Slides can be copied via SFTP between scenarios in a multi-user and single-user environments.

3.23 JTLS-2025-17111 Provide Verification Of WHIP Menu Files

In a previous release, the WHIP menu files were modified from being a single file containing all data into a distributed file system, with a master file referencing a specific order menu, an IMT menu, and the standard context menus, and order spreadsheet menus being assigned based on the WHIP type of player or Controller.

When this redesign was done, the XML Schema Definition (XSD) for the menu files was not updated to reflect the distributed nature of the files. This XSD is used both internally for

validation of the Configuration-Managed menus and is available for end-users to validate customized menus. Due to the failure to update the schema, menu file verification was failing.

The single XSD file was broken into multiple XSD files, one for each type of new distributed XML menu file. The checkmenu script was updated to identify the XSD that should be used for validation based on the naming convention used for the various menu files. The stylesheet that is used to verify specific, non-schema related, data within the files was updated to recognize the type of file and to perform the relevant checks based on the type.

3.24 JTLS-2025-17119 User Ordered Air Mission Speeds

A user can change the speed of any air mission using one of three orders: Change Mission Parameter, Magic Air Ops, and the Change Speed quick order.

If the user does not change a mission's speed, the model will automatically tell the mission to fly at its database-designated Cruise Speed. If the mission has not been given a specific speed by a user, the model is able to adjust the mission's speed algorithmically under the following circumstances:

- When the mission is intercepting an enemy air mission.
- When the mission is a part of an Air Mission Package and is late for its designated time-on-target.

The model was not properly distinguishing between missions that were and were not given a specific speed by a player. Furthermore, once the user gave a mission a specific speed, even if that speed was to use the aircraft's Cruise Speed, the model came to the conclusion that the automatic rules could not be invoked.

Every air mission has an attribute called AM ORDERED SPEED. When this was introduced into JTLS-GO, it was only supposed to be set when a Player specifically altered the mission's speed by using one of the speed adjustment orders. Later, the attribute was being used to hold the Cruise Speed when a mission took off.

The problems were fixed, but it is important to fully understand the exact logic that is used:

- The mission has an ordered speed of zero when it is initialized and it will remain as zero unless the user enters one of the three specific change speed orders.
- When the AM ORDERED SPEED is zero, the model will:

  Adjust the mission's speed during an interception task to get into position as quickly as possible.

  Adjust the mission's speed when in an Air Mission Package to ensure all missions hit their assigned targets at exactly the same time.

- When a user gives the mission specific speed instructions, the model relinquishes all responsibility for the speed of the mission. The mission will fly at that speed, even if it lands for fuel or to pickup assets, and then takes off again. This was the logic that has always been used.

- If the user has given a mission a specific speed, the orders to use a specific assigned speed can now be vacated by ordering the mission to fly at a speed of zero. When this order is processed, the mission's AM ORDERED SPEED attribute is set to zero, and its current speed is set to the aircraft's Cruise Speed. The automatic speed adjustment algorithms will be invoked when and if needed.

3.25 JTLS-2025-17121 Auto Intercept Adjust Speed

The new logic that automatically adjusts mission speed while intercepting did not function correctly in every situation. The logic was setting the mission's ordered speed attribute each time speed was adjusted. By design, the ordered speed is intended to hold the Player-specified speed, as clarified in STR JTLS-2025-17119. As a result, the original ordered speed was replaced with the adjusted interceptor speed, which prevented the mission from following the Player's original directive during and after the intercept.

The new logic was modified to treat the ordered speed as it was intended. A positive ordered speed indicates the Player has specified a speed. When the mission intercepts a victim air mission, the speed will not automatically change. An ordered speed of zero indicates the Player has not specified a speed, which permits the speed to be automatically adjusted during an intercept according to the following rules:

- If the interceptor is within optimum firing range (but not the permitted Rules of Engagement distance), between the interceptor and victim, fly at maximum speed.

