

# JTLS-GO

## Version Description Document

February 2018



DEPARTMENT OF DEFENSE  
JOINT STAFF J7  
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JOINT THEATER LEVEL SIMULATION - GLOBAL OPERATIONS  
(JTLS-GO 5.0.10.0)

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## ABSTRACT

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

This *JTLS-GO Version Description Document (VDD)* describes the new features of the Version 5.0.10.0 delivery of the configuration-managed JTLS-GO software suite.

JTLS-GO 5.0.10.0 is a Maintenance release of the JTLS-GO 5.0 series that includes an updated SBDKOR50 Standard Database, as well as minor model functionality changes implemented as Engineering Change Proposals (ECPs), which are summarized in Chapter 2. Code modifications that represent corrections to known Software Trouble Reports (STRs) are described in Chapter 3. Remaining and outstanding STRs are described in Chapter 4.

This publication is updated and revised as required for each Major or Maintenance version release of 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 5.0.10.0 of the configuration managed Joint Theater Level Simulation - Global Operations (JTLS-GO<sup>®</sup>) software suite. JTLS-GO 5.0.10.0 is a Maintenance delivery for the JTLS-GO 5.0 series of releases.

JTLS-GO 5.0.10.0 includes the entire JTLS-GO suite of software and the SDBKOR50 Standard Database that supports a realistic scenario based on the current Korean Peninsula theater of operations. Database modifications that were accomplished to upgrade the previous JTLS-GO Standard Database to this current version are summarized in this chapter, as well as [APPENDIX B](#). Detailed descriptions of minor Engineering Change Proposals (ECPs) implemented for this release are provided in [Chapter 2.0](#).

JTLS-GO 5.0.10.0 executes on the Red Hat Enterprise Linux Version 6 64-bit operating systems. The Web-Hosted Interface Program (WHIP<sup>®</sup>) user workstation interface can be executed on any operating system from any Java-compatible Web browser.

### 1.2 INVENTORY OF MATERIALS

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

#### 1.2.1 Unchanged Documents

JTLS-GO 5.0.10.0 is a bug release of the JTLS-GO system. Other than date changes, the following documents have had no significant changes since the last release of JTLS-GO.

- *JTLS-GO Analyst Guide* (JTLS-GO Document 01, Version 5.0.10.0)
- *JTLS-GO Air Services User Guide* (JTLS-GO Document 03, Version 5.0.10.0)
- *JTLS-GO Director Guide* (JTLS-GO Document 07, Version 5.0.10.0)
- *JTLS-GO Executive Overview* (JTLS-GO Document 08, Version 5.0.10.0)
- *JTLS-GO WHIP Training Manual* (JTLS-GO Document 10, Version 5.0.10.0)
- *JTLS-GO Standard Database Description* (JTLS-GO Document 14, Version 5.0.10.0)
- *JTLS-GO Federation User Guide* (JTLS-GO Document 20, Version 5.0.10.0)

### 1.2.2 Updated Documents

The following documents have been changed or improved since the last release of JTLS-GO.

- *JTLS-GO Controller Guide* (JTLS-GO Document 04, Version 5.0.10.0)
- *JTLS-GO Data Requirements Manual* (JTLS-GO Document 05, Version 5.0.10.0)
- *JTLS-GO DDS User Guide* (JTLS-GO Document 06, Version 5.0.10.0)
- *JTLS-GO Installation Manual* (JTLS-GO Document 09, Version 5.0.10.0)
- *JTLS-GO Player Guide* (JTLS-GO Document 12, Version 5.0.10.0)
- *JTLS-GO Software Maintenance Manual* (JTLS-GO Document 15, Version 5.0.10.0)
- *JTLS-GO Technical Coordinator Guide* (JTLS-GO Document 16, Version 5.0.10.0)
- *JTLS-GO Version Description Document* (JTLS-GO Document 17, Version 5.0.10.0)
- *JTLS-GO Entity Level Server User Guide* (JTLS-GO Document 19, Version 5.0.10.0)
- *JTLS-GO C4I Interface Manual* (JTLS-GO Document 21, Version 5.0.10.0)

### 1.2.3 Delivered Software Components

JTLS-GO 5.0.10.0 may be delivered either on a CD or as a set of compressed TAR files to be downloaded. Either method includes the complete suite of software executable code and command procedures. The following software components are included with this release:

- Combat Events Program (CEP)
- Scenario Initialization Program (SIP)
- Interface Configuration Program (ICP)
- Reformat Spreadsheet Program (RSP)
- Database Development System (DDS)
- JTLS Symbols Application (JSYMS)
- 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)
- Web Services Manager (WSM)
- Web Services
  - Apache Server (APACHE), version 2.4.26
  - JTLS XML Serial Repository (JXSR)
  - Order Management Authority (OMA)
  - Synchronized Authentication and Preferences Service (SYNAPSE)
  - XML Message Service (XMS)
- Web-Hosted Interface Program (WHIP)
- Total Recall Interactive Playback Program (TRIPP)
- Entity Level Server (ELS)
- JTLS Operational Interface (JOI) OTH-Gold, Link-16, and TACELINT
- KML Operational Interface (KOI)
- JTLS Transaction Interface Program (JTOI) supporting
  - ICC 2.8.2 and 3.0.2
  - NEC-CCIS
  - TBMCS
- JTLS Interface Network Navigator (JINN)

- JTLS Order of Battle Editor (JOBED)
- Database Configuration Program (DCP)
- DDS User Interface (DDS)
- JTLS Terrain Building Program

Instructions for installing JTLS-GO 5.0.10.0 are provided in the *JTLS-GO Installation Manual*. Installing a previous version of JTLS prior to installing JTLS-GO 5.0.10.0 is not necessary. No other upgrade beyond installation of the compressed TAR files (or CD) is required. The software provided with this delivery is a complete release that includes all files and code required to execute JTLS-GO.

#### 1.2.4 Released Databases

This release includes the following sample unclassified databases:

- The scenario developed as the Korea Standard Database and named SDBKOR50 is a large-scale, seven-sided scenario database reflecting the approximate starting positions of units involved in the Korea Peninsula theater of operations. This example scenario was developed using unclassified data sources and is consequently not completely accurate. Discrepancies among actual units and their locations are not detrimental to the intended purpose of this database, which is to provide a recognizable and realistic scenario that demonstrates the simulation capabilities and supports JTLS training.
- The scenario DEMSDBKOR50, which is a reduced version of SDBKOR50, has also been updated.
- The scenario blank50 is the SDBKOR50 database with all force structure data removed, which can be used as a framework for building your customized database.

### 1.3 INTERFACE COMPATIBILITY

#### 1.3.1 Support Software

JTLS-GO 5.0.10.0 requires the following versions of support software, including operating systems, compilers, scripting utilities, database tools, transfer protocols, and display managers.

- Operating system for the model: Red Hat Linux Enterprise Edition Version 6.9 (ES), 64-bit architecture.

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

A RedHat Linux documented loop-back interface problem continues to cause degraded performance issues on Red Hat/CentOS 6 systems. This issue negatively impacts JTLS services when executed on the same server as Apache.

While we expect Red Hat to eventually correct this issue, significant effort has been place on JTLS-GO optimization to minimize impact of the problem. Still we recommend users with more than 25 concurrent WHIP/TRIPP users to avoid this Red Hat/CentOS loopback issue by running Apache and the SYNAPSE on different physical or virtual servers. For users with significantly more than 25 concurrent WHIP/TRIPP users, consider not running other JTLS services, such as the JXSR and XMS, on the same server used by Apache.

See the *JTLS-GO Installation Manual*, Appendix D for some recommended system tuning changes that can mitigate these performance issues.

STR JTLS-2017-13229 implements SSH Tunneling between Apache and the services and among the services. While testing has been conducted in the development environment, rigorous testing should be done prior to use in any exercise. Particular attention should be paid to network performance under load.

When using a Linux system as a client, if a dialog saying “Too many open files” appears, see the *JTLS-GO Installation Manual*, Section 5.5 for a work around. If this occurs on a server, see the *JTLS-GO Installation Manual*, Appendix D.

JTLS-GO 5.0 has been tested with the following versions of Linux 6:

RedHat Linux 6 - this operating system license must be purchased.

Oracle Linux 6 - this is a free and distributable version of Linux which has been approved for use by U.S. Government agencies by the Defense Information Systems Agency (DISA).

CentOS 6 - a free version of Linux 6 that has not been approved by DISA for use by U.S. Government agencies.

- There are no restrictions on the operating system for client workstations, except that the operating system must have a Java-enabled web browser. JTLS-GO 5.0.10.0 has been tested on the following operating systems:

Red Hat Linux Enterprise Edition Version 5 and 6.

CentOS Linux Version 5 and 6.

Windows Vista, Windows 7, and Windows 10 can be used only if the workstation is an external HTTP client of the simulation network.

- Java 8 Update 162 is required for all platforms and must be used to support all workstations.

Because of recent incidents of intrusions into software systems, the United States Department of Defense (DoD) has implemented a strong and strictly enforced Information Assurance (IA) program. JTLS, as software that executes on DoD systems, must comply to the mandates of the IA program, along with all of the third party software used by JTLS-GO, such as Oracle and Java.

One of the DoD IA requirements is that the software must implement a methodology that ensures that the end user keep the software up-to-date and all security patches are properly installed. Java 8 has fulfilled this mandate by implementing an expiration date for its software. After a certain date, all Java related programs will stop working, whether you are connected to an open network or not.

JTLS-GO software releases are linked to the Java 8 security updates to meet this requirement. This version of JTLS-GO is released using Java 8 Update 162, which expires on 17 April 2018. A new version of JTLS-GO will be released prior to that expiration date.

- JTLS-GO database tools require use of a certified Oracle database server and the full Oracle Client installation for runtime requirements. Refer to [Section 1.5.2](#) of this chapter for additional installation details.
- Windows software, X11R5 server, Motif 1.2 Library, Motif Window Manager: These items are included as part of the supported versions of Red Hat Linux ES.
- TCP/IP is required for inter-process communication between the JODA data server and all user interface programs. The version of TCP/IP included with the supported versions of Red Hat Linux ES is sufficient.
- The Perl script language is used by the JTLS-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 II.5 (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. To obtain a SIMSCRIPT compiler, contact CACI Inc.
- 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 (Database Development System) application uses these open source libraries:

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

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

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

- KML Operational Interface (KOI)

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

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

### 1.3.2 JTLS-GO High Level Architecture Compliance

The JTLS-GO 5.0.10.0 release is fully High Level Architecture (HLA) compliant, and includes all the programs required to run JTLS-GO in an HLA mode. JTLS-GO has moved to a new Federation

Object Model (FOM) located in the \$JGAME/data/hla directory. Federation testing of JTLS-GO is not complete, but initial tests with CAE's Gefechts Simulation (GESI) have been accomplished. Future plans include expanding the capabilities of the JTLS-GO-GESI federation, called GlobalSim continue.

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 as a federation called GlobalSim. CAE's GESI constructive simulation system is designed to run complex and comprehensive exercises from the company level up to division level. The CAE 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.

The HLA RTI (Run Time Infrastructure) executive program (rtiexec) recommended for use with this release is RTI-NG-Pro-v7.0 or Pitch pRTI Evolved 4.4.2.0. However, these programs are not included in the JTLS-GO 5.0.10.0 delivery. Users may obtain a full installation package of the RTI software from either vendor: Raytheon Company (<http://www.raytheon.com>) or Pitch Corporation ([www.pitch.se](http://www.pitch.se)). For information about executing the HLA RTI Executive and other HLA-related software, refer to the appropriate HLA documentation and user guides.

## 1.4 DATABASE MODIFICATIONS

No database structure differences exist between JTLS-GO 5.0.10.0 and JTLS-GO 5.0.0.0.

Significant database structure differences exist between JTLS-GO 5.0.10.0 and any previous 4.1 series database.

To upgrade your JTLS 4.1 scenario to JTLS-GO 5.0 compatibility, see instructions listed in the *JTLS-GO DDS User Guide*, Chapter 3.1.

### 1.4.1 JTLS-GO Using Legacy Default Symbol Set

Prior to unloading your newly upgraded JTLS-GO 5.0.0.0 formatted data from your Oracle database server into a JTLS-GO 5.0.0.0 scenario ASCII file, you must execute the JSYMS program, which will reorganize the structure of the .gs and .scf symbols-related files. See the *JTLS-GO DDS User Guide*, Appendix B.11 for instructions.