- If the interceptor is within optimum firing range and ROE distance, match the victim’s speed.

- If the interceptor is not within optimum firing range and the interceptor is unarmed, fly at maximum speed.

- If the interceptor is not within optimum firing range, but within maximum range and the interceptor is armed, match the victim’s speed.

- If the interceptor is not within optimum firing range and outside of maximum range, fly at maximum speed.

3.26 JTLS-2025-17123 VCP Crashes Writing Federation Avail Model Data

The Version Conversion Program (VCP) crashed during conversion of a 6.2 scenario to 6.3. The crash occurred while Federation Avail Model data were written out.

The problem occurred because the VCP was referencing the Joint Deployment Logistics Model (JDLM). That model has been replaced by the Virtual BattleSpace (VBS) model. All references in the VCP to JDLM have now been replaced by VBS in the VCP code.

3.27 JTLS-2025-17124 RSP Exits Rather Than Connect To JODA

The Reformat Spreadsheet Program (RSP) failed to read order files after start up and simply exited without prompting for user input.

The RSP did not have access to the new environment variable "JTLSUSER", which is now required to make a connection with the JODA as a result of the new Trusted User ECP. Without the ability to connect and receive simulation data from the JODA, the RSP simply exits.

The RSP was modified to properly obtain the JTLSUSER variable and make a JODA connection.

3.28 JTLS-2025-17125 ATOG Missing ACM Names In ROUTE Records

The ATO Generator (ATOG) does not include the name and time for an ACM task in a ROUTE record for the same ACM listed in the AMSNLOC (air mission location) record. The ATOG simply uses a coordinate point from the ACM with no time. This causes a problem where the ATOT assumes these are two separate task locations.

The ATOG source code for writing MTF-formatted ATOs was modified to pass the name and time of the AMSNLOC task to the routine that writes the ROUTE record.

3.29 JTLS-2025-17126 ATOG Produces Too Short Mission Names

The ATOG uses a unique four-digit code as the name for each mission in the generated ATO message. This name, along with the associated ATO ID, are used in the ATOT to assign a mission name in JTLS-GO.

However, the NATO ICC and US TBMCS systems use a mission type code and prefix ID with mission names they use. This expands the name enough to satisfy the minimum length required for JTLS-GO. Using the four-digit name with the ATO ID gives a name length error while checking each mission order generated by the ATOT.

The ATOG was modified to include a mission type code and ID for each mission name, similar to ICC and TBMCS.

3.30 JTLS-2025-17127 Access Owning Unit From Target Page Inoperative

The “Owning Unit” link on the OPM pages for individual Targets did not work.

The link to the Owning Unit page was improperly set up. This has been corrected. Additionally, there was a problem in the code that connected the link to the wrong Unit. This has also been corrected in the model logic.

3.31 JTLS-2025-17128 Player Aircraft Load Assignment OPM Link

The link to the Aircraft Load Assignment Data does not work on a Player OPM.

The Aircraft Load Assignment Data are only written once, for the Controller OPM. The step linking the Player ac_loads directory to the Controller ac_loads data was not completed. This has been corrected.

3.32 JTLS-2025-17129 OPM Force Side Support Structure

The Unit support structure for one Force Side contains units from other Sides.

The array used to build the Unit support structure data was not cleared before the current Force Side units were added. This has been corrected and the OPM now properly generates the Unit support structures.

3.33 JTLS-2025-17130 Pipeline OPM Display

Pipelines are currently only displayed for the Controller and Owning Force Side. Pipelines should be displayed for all Sides, as they are fixed to the ground and visible.

The OPM now generates pipeline data for all Sides:

- The Controller always sees the operating unit of the pipeline, if there is one.
- The owning Force Side also sees the operating unit.
- All other Force Sides see a blank in the pipeline data for the operating unit.