### 1.4.2 Upgrading JTLS-GO Default Symbol Set

The JTLS-GO Default Symbol Set delivered with this release has been modified to use the US 2525C symbol standard and well as the NATO Joint Military Symbol [APP-6(c)] standard. If you

choose to propagate this new Default Symbol Set to any of your scenarios that use the 4.1 Default Symbol Set, see the *JTLS-GO DDS User Guide*, Appendix B.12 and B.13 for instructions.

You should not make any modifications to the Default Symbol Set, but you are free to copy the Default Symbol Set and create your own set to meet your needs.

### 1.4.3 Standard Database Changes

Additional Standard Database changes that are applicable to JTLS-GO 5.0.10.0 are described in [APPENDIX B](#).

## 1.5 INSTALLATION

### 1.5.1 Installation Instructions

The *JTLS-GO Installation Manual*, included in the compressed TAR file that is part of this JTLS-GO delivery, provides detailed instructions for installing a new version of JTLS-GO. The *Installation Manual* can be found in the `/documents` subdirectory of the JTLS-GO TAR file.

With the JTLS-GO 5.0 series, there have been significant changes to the directory structure which holds the files for the Online Player Manual (OPM). Users must remove all existing files from their JTLS 4.1 or earlier version `$JGAME/{scenario}` directory before setting up their scenario for execution with the JTLS 5.0 series. Prior to running Option 3 - "Setup System for a Specific Scenario" of the JTLS-GO menu, all users must remove the existing files in their scenario game directory. Failure to clean-up the `$JGAME/scenario` directory will result in a program crash while generating the OPM (Option 4).

The JDS Protocol has changed with this release. Any users that hook to the JODA or EODA to get information on the existence and/or status of objects must recompile their code with the new JDSP header files, and link with the new JDSP libraries. Within the protocol, a force side has been added to all AAR objects, The BE Facility object has been assigned a `damage_percent` attribute, and BE Objects have been added to link targets and units to a BE Facility.

JTLS-GO databases should be unloaded and loaded after installation of JTLS-GO 5.0.10.0 due to a change in one of the stored procedures used by the DDS.

### 1.5.2 Oracle Compatibility and Installation

A full Oracle Client installation (not Instant Client) that matches your database server version is currently a requirement for running some JTLS-GO applications. The Oracle Instant Client is not sufficient for JTLS-GO applications because Oracle utilities, such as `sqlldr`, `imp`, `exp`, `tnsping`, etc., are missing. If you have applied a patchset to your database server, the same patchset should be applied to the Oracle Client installation. A 64-bit Oracle Client installation must be used. The

JTLS-GO scenario/database modification process also expects Oracle 11.2.0.1 or higher full Oracle Client installation.

Some sites NFS mount their database server as Oracle Client; other sites prefer a full install of the Oracle Client to a different directory that mounts (simple NFS will suffice) to JTLS-GO. Your system administrator can choose the appropriate installation. Assigning the full Oracle Client installation location (or mount point) as the ORACLE\_HOME in the JTLS .cshrc file allows connecting to an Oracle database server (11.2.0.1 or higher - including 11gR2 XE) running on any Oracle-certified database server platform.

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

Refer to Chapter 6 of the *JTLS-GO Installation Manual* for additional details pertaining to the Oracle installation.

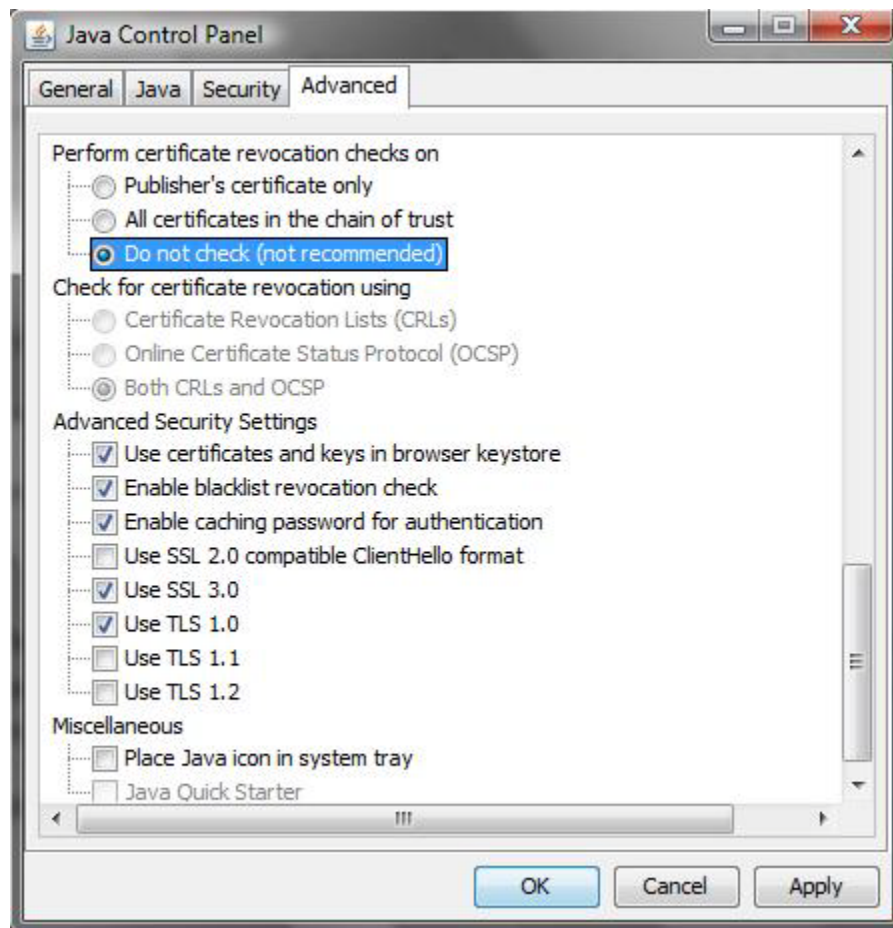
### 1.5.3 Disabling Certificate Authority

Industry standard programming practices strongly recommended that Web Start technologies be signed by a Certificate Authority (CA) to validate that an application being run comes from a trusted and registered source under the PKI. Keeping with high security standards, R&A has opted to sign its web enabled applications with a certificate from the COMODO, which uses the Public Key Infrastructure (PKI) to validate the digital signature. Local area networks, intra-nets and standalone systems that have no outside connection to the Internet must configure their installation to disable certificate revocation checks. If this step is not taken under a closed environment, the JTLS-GO web-enabled applications will experience a significant delay in start up while the PKI attempts to validate the certification on COMODO's servers via the Internet.

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

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

Navigate to the 'Advanced' tab and in the list of configuration options, select the 'Do not check' radio button and click 'OK'. The image below illustrates the corresponding selection in the Control Panel.



**Figure 1.1 Control Panel**

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

#### 1.5.4 Map Vector File Format Update

The format of the files used to display outline maps on the WHIP and DDSC has changed. Files in the new format are delivered with JTLS-GO. The files are located in `$JTLSHOME/data/maps/vector` and are in XML format.

For users who desire to use any custom files that are in the JTLS 4.1 format, a conversion script called "outlineConverter" is provided. The script can either convert individual files or a directory of files. The user can also choose to convert all types of outlines or only the shoreline outline (coded 9999 in the 4.1 format).

The script has 2 usages:

- To convert a single file:

```
outlineConverter -a <map_file> [-c shoreline]
```

- To convert all files in a directory. The file extension is assumed to be .map.

```
outlineConverter -d <directory> [-c shoreline]
```

The optional “-c shoreline” argument causes only the shoreline vectors to be converted. Rivers and national boundaries no longer follow hex-edges in JTLS-GO 5.0.10.0, but are represented as distinct lines with latitudes and longitudes. These terrain features can be individually turned on and off using the WHIP filter capability. Thus, the need to represent rivers and national boundaries in the vector maps is eliminated. The ability to represent these features, as part of the vector map, has not been removed from the WHIP, but the user should consider whether these old vector features should or should not be displayed by the vector maps.

The output files are placed in the same directory as the input files.

## 2.0 ENGINEERING CHANGE PROPOSALS

This chapter summarizes model capabilities added to JTLS-GO 5.0.10.0 as a result of implementing minor Engineering Change Proposals (ECPs).

### 2.1 JTLS-2016-12704 Filter By Command Hierarchy

#### Summary of Model Change Request

Provide a method where pruning the Command Hierarchy window also acts as a filter for the map window, thus displaying only units/targets that are displayed in the Command Hierarchy.

#### Design Summary

An international client requested that this Engineering Change Proposal be implemented. The request was not implemented exactly as written. The filtering is not linked to the Web Hosted Interface Program (WHIP) Command Hierarchy Component. Instead, the map filter panel was altered to support the requested function.

A new tab has been added to the filter panel that displays the command hierarchy of the WHIP's own units. Portions of the command hierarchy can be turned on and off as desired. The object filter tab and the command filter tab work together as a package. For an object to be displayed on the map, the object's characteristics must match all of the filter characters. If any characteristic, including its position in the command hierarchy tree are not met, the object will not be displayed.

This capability has been implemented in the WHIP, the Database Development System Client (DDSC) and in the JTLS Order of Battle Editor (JOBE). The ECP was successfully used during the Pacific Command's Exercise Keen Edge.

### 2.2 JTLS-2017-13407 Expand IMT Spreadsheet Order Capability

#### Summary of Model Change Request

Several new IMT spreadsheet orders were added to fulfill users ability to quickly submit orders. Additional checks were also added to the checkimt script to ensure the fields in the spreadsheet had proper default values if the matching field in the order was a FLAG or STATIC\_V field.

#### Design Summary

The following new spreadsheet orders were added:

- From the IMT Air Mission Screen  
Change Manual Pair Order

- Change ROE Air-to-Air Order
- Change ROE Surface-to-Air Order
- Magic Air Ops Top Off Fuel
- Magic Air Ops Add Fuel
- Unit Info Screen
  - Change ROE Unit Surface ROE
  - Change ROE Unit Air-to-Air ROE
  - Change ROE Unit Surface-Air ROE
- Unit\_Logistics Screen
  - Altered the existing spreadsheet Logistic Report order to include whether the report should or should not be a roll-up report.
- Weapon\_Load Screen
  - Altered the existing spreadsheet for Cancel Air Mission. Changed the default reason for the cancellation to be ATO Problems so TBMCS is not informed about the cancellation.

### 2.3 JTLS-2017-13408 Expand IMT Information

#### Summary of Model Change Request

During game execution, users requested additional information to be displayed on IMT panels.

#### Design Summary

The following panels had additional information placed on the panel:

- Mission Tasking Order Panel
  - The mission's Call Sign was added
- Target Screen
  - The target's long name
- Unit Info Screen
  - The unit's long name
  - The unit's country code
  - The unit's 2525 Symbol name



## 2.4 JTLS-2017-13410 Add Collecting Mission Name To IIR Report Subject

### Summary of Model Change Request

Users requested that the name of the mission collecting the IIR data be added to the subject line of the message.

### Design Summary

The request was implemented. The subject line for an IIR message now says the following:

**Non-Theater DSA Collection Report - DSA\_Name - Mission\_Name**

## 2.5 JTLS-2017-13419 No Easy Way To Determine Weapons Short

### Summary of Model Change Request

If an air mission goes into weapon delay, a message is written to indicate what weapons are missing. It would be easier if the Player could obtain this information from the IMT Weapon\_Load screen.

### Design Summary

The Weapon\_load screen now includes not only the weapons that the mission has loaded, but the weapons that the mission could not load.

## 2.6 JTLS-2017-13420 Speed Game Up

### Summary of Model Change Request

Some model slow downs were experienced. Although this was finally tracked down to thousands of active Directed Search Areas, there was also a possibility that the numerous grid effects tags were being moved more often than needed by the model.

### Design Summary

The model contains a variable called the MAX.MOVE.UPDATE.TIME.AM. A mission in a large grid will move at least this often. If a mission is moving through small grids it could move much more often than this database parameter. Each time the mission moves, the grid tags indicating the coverage of its sensors are also moved. When traveling through small grids, this process could be time consuming. A change was made to move the grid tags only as often as this database parameter.

While implementing this speed improvement, it was noticed that there were a few inconsistencies in the sensors carried by missions. The decision was made several years ago, that the VISUAL sensor was not going to be placed on the air missions sensor list and that tags

for that sensor would not be tracked. We found code that assumed that the visual sensor was on the mission's sensor list. This code was removed from the model.