3.34 JTLS-2025-17131 Missing OPM links and Pages too Large to Load

The following pages and links existed on the original version of the Unit OPM page, but are missing from the new version of the Unit page tables:

- **Unit initial supplies are written in a single table linked from the specific Unit page. The table contains every Unit, even if it has no initial supplies. There should be no link to the table if the Unit has no initial supplies.**
- **The specific Unit page does not have an entry linking to the Unit subordinate's page. This Unit subordinate page also contains all Units, even those with no subordinates. This link should also not exist if the Unit has no subordinates.**
- **The specific Unit page does not have an entry linking to the Units' owned targets. This Unit Owned target page also contains all Units, even those with no owned targets. This link should also not exist if the Unit has no owned targets.**

Each of these problems was addressed:

- The code for the Unit Initial Supply page was modified to only list Units that have initial supply data in the database. Other Units will not appear on the page and will not have links to the page from the primary Unit's page.

- A link to the Unit Subordinates page was created on the specific Unit page. The code for the Unit Subordinates page was modified to only list Units that have subordinates. Other Units will not appear on the page and will not have links to the page from the primary Unit's page.

- A link to the Unit Owned Target page was created on the specific Unit page. The code for the Unit Owned Target page was modified to only list Units that have owned targets. Other Units will not appear on the page and will not have links to the page from the primary Unit's page.

3.35 JTLS-2025-17132 Future Obsolete AAR Records Not Deleted

The CEP was stopped without a checkpoint, backed up to the previous checkpoint, and restarted. When this happens, the AARC is responsible for cleaning up the old records from the open-ended run. This did not happen, leaving obsolete records in the database, which then caused issues with new records being inserted.

The code existed to delete the records, with the checkpoint text surrounded by single quotes (’). This is the format that would be required on the command line, because the checkpoint is a text column. However, the Embedded C PostgreSQL was treating the single quotes as part of the text entry, rather than a demarcation for the text entry. The single quotes were removed and the records are now properly deleted.

It was also noted that every time the game comes up, all units and targets that are part of a JDPI or BE Facility send a join notice. This should only happen on game start. This error was also fixed.

3.36 JTLS-2025-17133 Add Index Counts To OPM Pages

On OPM entity pages, it is useful to know the total number of entities that exist in the database. The number of entities needs to be added to the title line of OPM pages.

The entity or record count was added to OPM pages as needed.

3.37 JTLS-2025-17134 AAR Retrievals by WHIP Name Do Not Work

AAR orders and reports can limit retrieval of objects, based on the Force Side of the WHIP/TRIPP. The AAR Glassfish has been using the WHIP/TRIPP name to determine the Force Side, assuming that anything before the first underscore is the Force Side (thus, the WHIP named "US_WHIP" would belong to the "US" side).

However, there is no requirement that WHIP/TRIPP names be based on their Force Side name, nor does the current method support multi-sided WHIPs/TRIPPs.

The AAR Glassfish was modified to look up the Force Sides that WHIPs/TRIPPs belong to in the <scenario>.cif file. The retrieval queries for objects were switched from being an equality match to being within the set of possible sides.

3.38 JTLS-2025-17135 DDSC Change Unit Type Fails

When changing Unit Type in the DDS, a database error message complaining about a null Unit C4I Name. Consequently, no Unit could change its Type.

This was caused by the new C4I Name column added to the database schema, but the data file that tracks the equivalent columns among Unit and Target tables was not updated to include the new parameter. The new data column was added to the file.

3.39 JTLS-2025-17136 AAR Vocabularies Loaded with Wrong Side Indices

As part of the initialization process of the AAR database, a Java program is run that loads the static vocabulary and each Side's dynamic vocabulary data into the AAR database. This vocabulary data is arranged by Side index.