## 2.7 JTLS-2017-13423 Add Naval Move Order To Formations Order Menu

### Summary of Model Change Request

A user requested that the Naval Move order be added to the WHIP Player Menu under the section for "Formations".

### Design Summary

The Naval Move order is used to schedule movement for both Naval Units and for Naval Formations. It was only listed under the section for "Naval Operations". This order was added to the section for Formations to simplify use by the User when moving formations.

## 2.8 JTLS-2017-13429 Improve Debug Capability

### Summary of Model Change Request

When debugging problems, there is no easy way to tell Simscript to stop in a given routine when a specific object is being processed. JTLS-GO has code in each of the event routines to stop when a selected object is encountered. It was necessary to add the code to stop in several other places.

### Design Summary

The model was altered to automatically stop for a specific Air Mission when checking whether air defense can fire on the mission.

## 2.9 JTLS-2017-13494 JOI Modules Act As Independent Frames

### Summary of Model Change Request

The OTHGold and Link16 JOI modules are large enough that using them within the WHIP can be troublesome when interacting with other WHIP components.

### Design Summary

The OTHGold and Link16 JOI modules have been modified to act as independent frames that exist outside of the WHIP itself. The module windows are named to reflect the WHIP that they were launched from. These windows also inherit the menu color from the launching WHIP.

## 2.10 JTLS-2017-13497 ATO-T Interface - Sort Tables

### Summary of Model Change Request

Some tables in the ATO-T interface were in an arbitrary order after loading. Users were forced to sort this data each time a translate or other action occurred.

### Design Summary

Tables in the ATO-T interface are now sorted by default.

## 2.11 JTLS-2017-13505 Changing Submarine Detection Time Data

### Summary of Model Change Request

During game execution, if the Controller changes the database parameters that control how long it takes to detect a submarine, the data does not take effect for submarines already in the game. It only affects submarines that either TPFDD into the game after the Controller changes or when a submarine is resurrected.

### Design Summary

The ECP calls for making the database changes effective for all submarines already in the game. This was implemented.

At the same time, some inefficient code that handled Controller changes to the submarine's battery time parameters was rewritten. The logic was improved to avoid a separate search through the vessels in the scenario for each requested parameter change. The logic now performs only one search for all requested battery parameter changes.

## 2.12 JTLS-2017-13508 TBMCS Initialization Spreadsheets

### Summary of Model Change Request

Theater Battle Management Core System (TBMCS) operators indicated they had no time to create a TBMCS database that matched a JTLS exercise database. The TBMCS initialization file formats were provided, and a procedure is necessary to create these initialization files from a JTLS database.

### Design Summary

An alter database procedure was added to create the needed twenty different TBMCS initialization files.

### 2.13 JTLS-2018-13543 Warn User Sensors Do Not Cover Full Path

#### Summary of Model Change Request

A database was built with some very small sensor ranges and aircraft as they were flying along were missing large blocks or areas.

#### Design Summary

A new Warning 1127 was added to the model to report when a sensor is smaller than the maximum distance and aircraft can travel in a move. The user can then decide to either increase the range of the sensor or have the mission move in smaller jumps.

### 2.14 JTLS-2018-13545 SVP Warning For NWARS Link

#### Summary of Model Change Request

NWARS was reporting nationally collected emitters during the recent exercise, and the database team needed help identifying the emitters that did not have proper Electronic Intelligence Notation (ELNOT) data.

#### Design Summary

Two warnings were added to the SVP:

Warning 1206 - Indicates that a sensor has a power specified, but it cannot be jammed. This warning is only output for SURFACE SEARCH and AIR SEARCH sensors.

Warning 1238 - Indicates that a sensor has a power specified but no ELNOT. If the exercise does not plan on generating Tactical or National Electronic Intelligence (TACELINT) messages, this warning can be turned off.

## 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. [Chapter 4.0](#) describes STRs that remain outstanding from previous versions.

### 3.1 JTLS-2017-13386 Shape File Index File Removal

Shape file index files are not needed to display a Shape file, and the instructions for generating index files was incorrect in the JTLS-GO Technical Controller Guide and the JTLS-GO DDS User Guide. The `validate_shapefiles` script contained the generation instructions for the index, if the index is not present, which was incorrect.

The WHIP, TRIPP, JOBE, and DDS were modified to not try to load shape index files for the world map and arbitrary shape files. The instructions for generating index files from shape files were removed. The generation of the index file was removed from the `validate_shapefiles` script.

### 3.2 JTLS-2017-13387 JOBE Map Layer Ordering

The shape layer was covering the CADRG layer.

The order of the layers was changed, so that the CADRG layer is on top of the multi-shape layer.

### 3.3 JTLS-2017-13388 HRU-Owned ADA Site Runs Out Of Weapons Crash

The model crashed when an HRU-owned air defense site ran out of weapons and ordered new supplies.

All of the proper logic was in place for this situation. The HRU (Type 22) was ordering the supplies and the field that held the type of object ordering only allowed type values up to 7. The field was changed to accept a type number of 22.

### 3.4 JTLS-2017-13389 DCP/ICP Contained R&A Specific Processing

The DCP and ICP suggested default Glassfish entry values that were specific to the R&A development network.

The R&A-specific default values were removed.

### 3.5 JTLS-2017-13390 Delayed Mission Launches Early

A mission that goes into delay during its resourcing event notifies the player of the delay problem. If the player corrects the problem, such as getting needed supplies to the squadron, before the mission is scheduled to leave on its mission, the mission leaves as soon as the problem has been corrected instead of waiting for the correct launch time.

The logic error was corrected. The mission now waits until its previously scheduled leave time once the delay issue has been corrected.

### 3.6 JTLS-2017-13391 Number Of Sides Caused Default Ports Change

**The default ports for some services were dependent on the number of sides in the scenario. This was caused by adding the same number of replay JXSRs as sides, causing any service added after the replay JXSR's port numbers to vary.**

The ICP was modified to always add eleven replay JXSRs. There is no need to use all of the JXSRs that are placed in the default configuration.

### 3.7 JTLS-2017-13392 WSM Lockup If Network Connectivity Lost

**If network connectivity was lost to a remote service, the Web Services Manager (WSM) would lockup.**

A default timeout of 5 seconds was added to the socket used to get service status. The default timeout can be changed (see Section 9.2 of the *JTLS-GO Technical Coordinator Guide*).

### 3.8 JTLS-2017-13393 SVP Error 958 Fails To Display Resolution

**The Scenario Verification Program (SVP) flagged a network error in a scenario database. An unbridged railroad network arc was found to cross over an ocean grid (Error 958). No resolution option appeared in the DDS to correct the database error.**

The subroutine CHECK.ARC.OVER.WATER used the NETWORK.TYPE.NAME value, which is "RAIL", but the SVP Template was expecting "Railroad" to match the corresponding resolution. The logic therefore did not match and offered no resolution. The SVP template was modified to use the correct NETWORK.TYPE.NAME (i.e. "RAIL", not "Railroad").

All SVP errors/warnings related to networks were reviewed and two more were found to have a similar problem. Those mis-matches were also corrected in the template for Error 956 and Warning 1927.

In an unrelated matter, a minor change was made to Warning 1903 to show the terrain grid (x,y) coordinates for clarification and consistency with similar warnings.

### 3.9 JTLS-2017-13394 Communication Center DIS Code Edit In DDS

**When editing the DIS Code field for the Communication Center Target Category in the DDS, the original value in the field was blanked out, and the user could not enter the code as desired.**

This is due to an incorrect valid character set that was used for the column in the screen definition file. The valid\_chars\_naval\_pif\_code was used instead of valid\_chars\_dis\_code.

### 3.10 JTLS-2017-13395 Conflicting National Boundary Report

**The Online Player Manual (OPM) National Boundary Permissions table data conflicted with the CEP National Boundaries Report data.**

The code which set the bit mask used solely with National Boundary permissions was not initialized correctly in the SIP - the CEP version of the code was correct. The OPM generated by the SIP was wrong for National Boundary Permissions. The error was corrected.

### 3.11 JTLS-2017-13396 JTOI TBMCS Transaction Credentials Refresh

**The TBMCS JTOI was encountering an error when attempting to make successive transactions.**

The JTOI credentials were being cleared after each transaction. The JTOI now refreshes these credentials after each transaction.

### 3.12 JTLS-2017-13397 WHIP/DDS Web Logins Do Not Match

**The WHIP and DDS login pages did not match in terms of appearance and layout.**

The WHIP and DDS login pages were modified to match.

### 3.13 JTLS-2017-13398 ATO Parser TBMCS Mission Route Points

**The TBMCS ATO Parser reads mission records from an ATO message but gets the tasking, ingress and egress route points out of sequence. This happens when the TBMCS Adapter happens to provide ROUTE records for the missions.**

The TBMCS ATO Parser was modified to process location points within the ROUTE record by using the corresponding start times for each point. These start times are compared to the start times given for tasking points provided in other records. In this way, the tasking points are inserted between ingress and egress points given in the ROUTE record.

### 3.14 JTLS-2017-13399 Some CADRG Maps Failed To Load

**Some CADRG maps failed to load, throwing an exception.**

The error was a known bug in the openmap library. A workaround for the bug was implemented.

### 3.15 JTLS-2017-13400 Satellites Do Not Collect On BE DSAs

**The satellite collection algorithm always determined that the satellite did not cover a Basic Encyclopedia DSA.**

The logic error that prevented BE collection was corrected.

### 3.16 JTLS-2017-13401 Satellite DSA Collection Priority Improvement

If the user enters several National DSAs, each with the same priority, in the same area, and with relative small "relook times", the model does not cycle through and collect on all DSAs at least once.

The model determines if a DSA is legal for a given satellite. If two DSAs are legal and have the same priority, the first DSA entered into the model is always the DSA collected. The selection algorithm still selects the legal DSA with the highest priority (lowest priority number). In the case of a tie, the new improved algorithm selects the DSA that has not oldest last detection time.

### 3.17 JTLS-2017-13402 Transponder Off Does Not Erase PIFF Code

When a user turned the transponder Off for a ship, the PIFF code displayed on the Information Management Tool (IMT) changed to a blank. The user was concerned that the assigned value for the PIFF code was erased from the unit.

In the CEP, the PIFF code for a ship is stored as an attribute on the unit. The value held in the JODA and displayed on the IMT is an interpreted value, based on whether or not the transponder is turned on or off. If the transponder is on, then the ship's actual PIFF code is published on the JODA and displayed in the IMT. If the transponder is off, the JODA always displayed a blank PIFF code. This blank value confused the user, so now "NONE" is published if the ship has a legitimate PIFF code but the transponder is off. A blank PIFF code is displayed if the ship has no value for its PIFF code.

### 3.18 JTLS-2017-13403 OPM Contained Bad Links To TPFDD Data Fields

When the user clicked on the field title for unit TPFDD data, the page in the documentation did not open as expected.

Many fields for data in the OPM contain links to their appropriate pages in the *JTLS-GO Data Requirements Manual*. For the OPM page containing TPFDD data, several of these links were broken. The code incorrectly contained links to the Unit Arrive (UA) data instead of the documented data fields for just Units (UT). Changes were made, and the proper documentation opened when selected from the OPM.

### 3.19 JTLS-2017-13405 Sealane Arc Unlimited Speed Limit Crash

The CEP crashed shortly after a sealane arc speed limit was set by Controller order to unlimited (0.0). The crash occurred when a naval move attempted to travel on the sealane arc with NO speed limit.

Rail, Road and Sealane network arcs have an arc speed limit attribute. The Manage Movement Network Order Panel specifies that an entry of 0.0 for Arc Speed Limit means that the arc should have NO speed limit.



The Rail and Road network algorithms correctly handle this option, but the sealane network algorithm did not. A division by zero runtime error occurred when the naval ship was planning the route through an arc with NO speed limit. The error was corrected so that Sealane Network algorithms consider this possibility in the same manner as Road and Rail Network algorithms.

### 3.20 JTLS-2017-13409 Logistics Rollup Report CS Names Not Correct

**The Combat Systems listed for the rollup report were not correct.**

The message formatting file referenced an incorrect data token. The issue was solved.

### 3.21 JTLS-2017-13411 Correct Order Help Misspellings

**Some misspellings were discovered in various Order help fields.**

The identified help issues were corrected.

### 3.22 JTLS-2017-13412 ROE Distances Not Large Enough

**The ROE order panel only allowed the user to input ROE distances up to 999.9 KM. Some missiles have ranges longer than this.**

In the ROE order, the maximum ROE distance has been set to 4999.9 KM.

### 3.23 JTLS-2017-13413 Complete Failed Checkpoint Wrong Month

**The script to complete a failed checkpoint entered an incorrect date at which the procedure was executed.**

The procedure was always off by one month. The system clock returned a value of 0 to 11 for the 12 months of the year, where January is listed as 0. The script was changed to add a 1 to the month returned from the system clock when printing out the date at which the complete a failed checkpoint procedure was executed.

### 3.24 JTLS-2017-13414 Count Critical Order Program Illegal File Name

**If the user entered an illegal file name when specifying where to write the critical order summary count, the program would crash.**

The program now checks and handles illegal file names, by asking the user to enter a legal file name.

### 3.25 JTLS-2017-13415 Use Of Buffer Inconsistent

**Simscript has an internal buffer that can be used for writing and reading various text variable. There was a message that had some extraneous characters in them. It was tracked down to an illegal use of the rewind buffer capability.**

Each and every access to the buffer was reviewed within the model. All code now accesses and uses the buffer in a consistent and correct manner.

### 3.26 JTLS-2017-13416 Immediate Add Mission To Package Problem

**If a user takes an existing mission and tells it to become part of a package, the mission does not go to a good location to join the package. It basically stayed at its current location and never joined the package.**

The mission should join the package at the rendezvous point. When the mission attempts to execute the task, it determines whether the package has left the rendezvous point or not. If it has, the task is executed from the mission's current location. If the package has not left the rendezvous point, then the mission travels to the rendezvous point and joins the package.

A review of the code for removing missions from a package was also conducted and code was improved to centralize the removal process.

### 3.27 JTLS-2017-13417 Object UID Not Correct After ASCII Restart

**When reading in ASCII checkpoint data, the Unidentified Identification code (UID) was not correctly restored. Among other possible impacts, this resulted in an air mission attacking the wrong object after the checkpoint restart.**

To solve the problem, the ASCII read and write code needed to be accomplished in a different manner. The UIDs for HRUs, targets and units are no longer held in their ASCII checkpoint data, but are now held in their own file can be processed after all data has been read in.

This STR invalidates any checkpoints taken using previous releases of JTLS-GO 5.0.

### 3.28 JTLS-2017-13418 Crash In HRU Combat Damage Report

**The model crashed attempting to write the damage report for an HRU combat assessment.**

There was a mismatch between the concept of an HRU battle assessment and the kills from Lanchestrian assessment. These inconsistencies were corrected. The Controller immediate damage report and the BDA area damage reports now consistently report the High Resolution Battle damage and the Lanchestrian Ground Combat damage.

### 3.29 JTLS-2017-13421 Crash With Building Follower TGF Route

**The model crashed attempting to give a following unit a new route during a Tactical Ground Formation (TGF) move.**

The actual logic error was never identified. Instead, protection code was added to the model to catch the issue and report a Logic Error. This will stop the model from crashing, but will not stop a possible mistake in a unit moving as part of a TGF.

### 3.30 JTLS-2017-13422 Issues Caused By Incomplete TGF

**Not all of the units in the TGF order could be assigned to the TGF. Large problems resulted if all follower units could not join the TGF.**

The logic was changed. Before a TGF Move Task is accepted, the model checks if all units specified in the task can join the group. If not, the task is rejected, and the user must fix the problem manually.

### 3.31 JTLS-2017-13424 Naval Order Ground Compliance Message

**A Player submitted a quick order to initiate a Naval Move for a ship. The Player received a compliance message for this order. The subject of the message began with the phrase "Ground Order Received".**

The compliance message for this order should have a subject starting with "Naval Order Received". The code used to generate this message was only appropriate for ground-based units. A new section was added to also allow for naval units.

### 3.32 JTLS-2017-13425 Heading Home Mission Posture Change Issue

**If a mission changes its posture to heading home, and the user decides to send the mission elsewhere or provide new tasking, the posture does not change back to flying.**

The code to change the posture basically said that if the mission is heading home, there is no reason to determine a new posture for the mission. This incorrect check was removed.

### 3.33 JTLS-2017-13426 WSM Check For Correct Scenario

**The WSM would indicate that a service was running if any service was running on the port assigned to that service, even if it was for a different scenario or service type.**

The WSM was modified to check the scenario name before indicating that a service is running.

### 3.34 JTLS-2017-13427 Unable to Access WHIP Right-Click Menus

When a user would attempt to access Map and IMT right-click menus, the menu would not appear. "Time already canceled" would appear in the debug window. The apparent cause was that the SynapseDirectory Timer had exited due to an uncaught Java exception.

The Timer was replaced with a Executor, which replaces the Timer Thread if it exits for any reason.

### 3.35 JTLS-2017-13428 WHIP Order Group Editor Export Group

In the WHIP Order Group Editor, the "Export Group" function only exported the last group selected.

The logic was corrected to export all selected order groups.

### 3.36 JTLS-2017-13430 Log Rollup Across Different CSPs Confusing

When a Logistics Rollup Report was requested across a hierarchy of units that used different Combat System Prototypes (CSPs), the resulting report was confusing.

The issue was that for CSP A - LEOPARD tanks were Combat System 13, but for CSP B, LEOPARD tanks were Combat System 14. The rollup report used the names for the rolled up combat systems based on the top unit for the report. Thus the rollup did not report all of the LEOPARD tanks correctly.

The rollup report was changed to report the rolled up combat systems based on the CSP CS name used by each unit in the rollup.

### 3.37 JTLS-2017-13431 Crash Estimating Ground Movement Time

The model crashed when the user requested a ground move estimate for a unit that had incurred severe losses in the last Lanchesterian battle computation.

When under the influence of severe losses, a unit is not allowed to move. This resulted in the unit reporting a speed of zero, and the model crashed, dividing by zero. For a normal task, the model properly postponed the unit's move task until it was no longer under the effect of the severe losses. The move estimate order needed to account for this problem. The estimate now indicates a movement time under a normal movement capability. The returned message indicates that the unit currently cannot move because of its severe losses.

### 3.38 JTLS-2017-13432 Crash Computing PSYOPS Personnel Losses

The model crashed when determining how many people were going to leave a unit due to Psychological Operations (PSYOPS).

The typographical error that caused the crash was corrected.

### 3.39 JTLS-2017-13433 Air Defense ROE Distances Not Always Followed

**An Air Defense Site was given an ROE distance of 100 KM, but it fired almost as soon as the enemy mission entered the effective range of the site.**

The model computed the closest range of approach given the mission's current planned flight path. This range was only supposed to be used if the mission entered and left the air defense circle within one move. The logic error was corrected.

### 3.40 JTLS-2017-13434 JINN: Showing Extended Filter Exception

**The JINN Organization Filters have "Show" and "Hide" menus. When the "Show" menu is selected, an exception was thrown. The test scenario did not include any associated only targets, so the element has no children but tried to access a child node.**

In the code, the beginning of each "getSide" method added a check that counts children. Also, in order to not show an empty "Associated Only Targets" leaf node in a filter tree, a check was added to see if any associated only targets exist on the list. If there are none, the tree element is not generated.

### 3.41 JTLS-2017-13435 JINN: Mouse Over Unit Exception

**When a user moused over an HRU and displayed Tooltip info for the unit, an exception was thrown because the HRU did not have a faction but the JINN tried to retrieve it.**

A faction was added to the Tooltip for unit other than HRUs. However, the check statements searched the wrong data.

### 3.42 JTLS-2017-13436 HRU Move On River Without Boats Crash

**The model crashed when an HRU attempted to execute an HRU river move, when the HRU had no small boats.**

The task was properly rejected but this rejection happened before the code attempted to find a route. During the cleanup process, the model assumed that an attempt to find a route had been made. Since this assumption was not true, the model crashed. The logic was changed to check whether the a route had been attempted or not.

### 3.43 JTLS-2017-13437 Crash Attempting To Notify WHIP Unit Left TGF

**The model crashed while attempting to tell the WHIP user that a unit had been removed from a Tactical Ground Formation.**

The model removed the units from the formation and then attempted to notify the proper WHIP. By the time the notification logic was executed, the unit no longer knew anything about the TGF that it just left. Instead, the logic now notifies the player and then removes the unit from the TGF.

#### 3.44 JTLS-2017-13438 Improve Standalone Task Code Documentation

**The difference between an instantaneous task and a standalone instantaneous task was not clear in the code documentation.**

Comments in the code were expanded to help clarify the code that was being reviewed.

#### 3.45 JTLS-2017-13439 Crash Completing Unit Task

**The model executed the Complete Unit Task event for a unit that had no tasks.**

The cause of this problem was not located. Instead protection code was added to simply exit the routine if this situation is encountered again.

#### 3.46 JTLS-2017-13440 Debug Capability Uses Incorrect Variable

**The CEP code is setup to go into the debugger at the beginning of each event for a specific object. The EXECUTE HRU TASK event was entering the debugger for the object specified in the DEBUG.UNIT variable, it was suppose to enter the debugger for the object specified in the DEBUG HRU variable.**

The code was corrected.

#### 3.47 JTLS-2017-13441 HRU Does Not Move After Combat Assessment

**When an HRU combat assessment is complete, the HRU could become stuck and would not execute its next task.**

The logic to complete the current HRU assessment task was not properly executed. The error was corrected.

#### 3.48 JTLS-2017-13442 Adding More Than Five Point Route Not Correct

**If a user attempts to add a multi-point route using a specific starting sequence number, it is possible that the tasks will end up out of order.**

The following is an example of when the problem situation was encountered. Assume a naval unit had a Move Task with Sequence Number 5 and another Move Task with a Sequence number 10 and the user indicates that a 5 point route should be added at Sequence Number 6. The first point would get a Sequence number of 6, the second would be placed in position 7, the third in position 8, the fourth in position 9, and the last point would be placed in position 11.

The issue was corrected.

#### 3.49 JTLS-2017-13443 Ship Debris Not Properly Reported In IIR

**Ship debris seen on imagery data was not being properly reported on the generated IIR.**

The problem was corrected.

#### 3.50 JTLS-2017-13444 JOVT Performance Large Number Of Orders

**After sending a large number of orders, the JTLS Order Verification Tool (JOVT) results table would take an extremely long time to update.**

The table was being redrawn after each line was changed. The code was modified to only update the table after all order status changes are made.

#### 3.51 JTLS-2017-13445 Crash Assigning Link16 Source Track Name

**A crash occurred when a Link-16 air mission detected another mission, but there was no track block assigned.**

The model team could never recreate the situation. The error has been patched, so it generates a logic error but will not crash.

#### 3.52 JTLS-2017-13446 NATO OWNSITREP Unit Direction Incorrect

**The facing direction of a unit was incorrectly reported in the NATO OWNSITREP report.**

Facing direction is held differently in JTLS-GO 5.0. The OWNSITREP data was changed to properly use the JTLS-GO 5.0 method for specifying the orientation of a unit.

#### 3.53 JTLS-2017-13447 Better Airlift Estimate

**The airlift estimate was creating an estimated extra round trip for a very small amount of assets. The actual airlift movement code does not do this.**

The estimation routine was changed to ignore supplies for which there was only a small amount.

#### 3.54 JTLS-2017-13448 Crash Controller Creating Target In Future

**The model crashed when a Controller created a target at a future time. When the future time executed, the model crashed because the WHIP information for the Controller that submitted the order had been lost.**

The issue was solved.



### 3.55 JTLS-2017-13449 Taking Unit Out Of TGF Causes Issue

To remove a unit from a TGF, the user submits a Defend Order with a time of Now. The unit was removed from the TGF, but would not start to execute any new task.

The issue was fixed.

### 3.56 JTLS-2017-13450 Mission In Fuel Delay Shows Supply Delay

A Defensive Counter Air (DCA) mission went into launch delay because the airbase had no aviation fuel on hand. However, the IMT and Player message displayed SUPPLY\_DELAY instead of FUEL\_DELAY as the current posture.

The code checks to see if the mission's requirement for fuel has been met. This check is done after the code has tried to fill the fuel requirement from the airbase (or a nearby unit/target) in the calling routine. If the fuel requirement has not been met, the reason for the launch delay is reported in the IMT and Player message as a FUEL\_DELAY.