The Java program determines which data to load by looking for dynamic vocabulary files in the $JGAME/<scenario>/webroot/ directory, and ordering them alphabetically for sequential indexing. In the past this has lead to mismatched indexing when a Side had been removed from a scenario but the old dynamic vocabulary file for the Side was still present, and when the Sides NATO and NATO_NATIONS were used, but the file dynamic_voc_NATO_NATIONS.xml is alphabetically before dynamic_voc_NATO.xml. The mismatching indexing then interferes with the generation of the reports.

The java program to perform the vocabulary loading, sdrvocab.jar, was modified to read the $JGAME/<scenario>/<scenario>.sid file to determine the proper side names and their indexed order. Once this file is read, only the dynamic files for those sides are loaded.

3.40 JTLS-2025-17141 SIP Crash Generating Targetable Weapon OPM

The SIP crashed while generating the OPM page for Targetable Weapons, due to an array out of bounds error.

The code was attempting to access a text array which held the names of the allowed types of interdiction. The array has a length of 4, but the code was trying to access the text string associated with array element number 5. This occurred because there was an error in the code which added one to the value of the data element before using it to get the equivalent text string from the array. The code was modified to correct this error.

3.41 JTLS-2025-17147 Protection Code For Convoy Unit Lift Capability

In a previous exercise, the model crashed when attempting to determine if a convoy could offload a type of supply that belonged to its lifted unit. The code assumed that, because this is an offload task, the convoy assets obviously had a capability to do so; otherwise, the unit load would have been canceled. It is possible that the Controller changed the data while the convoy is active, so protection code was added to check for this situation. This code change never made it into the formal JTLS-GO code base.

The situation was discovered when a check of all code changes from the previous exercise was conducted against the code base being used for this year's exercise. The protection code was reimplemented prior to exercise start and has now been properly integrated in the JTLS-GO code base.

3.42 JTLS-2025-17149 HRU Status Remained Ambush After Task Canceled

An HRU was executing an Ambush order. The Player decided to cancel the Ambush task, which correctly deleted the task from the HRU Task IMT. However, the HRU status still displayed "Ambush" in the WHIP Sitrep window. The HRU had no other pending execution tasks.

Although the routine correctly deleted the currently executing Ambush task, it failed to change the HRU's posture and mission from Ambush to Defend. Calls to the two routines that update HRU posture and mission were missing for almost every HRU task that could be canceled. If the HRU had a next task to execute, this situation was hidden because the posture immediately changed to the appropriate mission and posture.

The missing calls were added for each canceled task to change the HRU posture and mission to Defend. However, if the HRU had a Withdrawal route specified to follow after the canceled task, the two update routines were not added because the mission and posture are immediately changed to Withdraw when the Withdrawal task was executed next.

Note: If there is a pending task after the canceled task, existing logic will change the mission and posture as necessary. If no task is pending, the mission and posture will now remain in Defend, instead of the previously canceled task.

3.43 JTLS-2025-17150 OPM Column Visibility - Expand Popup Menu

The Column Visibility popup menu for OPM tables was not expanding sufficiently to accommodate long column titles.

The layout of the Column Visibility popup menu was adjusted to occupy more space to accommodate for long column titles.

3.44 JTLS-2025-17152 User Can Access ".pgpass" File Via Browser

It is possible to submit a browser command from a client machine and see the entire contents of the ".pgpass" file.

The wej_links from the Glassfish docroot directory to the game/data_site directory have been further restricted. This results in Glassfish having no knowledge of the existence of the ".pgpass" file.

3.45 JTLS-2025-17153 Exercise Log File Upload Using Apache Certificates

When Apache is using certificates for client verification, the default buffer size is 131,072 bytes. This is too small to allow image and other file uploads to the Exercise Log.

The Apache secure buffer was increased to 150 MB, to allow for Exercise Log file uploads up to that size when Apache is using certificates.

3.46 JTLS-2025-17154 WHIP Layout Online Help

The WHIP Online help did not document the use and behavior of the WHIP Layout save and retrieval capability.

The WHIP Online help has been updated to document the WHIP layout capabilities. Some other minor formatting and typographical errors were also corrected.