However, this check was not implemented in the code correctly. If the fuel value held in the mission's list of needed supply categories was less than or equal to zero, the code concluded incorrectly that the fuel requirement was not met. In fact, if the fuel value was greater than zero, the fuel requirement was not met. To correct the error, the conditional check was changed to test for greater than zero, meaning the fuel requirement was not met, thereby resulting in a FUEL\_DELAY display in the IMT and player message.

### 3.57 JTLS-2017-13451 Aircraft In IMT Reserved Column After Launch

When a mission entered PRE\_LAUNCH posture, the aircraft count appeared in the A/C Reserved column in the Squadron IMT. When the mission launches and the posture changed to FLYING, the aircraft incorrectly remains in the Reserved column and is not immediately moved to the A/C Flying column.

The problem occurred when the mission was taking off. The squadron aircraft counts were calculated immediately before the mission posture changed to FLYING. The mission posture was still PRE\_LAUNCH, which caused the aircraft count to be added to the Reserve column and not the Flying column.

The problem was solved by moving the posture change routine immediately before the squadron counts routine, so that the mission posture is FLYING and the aircraft are counted as such in the JDS for the Squadron IMT.

While investigating this problem, it was discovered that mission aircraft in a launch delay (e.g. FUEL\_DELAY, WEAPON\_DELAY, etc) were counted twice. In the Squadron IMT, the aircraft appeared in both the Reserved and Flying column. The logic was corrected to not count aircraft in delay status as Flying.



### 3.58 JTLS-2017-13452 Join Formation Now With Boundary Overrides

If a user enters an execute NOW order to join a formation with boundary overrides, the overrides are not placed in the task list properly.

The problem was corrected.

### 3.59 JTLS-2017-13453 Impossible To Correct Package Mission Tasks

The Correct Object Task order was designed to correct an object task list if necessary. It was necessary to correct the task list of some missions in an air mission package, but the code was not designed to do so.

The code was expanded to allow errors in a package missions task list to be altered.

### 3.60 JTLS-2017-13454 Manage Refuel Task Messages

Only the Player responsible for the air mission getting fuel was receiving the manage refuel chit message. The Player responsible for the tanker mission should also get the message.

The dual message receipt was implemented.

### 3.61 JTLS-2017-13455 Altering Air Mission Package Issues

When altering an air mission package, the tasks were not always updated correctly. In addition, changing a package to a Time On Target or a Time Reference Point package should not be allowed unless a target has been assigned to at least one OAS mission in the package.

The issue was corrected.

### 3.62 JTLS-2017-13456 DSA Set Not Managed Properly

The set of all Directed Search Areas (DSAs) is an ordered set. There were places in the code where a DSA attribute is changed without managing the set of DSAs properly. This caused missions and satellites not to properly select the best DSA for collection.

The issue was corrected.

### 3.63 JTLS-2017-13457 Crash Merging Formation When Tasks Unsaved

The model crashed attempting to send a message telling the Player that the merge formation task was accepted.

The model was attempting to access the merge task after it had been deleted from the system. The issue was solved.

### 3.64 JTLS-2017-13458 NAP Order Late Submission Errors

**If an existing National Asset Pass (NAP) order is submitted late, the route points in the pass are not properly adjusted.**

Satellite points that are supposed to execute in the NAP are now properly thrown away.

### 3.65 JTLS-2017-13459 ASCII Checkpoint Error HRU Fire Mission Target

**The model does not properly restore a Fire Mission that has a target of an HRU. An air mission-launched cruise missile can target an HRU.**

The case of having an HRU target has been included in the ASCII save and restart procedure.

### 3.66 JTLS-2017-13460 Documentation And Program Mismatch

**The DSA Spreadsheet Program never ends.**

The DSA Spreadsheet Program is looking for the word "STOP" as the final entry to trigger the completion of reading the data. The documentation and sample spreadsheet provided with each release show the use of the word "END" to trigger completion of reading the data.

The data read program was modified to look for the word "END" to make it consistent with the documentation and sample spreadsheet.

### 3.67 JTLS-2017-13461 Constant IIR Initial Observation Report

**The model constantly reported in an IIR report that the DSA collection was an initial collection.**

The logic situation causing this error was corrected.

### 3.68 JTLS-2017-13462 Crash Due To Removing HRU From Game

**The model crashed due to removing an HRU from the game.**

An enemy air mission had specified the HRU as its default target, and an air-launched cruise missile was headed to hit the HRU. When the HRU was removed from the game, the model crashed because the links between the air mission and cruise missile and the HRU remained. When the HRU is removed from the game, these links are now removed.

### 3.69 JTLS-2017-13463 Crash Tanker Mission Has No Fuel Record

**The model crashed because the user created a new tanker load and did not give the tanker any fuel. The SVP catches this error if found in the scenario database, but aircraft loads created and assigned to tankers without fuel during model execution are not caught.**

The model now checks for this situation. If the Controller attempts to assign a load to the tanker role that does not contain a fuel supply record, the order is rejected. Similarly, if a Player attempts to change the mission type of an existing mission to an Air Refuel mission and the assigned Tanker Load for that aircraft type does not exist or has no fuel supply record, the order is rejected.

### 3.70 JTLS-2017-13464 OPM Submarine Data Display

**The OPM displays submarine-specific data for all Ship Unit Prototypes (SUPs). It should only display the data if the particular SUP is a submarine.**

The code was modified to only display the Submarine Attributes section if the SUP is a submarine.

During this modification it was noted that some of the tags used by the OPM are older HTML 4.1 tags versus the newer HTML 5.0 tags. This was causing confusion for the browser, which was not following the strict guidelines of the stylesheet. Therefore the code was also updated to use HTML 5.0 tags. This is merely an update to the underlying HTML and does not affect functionality other than simplifying the task of the browser.

### 3.71 JTLS-2017-13466 ATO Parser Completion Report Inadequate

**When the ATO Parser finishes parsing the ATO and ACO messages, a valid count of the discovered missions and unique weapon loads is missing.**

The Parser was modified to maintain a count of missions while parsing the ATO message. It was also modified to maintain a list of weapon load names. When the Parser completes its processing, it produces a count of total missions and a list of all unique weapon loads it discovered from the ATO message.

### 3.72 JTLS-2017-13467 ATO Parser Terminates Reading ATO

**The ATO Parser reads and parses all records of the ATO message, including the Special Instructions (SPINS) Heading section. This section may include a very long record of more than 10,000 fields. The Parser stops processing when it encounters a record with more than this number of fields. When this happens no ATO data file is produced by the Parser for the Translator to process.**

The ATO Parser was modified to exclude parsing and processing of the Special Instructions (SPINS) Heading section of the ATO message.

### 3.73 JTLS-2017-13468 ATO Parser Fails To Process Location Field

**The ATO Parser processes the location fields of various airspace records contained in the F068 message format for ATOs. Each of the records RADARC, POLYGON, CIRCLE, and AORBIT use fields**

that contain locations. Except for the RADARC record, each field location uses a descriptor such as LATM or LATS.

The RADARC record has a location field that may use either LATM or LATS format but its location does not indicate which one is being used by prefixing with either LATM or LATS as is done by the other record types.

For F068 format messages, the Parser was modified to assume that no descriptor will be included as a prefix to the location field of the RADARC record. The Parser will first attempt to process the field as if the value is in seconds format (LATS), then it will attempt to process it as if its in minutes format (LATM). If either of these fail, a warning is reported.

### 3.74 JTLS-2017-13469 ATO Parser Applies Zero Altitude

The ATO Parser uses an altitude of 0.0 feet when the ICC provides a value of "0" for altitudes. The ICC should use "-" or leave the field blank but often fills the field with "0" to indicate the field is un-set. The ATO Translator receives the 0 value from the Parser and fills the associated parameter of the mission order specifically with 0.0 feet. Generally the minimum value defined in the CEP order is 10.0 feet so the order having 0.0 will fail.

The Parser was modified to convert a "0" altitude in the ATO and ACO message to an unset value in the same way as the value "-" would be provided.

### 3.75 JTLS-2017-13470 ATO Parser Does Not Report Mission Name

The ATO Parser provides the message line number and a brief description for each error or warning detected in the ATO and ACO messages as they are parsed. However, for some errors and warnings, the name of the mission that caused the error should be included in the error report. Having the mission name gives the user a second method by which to search the original message for the text that caused the error.

The ATO Parser was modified to include the name of the mission whenever errors PE-209, mission missing start time, and PE-211, mission missing end time are discovered.

### 3.76 JTLS-2017-13471 XMS Stuck Reading Deleted Message Files

The XMS must access the keyword and message cache files periodically from the message checkpoint directory associated with message requests from the users. Whenever previous, unnecessary checkpoint directories have been deleted, such as for the shadow game, the XMS becomes stuck and fails to process any message requests. In this event the XMS simply makes error log reports regarding failures to read the checkpoint files.

The XMS was stuck in a loop while trying to access a checkpoint file associated with a request. It has been modified to log the failure of reading the message checkpoint (cache) files only once then continue processing other message requests.

### 3.77 JTLS-2017-13472 Improve SVP Warnings 1321 And 1322

The aircraft load current weight was missing from Warnings 1321 and 1322. Adding this will allow the DDS user to quickly determine if the over limit quantity is a gross error or a matter of minor tweaking.

The aircraft load current weight was added to each warning message.

### 3.78 JTLS-2017-13473 JDSP Network Transmit Function Logs

The JTOI and other services process messages for transmission to an attached application, such as a C4I system. These messages can often exceed the JDSP default buffer size for transmission over a network connection. When the message is too big, the JTLS service creates too many error reports in its error log. The message is eventually transmitted, but the error log get filled with repeated reports of buffer increases.

Within the JDSP library, there is a function for transmitting message data through a network connection. As necessary this function adapts an internal data buffer when the size of the data exceeds the predefined default size. The buffer increase value was too slight to be useful and caused far too many buffer increases and error log reports in order to transmit a single very large message.

The buffer increase increment was modified to 15 percent of the initial default size (10,000 bytes) and the log report was changed to the output log rather than the error log.

### 3.79 JTLS-2017-13474 ATO-T Not Keeping OAS Mission Tasks In Order

The ATO Translator (ATO-T) appears to be creating the OAS mission order for the CEP by first listing all the orbit tasks followed by all the Target Tasks. This happens for missions in the ATO having multiple tasks that include targets and orbits.

The ATO-T was modified to keep the tasks in sequence for each task assigned to an OAS missions of the ATO.

### 3.80 JTLS-2017-13475 ATO-T Start Time Instead Of Complete Time

The ATO-T is using the wrong time for Transfer mission arrival time. It appears to be using the mission available time from the first route tasking.

The ATO-T was modified to insert the proper time in the Transfer Mission order. It now uses the arrival time given in the corresponding data for the mission in the ATO message.

### 3.81 JTLS-2017-13476 ATO-T Bad Time Value For Mobility Mission

The ATO-T used time zero (0) for Mobility missions provided without a leave time from the ATO message. The result is that the Mobility order gets an incorrect leave time and fails to pass order checks.

The ATO-T was modified to substitute "ASAP" in the mission order for any leave time that was not provided from the ATO message.

### 3.82 JTLS-2017-13477 ATO-T Fixes To Mission Checks

The ATO-T:

1. Does not list the associated Target Types (TTLs) when an "Incompatible Load Assignment (#506)" warning is given.
2. Does not distinguish whether a NET/NLT time was either not provided or a bad time was provided when a "Not Within ATO Period (#430)" warning is given.
3. Does not give a warning when no squadrons exist with the requested aircraft type from the requested tasking unit.
4. Does not check for over-tasking of aircraft from any included squadron
5. Does not provide a warning for RECCE missions that may include target tasking
6. Does not provide an error when a multi-target package mission has an invalid launch location

The ATO-T was modified to correct and incorporate each of these.

### 3.83 JTLS-2017-13478 ATO-T Early Refuel Time On Refuel Chit Orders

The ATO-T is not entering the scheduled refuel times on refuel chit orders whenever the refuel time comes before the receiving mission's start time. This causes the order to fail the order checking.

The ICC system may schedule an early time in this way because the mission might be changed by an operator to take off earlier.

The associated time check logic was removed from the ATO-T. If the time for refuel comes too early, it will still be included in the refuel chit.



### 3.84 JTLS-2017-13479 ATO-T Package Attack Order Multi-Target Fields

The ATO-T prepares orders for multi-target attack missions of a package as defined in the ATO. It also includes the associated multi-target order utility which contains one entry for each target as listed in the ATO records for the mission. However, the specific weapon and number of weapons for each target is left unfilled in the utility. This causes the order to fail order checking, but there is an appropriate warning from the Translator directing the operator to review the order in case a better weapon selection is desired.

A special routine was added to the ATO-T for selecting the weapons and numbers of weapons to be entered into the order for each target. This routine considers only the weapons available from the load used by the mission. The load may be predefined in the model or configured through the ATO-T's load linking page. Weapons used in the order must be Surface-Subsurface type as defined in the scenario database.

The ATO-T still issues a warning to inform the user to review the weapon selections for all missions having multi-target orders.

### 3.85 JTLS-2017-13480 ATO-T Attack Mission Target List JDPI Names

The ATO-T does not fill in names for JDPIs in the target list when they are being used as the target task. Even when the JDPI is known by the mission's side it is still not getting entered as the targets name. The name field for the target is left blank. This causes the order to fail checking.

The ATO-T was not using the JDPI Truth perception name whenever the name was accessed to fill in the target name for the order. The Truth perception name is now being used.

### 3.86 JTLS-2017-13481 ATO-T Manual Pair Feature Inoperative

The ATO-T creates DCA mission orders whenever a DCA mission is obtained from the ATO message. If the ATO-T is configured to allow manual pairing for all missions that can be paired, all of the DCA missions should include this flag in their CDA orders. However the ATO-T does not include this flag whether it's configured to use it or not. The ATO-T allows the default value only.

The ATO-T was not accessing the manual pairing option of the configuration prior to creating any DCA orders. It has been modified to use this to determine if the manual pairing flag should be included in the DCA orders.

### 3.87 JTLS-2017-13482 ATO-T AIRMOVE Locations As Tasking

The ICC generates all types of ATO missions which typically use an ICAO location as the departure and arrival from the home base of the mission. The ICC started using the AIRMOVE record as a point of departure or arrival. The AIRMOVE record, as it is use by the ICC often does not contain a start and/or end time and the ICC operator intends the AIRMOVE to represent the air mission's departure from and arrival back at the home base. The ATO-T interprets the AIRMOVE record as it

would be considered for a typical mobility mission. The associated locations are used as tasking (orbit) locations. This, however causes the mission to fly an unintended route.

The ATO-T was modified to ignore the AIRMOVE record when it is being used to represent departure from and arrival back at the mission's home base.

### 3.88 JTLS-2017-13483 ATO-T Known Targets By ICC Names

The ICC is generating ATOs with missions that identify targets using a different naming criteria. This naming criteria uses the proper JTLS target name for the perception side but also has a suffix attached to the end of the target name. The suffix is made from a dash "-", then a string identifier from the ICC is applied on the end.

The ATO-T is unable to match this composed name with any target known to the mission's side. The order is then written and the target name is blank. The order will not pass order checking and is not what was intended from the ATO.

The ATO-T was modified to pull-off the name suffix before attempting to match the target name. This allows the Translator to find the proper target and fill the order with the intended target name.

### 3.89 JTLS-2017-13484 ATO-T Multi-Target Alternate Launch Location

The ATO-T is not properly filling in the launch location of a multi-target attack, package mission when an ingress route has not provided for the mission. In the absence of an ingress path the ATO-T will use the location of the home base for the mission's squadron. This causes an undesired route for the mission.

The ATO-T was modified to include logic for using the first task location as the launch location whenever it is provided but an ingress route has not been given.

### 3.90 JTLS-2017-13485 DDS HUP Report Zero Supply Quantities

The DDS HUP Report always displayed zero for supply quantities.

An error was corrected in a stylesheet utility.

### 3.91 JTLS-2017-13486 ATO Message Popup For Air Missions

The "ATO Message" popup dialog for air missions would appear beneath the WHIP itself on some Linux systems.

The ATO Message popup was forced to appear in front of the WHIP.



### 3.92 JTLS-2017-13487 ATOT ICAO Mapping

**A JTLS unit was mapped to an ICAO in the ATOT interface module. This unit was then renamed. An error occurred the next time the ATOT module attempted to load the unit using the old name.**

Mapped units that cannot be found when loading are discarded and the user is informed of any discarded ICAO mappings.

### 3.93 JTLS-2017-13488 OTHGold/Link16 Interface Option Menus

**The Option and Feed menus should not have been accessible when not connected to a JOI service.**

All menu items other than the Service > Connect menu are disabled when not connected to a service.

### 3.94 JTLS-2017-13489 Remove WHIP Bad Login Screen Shake

**Entering a wrong password caused the WHIP's login screen to shake. On some machines, the login screen would move downward after ending the shake.**

The shake animation was removed from the WHIP login screen when entering a bad password. Instead, an error message is printed in red text.

### 3.95 JTLS-2017-13490 Link16 Service Crash And Slowdown

**The Link16 service would crash when handling more than 100 active tracks while running as a JREAP server. The service would also become unresponsive when adding JU block filters.**

The Link16 service has been fixed to dynamically increase its write buffer when running as a JREAP server. It now also remains responsive when processing JU filter blocks. The service's message feed can now also be started from the service console.

### 3.96 JTLS-2017-13491 OTHGold Service

**The OTHGold service could not have its message feed set to on or off without using a WHIP.**

The OTHGold message feed is now allowed to be adjusted through the service's console, which is accessed through the WSM.

### 3.97 JTLS-2017-13492 JTOI - ICC - name\_prefix With Targets

**The name\_prefix attribute for Targets was used within ICC, but this did not allow users to have names they could reference across JTLS and ICC.**

Targets are now managed using the reference\_name attribute from JTLS-GO.

### 3.98 JTLS-2017-13493 DDS Reports Supply Quantities

DDS reports displayed supply quantities to 1 decimal place, causing some small values to appear to be zero.

Supply quantities are now displayed to four decimal places in DDS reports.

### 3.99 JTLS-2017-13495 MDP Multiple Recipients, Accept New Email

Multiple WHIPs can now be recipients for the same message. However, the Message Delivery Program (MDP) was not updated to check for multiple recipients, so messages were not being routed correctly. The MDP Graphical User Interface (GUI) also failed to accept a new email delivery.

The MDP now handles multiple-recipient messages. The MPD GUI now correctly handles a new email entry in the delivery profile setup.

### 3.100 JTLS-2017-13496 SVPR Automatic Corrective Action Update

In cases where the corrective action is to update a table, if the entry being updated did not exist, the user was not informed that the corrective action failed.

The DDS Server was modified to return an error if an update does not change any rows. The DDS Client was modified to show the user any error messages returned from the server.

### 3.101 JTLS-2017-13498 Link16 Service JU Numbers From WHIP

Link16 JU numbers for tracks were being provided by the WHIP, instead of by the Link16 service. This would occasionally cause conflicts if the WHIP did not yet have access to the JU values for a track that the service did.

The Link16 service now provides all track information to the WHIP.

### 3.102 JTLS-2017-13499 OPM Damage Active Time Confusing

Each damage saying associated with a Category Code has a duration. This duration was printed out in decimal format. This was difficult to understand.

The damage saying duration is now printed in the OPM time duration format.

### 3.103 JTLS-2017-13500 Switching Air Route Optimization

Air missions that are flying a direct path route from source to destination, that are switched mid-flight to a network route, end up with a convoluted route. This could be reproduced and what was observed was that when the route optimization requirement changed, the code was adding the

**new route onto the front of the existing route instead of replacing it. This would cause the air mission to pick up the new route, then fly back and fly the old route.**

When the route is changed from a Direct route to an Optimized route, or vice-versa, the code now drops the existing route before replacing it.

### 3.104 JTLS-2017-13501 ELS Crash When Convoy Changed Status

**The ELS crashed while a convoy was changing from a status of loading to moving. This occurred after a restart from a checkpoint.**

This crash was associated with a zero value for the number of groups of trucks in the convoy. The ELS arranged the trucks in groups as part of the method used to align the trucks while they were moving. A value for the number of groups was not saved in the ASCII checkpoint for the convoy. A change was made to insure that this number was properly determined from the existing checkpoint data.

### 3.105 JTLS-2017-13502 GIS Tool Trimmed Road Networks

**A problem occurred when all the road networks in the GIS Tool project were trimmed using the "Trim nodes in current view" option. When prompted to Accept or Discard the reduced networks and Accept was chosen, the tool did not save the reduced networks; it saved the original networks, instead.**

The problem occurred with networks that consisted of a single road forming a loop. For example, an island's road network may consist of a single polyline that follows the coast line forming a loop. This caused an exception to be thrown when the tool tried to reconstruct the polyline with the reduced nodes. Since all reduced polylines are placed in a temporary set before they replace the original polylines, any interruption of the reconstruction process such as a thrown exception will leave all of the networks in their original state. A check to handle the first and last nodes of loops has been implemented to eliminate the exception.

Note: this is an entirely different problem and solution than JTLS-2017-13076.

### 3.106 JTLS-2017-13503 JOI - OTHGold Send All Documentation Change

**The documentation for the OTHGold Send All function failed to mention that objects set to "No Update" would not be sent.**

The documentation has been updated to state that only active and updating objects will be sent when using the "Send All" function.

### 3.107 JTLS-2017-13504 Expand Information Needed By NWARDS

**NWARDS needs some additional air defense information and some additional sensor type information.**

The additional information is now provided to NWARS in their assigned interface file called `<scenario_name>.nwa`.

### 3.108 JTLS-2017-13506 Magic Move Formation Causes Future Crash

**A magic move formation order was properly executed, but several hours later when an unrelated ship moved through the area, the model crashed.**

The magic move formation issue caused a problem with the grid sets that track the objects located in the grid. A pre-launch mission from the magic moved formation was listed in a grid that was not correct. The issue was found and fixed.

### 3.109 JTLS-2017-13507 Mission Stops Firing Missiles

**An air mission fired a few weapons and then stopped firing the remaining missiles that were specified as part of a Multi-Target Attack order.**

The issue is that the mission computed a firing location for the missile. The model decided that the mission was “close enough” to the firing location because the mission's radius covered the firing location. The model then went to fire the missile and computed the distance between the mission and the target. This distance was just slightly beyond the range of the weapon and a closer firing location was computed. This would continue forever. The mission determined it was “close enough”, but the firing algorithm determined the mission needed to move closer.

The inconsistency was corrected.

### 3.110 JTLS-2017-13509 Fixes From Spotbugs Scans

**The Java code is being scanned by the Spotbugs static code analyzer (previously known as Findbugs.)**

Various issues found by Spotbugs scans were corrected.

### 3.111 JTLS-2017-13510 Inefficient Search For Counter-Battery Systems

**The code that implemented the Counter-Battery Responses was extremely inefficient, and would search through all possible combat systems instead of through the combat system that the counter-battery unit owned.**

The code now searches through only the systems owned by the order-specified counter-battery unit.

### 3.112 JTLS-2017-13511 WHIP Deadlock During Startup

The WHIP would sometimes deadlock during startup. There were two places in the code where this was known to have happened, where the user interface was updated by the incorrect Java Thread.

Two places in the code where this was known to have happened were modified, so that the user interface was updated on the correct Thread.

### 3.113 JTLS-2017-13512 Inconsistent SVP DIS Code Messages

In the SVP, DIS Codes assigned to objects in the scenario are checked for validity. The rules for determining whether to generate an SVP warning or SVP error message were not applied uniformly to all objects.

Specifically, small boat types, targets, targetable weapons, and transportation classes generated a warning message if their DIS Codes were invalid. In contrast, combat systems, aircraft, and SUPs with invalid DIS Codes generated an error message. All invalid DIS codes should generate an SVP error message to be consistent.

Note that 0.0.0.0.0.0 is not considered an invalid DIS Code by the model, but does generate an SVP warning message because external models (e.g. MUSE/AFSERS, JCATS, and GESI), if used, require non-zero DIS Codes.

The existing SVP warning messages for invalid DIS Codes were converted to SVP error messages for small boats, targets, targetable weapons, and transportation classes to be consistent with combat systems, aircraft, and SUPs. The existing SVP warning messages for 0.0.0.0.0.0 DIS Codes were left unchanged for all objects, except to add Transportation Classes which were missing from the checks. Also, the existing warnings for invalid DIS codes for "unused" aircraft and "unused" SUPs were not altered.

Related to this subject, the Controller Set TW Parameters order was found to not accept a change to the weapon's DIS Code. The problem was corrected.

### 3.114 JTLS-2017-13513 Changing Weapon Lethality Overly Restrictive

When the Controller attempts to change the surface lethality of a weapon to NONE, the model determines if this is legal. When doing so, the model could incorrectly determine that the weapon could not be changed.