3.47 JTLS-2025-17156 Combat System Cannibalism

A Unit appeared to be losing Combat Systems for no apparent reason. The supply category for issue and resupply of the Combat System was not set to AS_USED. Because it was not AS_USED, and there were periodic usage values in the TUP, the Combat System appeared to be eating itself.

A new SVP Warning 1163 was added to identify supply categories used for Combat System issue and resupply which do not have a consumption type of AS_USED. Warning 1207 was also modified to include all periodic usage values for TUPs and SUPs.

3.48 JTLS-2025-17157 Logging JODA Regresses Checkpoint

The Logging JODA labels the names of all data packet files based on checkpoints the CEP saves. The Replay JXSR can coordinate the sequence of these packet files for replaying all the contained data packets.

However, when the CEP is started from the scenario start date and the first checkpoint save is taken, the automatic label generated by the Logging JODA regresses the checkpoint number. So, the label for the next packet file is incorrect. This causes the Replay JXSR to get confused while following the sequence of the packet files.

The logic used by the Logging JODA tracks changes the CEP makes to the run file. When the run file is modified but the contents do not change, the Logging JODA registers that a CEP restart occurred. If the run file is modified and a checkpoint number was added, the Logging JODA determines a CEP checkpoint was taken.

Starting from checkpoint 0000, the Logging JODA lost track of the startup state of the run file. When checkpoint 0001 was taken, it started the label sequence with 0002 and began writing packet files with this label, as it should. Internally, however, because it did not correctly determine a checkpoint had been taken, it changed the internal checkpoint number back to a restart value of 0001 for this run. The following packet files were written with this 0001 label in the file name. This error has been corrected and the Logging JODA now writes out the correct checkpoint number.

3.49 JTLS-2025-17158 Manage Satellite Order Processing Errors

Some of the capabilities in the Manage Satellite order did not function as intended:

- When creating a new satellite, the assigned Aircraft Target Class (ATC) was not set correctly in the attribute of the new satellite.
- When using this order to change the satellite route, the model did not properly process the changes. This should have involved a blackout of the satellite, followed by a reactivation after the designated blackout period. No such blackout was performed.

Code changes were made to correct these errors. As a result, the ATC is assigned and the satellite performs the planned blackout condition while undergoing a change in its route.

3.50 JTLS-2025-17160 Multiple Notify External Program Events

The NATO Interactive Command and Control (ICC) system and the US Theater Battle Management Core System (TBMCS) only want to be notified of a mission delay when the mission misses its needed launch time. Delays should not be reported until a launch time is missed. On the other hand, within the model, the delay is reported as soon as the shortfall is determined. This provides the player with enough time to solve the problem. JTLS-GO supports these two requirements by scheduling a “Notify External Program” event to execute and notify ICC/TBMCS when an air mission is delayed beyond its expected launch time.

There should be only one such event scheduled for a given mission.

Investigation revealed different issues involving the notify event processing.

- A mission can go through the mission resource allocation process several times. For example, the mission can repeat the resource allocation process each time supplies arrive at the mission’s home base. Each time the mission determined there were not

enough resources to become launch capable, a Notify External Program event was scheduled. A call to a new subroutine was added to cancel the existing notify event before scheduling the new notify event.

- If the mission was determined to be launch capable after having been in a Delayed status, the preexisting notify event should also be canceled. A call to the new subroutine was added to cancel the existing notify event under this circumstance.

- In a related situation, when the Time on Target for a Delayed mission was changed by the Player to a later time, the existing notify event was not rescheduled as a result of the corresponding launch time being adjusted by the model. Code was added to reschedule the existing notify event.

- Finally, the routine that cancels only one existing notify event was modified to cancel all notify events for a given air mission. Given the other changes made for this STR, there should only be one notify event for a mission, The decision was to check for multiple notify events and generate a logic error if more than one such event was found and canceled.