The logic was cycling through all missions that could possibly drop air-to-ground weapons and, if there were no such weapons on board, the order was rejected. It should only have been rejected if the mission had the weapon that was being changed on board and no other air-to-ground weapons. The code was fixed.

### 3.115 JTLS-2017-13514 Timers For DDS Table Column Position Saving

**The DDS would create a new Java Timer used to save column positions in tables for each open table.**

The DDS was modified so that all tables share a single Timer.

### 3.116 JTLS-2018-13515 JODA Client Reconnection Crash

**When the MUSE client disconnects from the JODA, and then tries to reconnect to the JODA, it sometimes crashes.**

A JDSP library routine for sensing readiness for reads and writes over a TCP connection was not resetting its index used for an array that maintains the list of available TCP sockets. It was possible under Windows to exceed the limit of the array and crash if the index was not reset before each call of this routine.

### 3.117 JTLS-2018-13516 Invalid Number In Destination Time For Ship

**A user ordered a ship to move to a new location. The computed time at which the ship would arrive at its destination was not a valid number.**

There were two problems associated with this issue. First, the computation to determine the arrival time incorrectly used a speed of zero if the ship started out with a speed of zero. The computation was changed to use the ordered speed if the current speed was zero. The second issue was that the data were updated on the JODA using the wrong order for the attributes. For all units types (except naval units), the destination time was given first as a real number and second as a text string. In this case, those attributes were reversed so the JODA held bad data for those fields.

### 3.118 JTLS-2018-13517 DDS Command Hierarchy New Force Side

**After a new Force Side was created in the database, that new side would sometimes not appear in the DDS' Command Hierarchy until the user performed a "Reload".**

This symptom would occur depending on the name of the Force Side. There was a bug in the Command Hierarchy component's command tree model that it failed to insert the new node in the tree if the Force Side was alphabetically the last one. The bug is now fixed.

### 3.119 JTLS-2018-13518 WHIP Did Not Decode DSA SIDE And SIDE\_ID

**The WHIP was not decoding the SIDE and SIDE\_ID of DSAs.**

Decoding of the SIDE and SIDE\_ID was added.



### 3.120 JTLS-2018-13519 ELS Crash While Restarting From Checkpoint

**The ELS crashed while it was restarting from a saved checkpoint.**

This crash occurred while the ELS was reading saved data for combat system entities. The problem was associated with bad data in the saved file which stemmed from an issue with the names of the dis-aggregated units. A recent change to the ELS resulted in non-unique names for these command objects. Since multiple objects had the same names, restoring from a checkpoint caused problems when the combat system entities were placed with their command objects. A change was made to always assign unique names to the command objects, and the associated crash was corrected.

### 3.121 JTLS-2018-13520 Filtered Order Group Editor Delete

**If orders or groups were filtered in the Order Group Editor, the delete option did not work.**

The filter is temporarily cleared during the delete. This caused the tree to appear to have no nodes selected. The determination of which nodes are selected was moved to before the filter is cleared.

### 3.122 JTLS-2018-13521 Unit Symbols Strength Low

**Unit symbols made unit strength appear to be lower than it was.**

The strength indicator cutoff values for unit symbols were changed.

### 3.123 JTLS-2018-13522 Default Utility Names Excessively Long

**Default utility names in the DDS had a number of trailing underscores. The default name is generated in part by using the utility field label from the parent order panel, with spaces replaced by underscores. The panel in question had trailing spaces in the labels.**

Spaces are now trimmed from the label prior to generating the default name.

### 3.124 JTLS-2018-13523 WHIP Message Browser Search Issues

**When searching message bodies, if a new message was selected, then the "Find Next" and "Find Previous" buttons stopped working.**

The search will now be re-done when a new message is selected.

### 3.125 JTLS-2018-13524 Crash When DOWNED.AIRCREW.HUP Not Set

**The SIP crashes during Warning 1445 (Squadron lacks small boat type) when the Global Variable DOWNED.AIRCREW.HUP is not set.**

The SIP Code for Warning 1445 correctly checks for the absence of DOWNED.AIRCREW.HUP before continuing the check for absence of small boat type. However the request for the HUP.REQUIRED.LIFEBOAT type was attempted before, and not after, the check for DOWNED.AIRCREW.HUP existence. This was corrected.

A separate SIP Warning 1247 (DOWNED.AIRCREW.HUP is not set) already exists and is correct.

### 3.126 JTLS-2018-13525 JINN Counter Table Fails To Appear

**When the user attempted to show the count table, it failed to show because of improper sizing of the array used to store the table.**

The estimate of the size of the table was changed so that it should overestimate. After the table is filled, it is resized to the correct size.

### 3.127 JTLS-2018-13526 JOI Modules Update After Closing

**The JOI modules continued to request updates after being closed.**

Upon closing, the JOI modules now cancel all update requests.

### 3.128 JTLS-2018-13527 JOI/Link16 Fixes

**The Simulation and Exercise indicators control how tracks are perceived on C4I systems. Modifying these flags accidentally can lead to JTLS tracks populating on C4I as real-world tracks.**

**Expanding the window frame would enlarge white space or components other than the filter and summary tables.**

**Users were unable to find tracks efficiently in the main track table.**

Users are now prompted when modifying the Simulation and Exercise indicator check boxes.

The frame layout has been modified to enlarge the tables when the window is expanded.

A search bar was added that can filter by a track's Short Name, JU, Source JU, and Track JU.

### 3.129 JTLS-2018-13528 JOBE DDSC Symbol Filter Panel Update

**When changing the value of the "all" row in the Symbol Filter Panel, the change was not propagated to the rest of the rows. The map was correctly updated.**

The FontPanel used to display the Symbol Filter Panel table was not listening for changes and therefore did not repaint the rest of the table.



### 3.130 JTLS-2018-13529 Cannot Create Emitter Objects

The Tech Controller was attempting to create Emitter objects in the JODA. After assigning an ELINT Notation (EINot) to the proper sensor type and assigning that sensor type as the ELINT sensor on the Assign National Assets order the Emitter objects for air defense, radars, and jammers that were turned on were not being created.

The problem was tracked down to an argument mismatch between the routine that processed the Assign National Assets order and the routine that created or destroyed the JODA Emitter objects. The order routine was passing the Sensor Type, which could be NONE, to indicate whether ELINT capability existed or not. The creation routine was expecting a Yes/No flag. Once the creation routine was modified to handle a sensor type instead of a Yes/No flag everything worked as designed.

### 3.131 JTLS-2018-13530 Long Directed Message List MDP Crash

When the Message Delivery Program (MDP) processes a Directed message from the CEP having a long list of directed receivers it crashes.

Message are written to a message index file for the MDP to read and transmit to a remote receiver program. The parameters of the message, such as the directed receiver list gets included in the file for each message. The MDP assumes a maximum length of 65 bytes for the directed list of receivers. When the list exceeded this length the data was written past the allowed size for holding the list. This caused a crash.

The allowed size was increased to 1024 and a change was made to the reading routine to disallow any data that is read beyond the 1024 limit.

### 3.132 JTLS-2018-13531 Missing SVP Truck Warnings

While revising SVP error & warning messages, internal comments were found that described two additional warning checks that were not implemented in the code. One check was supposed to generate an SVP warning message if a tanker truck was able to carry dry supplies. The other was supposed to generate a warning if a HET truck was able to carry non-self-propelled supplies.

The two missing warning messages were implemented in the code and the SVP message template.

### 3.133 JTLS-2018-13532 TRIPP Would Position To Incorrect Time

When the TRIPP was positioned to a new time using the calendar, the time would sometimes be incorrect.

TRIPP time calculations were changed, rounding off rather than truncating the number of minutes.

### 3.134 JTLS-2018-13533 ATO Parser VLATS Longitude Incorrect

**The Parser computes latitude-longitude pairs for locations specified in the AMSNLOC records for air missions of an ATO message. If the specified location uses the VLATS format, the parser will generate location points with a bad longitude. The corresponding airspace (point or polygon) used for the mission is saved with this error so the ATOT generates the mission's order with a bad point or polygon.**

The Parser uses a routine for decoding the latitude and longitude values in a location of a specific format. This routine was using common code for both "VLATS" and "LATDS" location formats. These two formats are different so the code for processing the "VLATS" was added separately to handle this format.

### 3.135 JTLS-2018-13534 Unable To Add New Networks From DDS Map

**When the DDS was in network editor mode, the "Add Network" button would become inoperative.**

The button's handler was modified to discard any ongoing edits when the button was clicked.

### 3.136 JTLS-2018-13535 No Missing DDSC Report Prompt

**When a DDSC report or report stylesheet was missing from the server, no error message was presented to the user.**

The report is now replaced with an error message when a DDSC report or stylesheet is missing.

### 3.137 JTLS-2018-13536 ATOV Scroll Speed Too Low

**The scroll speed for the ATOV scroll bars when using the arrows or the mouse wheel was extremely slow. It was 1 pixel per click. Additionally, if the ATOV was in time-centered mode and the user was dragging the scroll bar, it would snap back to current time while the user was still dragging.**

The scroll speed was changed to 20 pixels per click. The time-centered mode was modified so that time centering is suspended while the user is dragging the scroll bar.

### 3.138 JTLS-2018-13537 TechTool Order Group Copy Performance

**Long delays occurred when connecting to or refreshing the Tech Tool Order Group Copy. Delays of up to 20 min were observed after trying to connect to the remote server.**

The connection and reload performance in both the Order Group Copy and Map Slide Copy was improved by using a single established SSH session with connection and reload execution times going from minutes to seconds.

### 3.139 JTLS-2018-13538 TBMCS ATO Parser Incorrect Month

The message format for TBMCS requires the departure time of an AIRMOVE record to be in shortened Date Time Group (DTG) format. The ATO Parser for TBMCS ATOs is choosing the wrong month to go along with this short DTG. The Parser is using the month for the current ATO period rather than the following month whenever the arrival time falls on the last day of a month and the departure time falls on the first day of the month. This makes the departure time come before the arrival time for missions using AIRMOVE records.

The TBMCS ATO Parser was modified to consider the order of each day and time group from the arrival and departure DTGs. When the departure day and time comes before the arrival day and time the Parser selects the month after the month given in the arrival DTG.

### 3.140 JTLS-2018-13539 TBMCS ATO Parser Depart/Arrive ICAOs

The ATO Translator gives a proper warning whenever ICAOs have been left out of a mission from an ATO. However, the TBMCS Parser should present this information as a first processing of the ATO.

The TBMCS Parser was modified to report the absence of any ICAOs for arrival and departure locations. These errors were numbered PE-236 and PE-238.

### 3.141 JTLS-2018-13540 SIP Error Incorrect SUP Name

If Error 508 is generated during the verification process for a database HRU on a ship that does not have the needed small boat type to support the HRU, the error message listed the incorrect Ship Unit Prototype Name.

The problem was corrected.

### 3.142 JTLS-2018-13541 Java Exception In DDSC Startup

During DDSC startup, sometimes there was a null pointer exception printed on the Debug window. After the DDSC completed startup, there did not seem to be any further issue.

The null pointer exception was attributed to the Command Hierarchy Filters attempting to expand the hierarchy tree before the tree was established, and was corrected by ensuring the expansion only occurs when the tree has been created.

### 3.143 JTLS-2018-13542 Merging Inactive Formation Blank Message

A user attempted to merge an inactive formation with another formation, and the rejection message that was received was blank.

The missing message was corrected.

### 3.144 JTLS-2018-13544 Transfer Aircraft Always Taking Off Immediately

**Transfer aircraft missions were always taking off as soon as the order arrived in the game.**

The order panel incorrectly had the desired task time on a tab and not the main panel. The order format issue was corrected.

### 3.145 JTLS-2018-13547 SIP Squadron Far From Airbase Not Reported

**A squadron arrived in the game and did not attach to its home base. There was no indication in scenario verification that this was a problem.**

There are two rules for a squadron to attach to its home base: it must fall within the radius of the airbase, and it must be in the same grid. The SIP made the first check, but not the second check. The second check was added.

### 3.146 JTLS-2018-13548 TBMCS Verification Error 2000 Message

**When verifying that a Theater Battle Management Core system (TBMCS) database matches a JTLS scenario, Error 2000 means that TBMCS has a squadron located at an ICAO, and the JTLS database does not. The error message did not properly list the name of the squadron that had the problem.**

The error message was corrected.