3.51 JTLS-2025-17161 Satellite Movement And Display Issues

A satellite was rerouted to a new orbit, but the resulting status and path of the orbit did not match the expected properties. The satellite maneuvered to the new route at the specified time, but it was not displayed on the map when movement resumed. If a satellite was in a hold state because it did not have any more route points, then it would remain inactive and undisplayed on the map, even when the Controller added additional route points.

The movement code for satellites was overhauled to properly represent modifications to the routes. The reactivation of satellite now functions as intended, after it undergoes a blackout period and maneuvers to follow a new orbital path.

3.52 JTLS-2025-17162 ATOG Crash Processing Squadron Maintenance

When the user selects the option to generate the ATO message, the ATOG begins to access each squadron's list of maintenance items. The maintenance items of a squadron were being deleted during processing, but the maintenance items were not removed from all squadron lists. This causes a crash when the first deleted maintenance item is accessed.

Maintenance items are shared between differently named lists on different squadron objects. The code did not remove these items from all lists to which it is a member. The code was fixed to do so.

3.53 JTLS-2025-17163 Player OPM ADA Range Page Missing

The Player OPM Air Defense Maximum Engagement Range page was nonfunctional. The Controller page worked.

The filename had a leading period character, making it a hidden file. Because it is a common file, it is saved on the Player side using a link to the Controller side. The linking script does not recognize hidden files and did not create the link. Once the leading period was removed, the link worked correctly.

3.54 JTLS-2025-17164 Ordered Mission Start Time Delay In Pre-Launch

When a mission is in Pre-launch posture, and the Player submits a Manage Air Mission Tasks order (for a single mission) or a ROLEX COMAO order (for multiple missions) to change the TOT to a later time, the model adjusts the launch time accordingly.

However, the mission remains in Pre-launch posture, even when the new launch time is significantly later than the original launch time. In those situations, it is preferable that the mission posture change to Scheduled and the mission resources (aircraft and weapons) be returned to the airbase, so that the resources are not reserved for an extended period of time awaiting launch, preventing earlier missions from executing.

The algorithm was enhanced to place Pre-launch missions in Scheduled posture when the start time has been delayed by a Player order. The mission resources are now returned to the airbase and a future resource allocation event is scheduled. Depending on the new start time, the resource allocation event may occur almost immediately and place the mission back in Pre-launch posture, or it may occur later, keeping the mission in Scheduled posture until it is time to again allocate resources to the mission.

3.55 JTLS-2025-17165 Update PostgreSQL Database Client

Minor PostgreSQL updates are essential for improving system stability, ensuring security, and fixing bugs. PostgreSQL 15.12 has been released and needs to be delivered as part of the next maintenance release.

The PostgreSQL Client, which is distributed with JTLS-GO, has been updated to the latest 15.12 security version. Also, a custom-created PostgreSQL v15.12 database server tar file has been included with the JTLS-GO release.

3.56 JTLS-2025-17166 TRIPP AAR Report E-Mail Not In HTML

AAR reports are displayed in the WHIP's Report Browser as HTML-formatted tables. When the report is e-mailed, various e-mail tools show it as text with the HTML codes displayed in text and no formatting. This can then be cut and pasted into an HTML file and loaded into a browser, which results in formatted HTML. This step should not be necessary, and the report should show in the mail tool as HTML.

All e-mail messages from the WHIP were being sent with a content type of text/plain, which caused HTML codes to be written as straight text by the various mail tools. The WHIP code was modified to allow the different components to specify whether the data was plain text or HTML.

The WHIP Message Browser and IMT screens still send data as plain text, but the Report Browser specifies it as text/HTML.

3.57 JTLS-2025-17167 Event Time OPM page Has No DRM links.

There are no Data Requirement Manual (DRM) links from any of the data items on the OPM Event Times page.

On the OPM Event Times page, a new column was added, which holds the appropriate links needed to display the data field's DRM page.

3.58 JTLS-2025-17168 ATOT Exercise Log Auto Submit Improvements

The automatic submissions to the Exercise Log from the WHIP's ATOT module did not provide the user enough reporting flexibility.

The following options were added to the Mission Summary panel:

- Allows submissions by both single and multiple selected missions.
- Users are prompted to either roll up the multiple selected missions into one log entry or log separate entries per mission.
- The user is provided the option to enter the log entry title or use the default title that includes the ATO ID.

The following options were added to the Error Summary panel:

- Allows submissions by single and multiple selected errors and warnings.
- The selected mission(s) rolls up all errors and warnings related to the mission(s).
- Users are prompted to either roll up the multiple selected errors and warnings into one log entry or submit separate log entries per selected mission.
- Log All prompts the user to either roll up the multiple selected errors and warnings into one log entry or submit separate log entries per selected mission with errors and warnings.
- The user is provided the option to enter the log entry title, or use the default title that includes the ATO ID.

Additionally, the ATOT service was modified to provide the ATO ID in the meta-tags of the linking XML doc, so the WHIP's ATOT User Interface has access to this value for logging associated missions and error.

3.59 JTLS-2025-17169 Apache Transmission Buffer Maximum Increased

When using a Super WHIP for a large scenario, the Apache data transmission was maxed out at 25MB, and prevented a full download of all the perceived sides.

The Apache maximum buffer size was increased to support 128MB data transmissions. With the change, the initial buffer size was also adjusted to 8MB from 5.5MB and is now incremented by 128KB blocks instead of 100KB. The modification allowed a Super WHIP to get a full download for all the perception sides in the large scenario.

3.60 JTLS-2025-17170 Order Group Editor Move Check Option Before Send

The order group context menu in the Order Group Editor displays the Send group option before the Check. This made it easy for users to perform the send of the order group before checking that the orders in the group are valid.

The two options were switched in the menu. The “Check” option is now above the “Send” option.

3.61 JTLS-2025-17171 Make Correct Object Task Critical Order

During a recent exercise, users unfamiliar with the Correct Object Task order incorrectly used the order. The order is not listed as a “Critical Order”, so it is not saved for the “Push” capability. When replaying a crash situation using the “Push” order capability, the model worked as desired.

The order was not put in the Critical Order File to help debug the exact cause of the situation that required the use of the Correct Object Task Order.

Because the order was not labeled as a critical order, the exercise support team did not realize the order had been entered. It did not show up when searching through the list of submitted orders. During the exercise, the support team spent countless hours trying to recreate crash situations that did not crash during replay, when in fact the model worked exactly as designed. It took several days to realize the cause of several crashes was caused by the missed use of the Correct Object Task Order.

Based on this situation, the JTLS-GO Design Team decided it was more important to know that a user has input this order; therefore, the order has been changed to a Critical Order. If attempting to recreate a situation, the support team needs to learn to delete the order from the "Push" file to allow the situation to be recreated.

In addition, user organizations are strongly encouraged to use a Controller Menu file that does not include the Correct Object Task Order from Controller WHIPs being used by inexperienced personnel.

3.62 JTLS-2025-17172 Dual-Capable Sensors Combined In Repository

A significant database modification is being implemented for the JTLS-GO repository63 to streamline the representation of sensor capabilities within TUPs and SUPs. This change will consolidate multiple, distinct sensor systems - previously modeled as separate entities for functions such as air search, ground search, active sonar, and passive sonar - into a single, dual-capable (or multi-capable) sensor record associated with a unit prototype.

Multiple existing sensor records that individually represent air surveillance radar, ground surveillance radar, active sonar, and passive sonar have been merged or replaced. The database schema has been adjusted to permit a single sensor entry linked to a TUP or SUP to define and characterize its combined air and ground search functionalities, and active and passive sonar capabilities. All duplicitous sensors have been removed from the database.

4.0 REMAINING ERRORS

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

The following list of issues is known and have not been fixed in time to make it into this release of JTLS-GO 6.3.5.0.

4.1 DDSC/WHIP/JOBE - CADRG Map Zoom

When using the CADRG map projection, if the width of the map is less than the height, the zoom tool does not work correctly.

4.2 MHE Targets Loading Air Mission Can Cause a Crash

MHE targets should be avoided for loading and unloading air missions. It is suggested that the database be set to “Do Not Use” for Air Missions.

4.3 JTLS-GO Strategic Lift Missions Are Not Working Properly

Strategic Lift Missions, used to move TPFDD assets into the Theater and report the results to a real-world TPFDD processing system, has not been updated to work within JTLS-GO 6.3.

4.4 Tactical Ground Formation Attacks Do Not Work

The ability to send a Tactical Ground Formation on an Attack mission has been temporarily disabled due to reliability issues.

4.5 ATOT Spreadsheet Lacks Detailed Field Checking

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 release of the JTLS-GO 6.3 series.

4.6 Moving Combat System Supplies Can Reduce Unit Strength To Zero

If a user does a mandatory transfer of Combat System supplies from one unit to another, the providing unit can be emptied out and exists without any Combat Systems or personnel. This situation needs to be thoroughly and properly handled.

4.7 Upgrade Procedures For Maintenance Release of PostgreSQL

The Development Team continues to look for viable options to upgrade from one maintenance release of PostgreSQL to a newer maintenance release.

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
CEP	Combat Events Program
CMDR	Commander
COP	Common Operational Picture
CP	Combat Power
CS	Combat System
CSP	Combat System Prototype
CTAPS	Contingency Tactical Air Planning System
CTG	Commander Task Group
CTRL	Control keyboard command
DCA	Defense Counter Air
DCL	Digital Command Language
DDS	Database Development System
DEMSDB	Demonstration Standard Database
DISA	Defense Information Systems Agency
DIV	Division
DMA	Defense Mapping Agency
DoD	Department of Defense
DOS	Days of Supply
DPICM	Dual Purpose Improved Conventional Munitions

DS	Direct Support
DSA	Directed Search Area
DTG	Date Time Group
EC	Electronic Combat
ECM	Electronic Counter Measure
ECP	Engineering Change Proposal
EEI	Essential Elements of Information
ELINT	Electronic Intelligence
ELS	Entity Level Server
EODA	Entity Level JTLS Object Data Authority
ETA	Estimated Time of Arrival
FARP	Forward Arming and Refueling Point
FLP	Fire Lethality Prototype
FLOT	Forward Location of Troops
FOL	Forward Operating Location
FWL	Frederick W. Lanchester (originated a differential equation model of attrition)
GAL	Gallon
GCCS	Global Command and Control System
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
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
SDR	Scenario Data Repository
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 6.3.4.0 DATABASE CHANGES

Due to changes made in support of STR JTLS-2025-17024 SVP Corrections Inserting Records Nonfunctional, the JTLS-GO 6.3.4.0 database format has been changed to add a new column to the text_symbol_lu table, related to unit symbols. This change requires that users **unload** their scenarios prior to installation of JTLS-GO 6.3.4.0, and then **load** them following installation.

APPENDIX C. VERSION Version 6.3.5.0 REPOSITORY CHANGES

The following changes have been made to the data held in repository63:

- All torpedo Targetable Weapons are now properly labeled as torpedoes
- Continued updating DIS Codes for Combat Systems, Aircraft, and Ships.
- Added two new Aircraft Class entities to represent two new attack unmanned aerial vehicle drones. The ALTIUS 600M-V UAV and the Switchblade 300 UAV are represented as loitering munition UAVs.
- Fixed the dual mode air search and surface search sensors by combining the two records into a single record. This included adjusting the Prototype Owned Targets for the Ship Unit Prototypes that owned these sensor types.