### 3.147 JTLS-2018-13549 OPM Missing Route Optimization Parameters

**The OPM did not have a page listing the data values for each of the route optimization parameters.**

A new page was added to the OPM accessible from the Main Modeling Parameter menu.

### 3.148 JTLS-2018-13550 OPM Weapon Load Page Missing Links

**The OPM page for Weapon Loads had links to the documentation that did not work, and the page does not load for large databases.**

Both of these problems were solved.

### 3.149 JTLS-2018-13551 Supply Type Radius Does Not Change UOM

**On the OPM page for Supply Types, the radius of each Supply Type is listed. The user has the ability to choose which Unit Of Measure (UOM) to view this data. The UOM selector box is visible, but it does not work.**

The problem was corrected. The Supply Type page is organized in the same way as the Combat Arms Type page. The code in both routines were reviewed and made consistent for ease of maintenance. The radius worked fine on the Combat Arms Type page.

### 3.150 JTLS-2018-13552 RSP Crashes When Large Number Of Targets

**The database that was being used had over 50,000 targets. The Reformat Spreadsheet Program (RSP) crashed when this was true.**

The internal arrays for quickly identifying legal targets names were increased in size.

### 3.151 JTLS-2018-13553 ASCII Restart Impossible

**An air mission holds on to all of the intelligence updates that it collects during its flight time. Only the latest intel updates are reported when the mission lands. The set of intel updates for a specific air mission grew very large and the variable held by the model for the count of these updates was not large enough.**

The variable used to hold the count of the number of updates currently being held by an air mission was increased from a half word to a full word.

### 3.152 JTLS-2018-13554 TBM Air Defense Kill Range Not Checked

**Cruise missiles within JTLS fly at a constant altitude zone from the moment of launch to impact. Theater Ballistic Missiles (TBMs), on the other hand, have their altitude computed based on a parabolic flight path. When attempting to kill TBMs with air defense, the range of the air defense site in the cruise missile zone was used for TBMs instead of the actual computed altitude. This caused Air Defense sites to fire at TBMs under inappropriate circumstances.**

The computed altitude of TBMs is now used for determining whether an air defense site is covering the TBM.

### 3.153 JTLS-2018-13555 Crash Transferring Aircraft To Submarine

**The model crashed when a user attempted to transfer aircraft to a submarine.**

This order should have been immediately rejected. The code was changed to catch the specification of an illegal receiving unit as part of a Transfer Aircraft order.

### 3.154 JTLS-2018-13556 Stealth Not Applicable To Visual Detection

**The database parameter called AC PROB DETECTION is designed to alter the probability that a sensor can detect an aircraft. By setting this value low, the database builder can represent stealth aircraft. The issue is that this stealth parameter should not be applied to Visual Sensors.**

The AC PROB DETECTION variable is not applied when a Visual Sensor is attempting to make a detection of an aircraft.

### 3.155 JTLS-2018-13557 Changing ROE Takes Excessive Time

**In a database in which numerous ships are in close proximity to one another, and the automatic firing data is set, changing the Rules of Engagement (ROE) can take an excessive amount of time.**

The model was attempting to determine if automatic firing was allowed between each combination of enemy ships. In a large naval-based scenario, this led to an extremely long compute state. The logic was rearranged to remove some inefficiencies. These inefficiencies were especially overly compute intensive if the detections on both sides were obtained by area reports.

### 3.156 JTLS-2018-13558 Link-16 Tracks Of Cruise Missiles

**JTLS did not allow Link-16 tracks of cruise missiles.**

Air missions, Theater Ballistic Missiles, and Cruise Missiles can all be detected and reported by Link-16 assets.

### 3.157 JTLS-2018-13559 Logic Error During ASCII Air Mission Checkpoint

**The model generated a logic error during the ASCII checkpoint procedure when an air mission has a pointer to a refueler but was not in an appropriate refueling state.**

The user entered a Magic Air Ops order and told the mission to re-establish its flight path, its refueling task was canceled, but the pointer to the object from which the mission was designated to get fuel was not cleared out. The issue was corrected.

### 3.158 JTLS-2018-13560 Split Unit Issue Message Not Sent

**The WHIP that sends a Split Unit Order that cannot be fulfilled is not informed of the problem. Only the WHIP responsible for the unit being split is sent the problem.**

The sending WHIP is now informed of the problem.

### 3.159 JTLS-2018-13561 Convoy Intelligence Classification Not Set

**When the model detected convoys, it did not have all of the information needed to determine the sensor's ability to classify the types of truck assets in the convoy. This stopped the convoys from being reported in the Initial Imagery Report (IIR)**

The location and altitude of the sensor needed to be passed into the detection routine, so the model could determine the proper classification level for the detection.



### 3.160 JTLS-2018-13562 Cannot Remove Track Block From Unit

**It is impossible to remove a track block from a unit by entering a track block range of 00000 to 00000.**

The model rejected the order, indicating that the new track block overlapped other track blocks. A track of 00000 is the default indicating that there is no track block. The code was corrected to properly process this situation.

### 3.161 JTLS-2018-13563 No MISREP For MUSE Missions

**The model did not publish a Mission Report (MISREP) for missions flying within the Multiple Unified Simulation Environment (MUSE).**

A mission report capability was added when a MUSE mission completes.

### 3.162 JTLS-2018-13564 Ship In Formation Does Not Leave Port

**A ship that starts out the game in a formation and in port, does not change its in port status when the formation moves.**

The issue was corrected.

### 3.163 JTLS-2018-13565 Crash Inconsistent Wait Ship Logic

**The model crashed while attempting to magic move a formation with a ship that was waiting to find a good station location.**

The problem was caused by inconsistent logic when a ship is put into this wait state. The model assumed that the wait was forever and when the formation moved, it would get the ship out of the wait state if feasible. Another part of the code put the ship into a wait state until the formation moved the next time. These two approaches ended up causing the crash. The issue was resolved.

### 3.164 JTLS-2018-13566 Not Always Releasing Link-16 Track Numbers

**Two situations were uncovered in which Link-16 tracks were not being released for reuse.**

The Controller took the JU Source number away from a target and did not take away the assigned track block. Tracks were used but never returned because the target is not have a source. The track is no longer assigned under this circumstance.

### 3.165 JTLS-2018-13567 Civilian Air Traffic Flies At Low Altitude

**Civilian air traffic was not flying at their cruise altitude.**

The model was making the aircraft fly at one half of their cruise altitude. This makes no sense and no reason for this was documented. The code was changed to have the civilian air traffic fly at its cruise altitude.

### 3.166 JTLS-2018-13568 Too Many Convoys Being Deployed

**Convoys were being dispatched with only one supply category instead of all of the available requisitioned supplies.**

The logic error was corrected.

### 3.167 JTLS-2018-13569 Crash Scheduling New Naval Unit Task

**The model crashed attempting to schedule a new immediate task for a naval unit that had an existing future task.**

The typographical error in a variable name caused the crash. The error was corrected.

### 3.168 JTLS-2018-13570 ATO Parser Does Not Accept Valid Side Number

**The Jtlsmenu and Javamenu application launchers use a shell script as a utility interface with the user for running the ATO Parser. However, when the integer value for a side number exceeds 9, the shell script does not allow the user to input the side value.**

The shell script was evaluating input side values as characters rather than integers. This caused values like "10" to be evaluated as less than "6", for example. The shell script was modified to replace the command which checks the side values input by the user. The check now ensures the input values are held as integers rather than as characters. In this way the user is incapable of entering a value outside of the range sides for the scenario.

### 3.169 JTLS-2018-13571 Full Mission Name Not Shown In Message

**A sixteen (16) character mission name was not fully displayed in the Show Track Block message for a squadron.**

The message file was change to show the full name of missions that held track blocks.

### 3.170 JTLS-2018-13579 Remove Duplicate Flight Path Arcs

**There were over 14,000 duplicate flight path arcs in the standard database. These should be removed.**

The duplicate arcs were removed. For example, if the following two arcs existed in the database:

- Node 1 to Node 2 between 5000 and 12000 feet



- Node 1 to Node 2 between 12000 to 60000 feet

These two arcs were combined into one arc:

- Node 1 to Node 2 between 5000 to 60000 feet

### 3.171 JTLS-2018-13581 Expand Damage Sayings In Standard Database

Damage Sayings associated with the category codes are important to creating realistic post-strike intelligence reports. The majority of the Damage Sayings in standard database are a very generic statement of "Damaged". Thus many of the post-strike intelligence reports do not look very realistic to the exercise audience.

More realistic Damage Sayings were added to the standard database delivered with JTLS.

### 3.172 JTLS-2018-13583 SVP Warning 1434 Incorrect Message

SVP Warning 1434 incorrectly says there is a problem with Link-1. JTLS does not support Link-1

The message was incorrect and should have indicated that there was a problem with Link-16. The message was changed.

### 3.173 JTLS-2018-13585 HRU Not In Defend After Move Canceled

An HRU was given a single point move task and then the user canceled the move. The HRU did not go into the Defend posture.

The oversight was corrected.

### 3.174 JTLS-2018-13586 Highest Power Sensor Not Always Source JU

A Link-16 object that is detected has a Source JU number and a track block number. The track block number never changes as the object moves, but the sensor with the most power covering the object, should be the assigned Source for the detection. The highest power sensor was not always the one being assigned.

The logic error was corrected.

### 3.175 JTLS-2018-13587 IMT CAS Request Screen Has Java Error

The screen was attempting to display the type of aircraft the CAS Request has identified. The values passed by the JODA did not match the values accessible by the IMT screen.

A viable solution to this problem has been implemented, and works fine. However, the solution does not follow the programming standards of JTLS and a more permanent and correct solution needs to be addressed in future versions of JTLS.

## 3.176 JTLS-2018-13588 SVP Warning 2015 Confusing

The wording of SVP Warning 2015 was confusing. Airbase lengths were being printed in KM instead of FT, and runway "range" was written, rather than "length."

The confusing wording was corrected. The message now reads:

*Airbase X's longest runway is X FT. This is shorter than the TBMCS length of X FT.*

## 3.177 JTLS-2018-13589 Category Code Damage Sayings Deep Copy

The Category Code Table lacked deep copy capability for damage sayings.

The capability to perform a deep copy of damage sayings was added to Category Code Table.

## 3.178 JTLS-2018-13592 Tacelint Message Service Header/Footer

The Tacelint Message Service could not handle special formatting characters when parsing the header/footer file that specifies what content should come above and below messages that it outputs.

The Tacelint Message service was modified to add support for parsing and output of special formatting characters.

## 3.179 JTLS-2018-13593 JTLSCIENT Program For JOI

JTLS comes with a program called 'jtlsserver' to help with troubleshooting. It is especially helpful for running the JOI when a GCCS or other C2 system is not available. However, it can only be run when the JOI is run in client mode, not server mode. It is necessary to create a 'jtlscient' program to run when the JOI should be executing in server mode.

A 'jtlscient' program was created. It is designed to run as a client so the JOI can connect to it when running as a server.

## 3.180 JTLS-2018-13594 JOI/Link16 Cruise Missiles, Air Missions

Mode codes were not being filled for cruise missiles going out over Link16. These codes are reserved for aircraft but are filled in the same message type used by Cruise Missiles. Additionally, Cruise Missile types that Link16 should not process were not being handled properly. Finally, J13.2 messages (Air Platform Status) were being generated for air tracks (J3.2), which should not be done.

The Mode codes are now filled with empty values. Cruise missiles that Link16 should not process are now properly ignored. J13.2 messages are no longer sent for J3.2 air tracks.

### 3.181 JTLS-2018-13595 Badly Formatted Assess Weapon Damage

**While connected to MUSE, an external UAV air mission fired weapons at an entity held in the ELS. The ELS then passed this weapon fire up to the CEP using an order. However, in this case the ELS order caused the CEP to crash.**

The ELS used the order called Assess Weapon Damage to notify the CEP of weapon fire originating from MUSE. Each order is comprised of keywords and values. Since the last time this was tested, one of the keywords had changed on the aggregate order. This keyword on the order was changed within the ELS code to restore this capability.

### 3.182 JTLS-2018-13596 ELS Crash When MUSE Fired On Dead Entity

**The ELS crashed when MUSE fired on an entity which was already destroyed.**

When an entity is destroyed in the ELS, the entity is marked as immobile so it does not move if its parent object begins to move. The entity is reassigned to a new, immobile parent object. There was no option in the ELS to cause damage to an entity which was already immobilized. Code changes were made to prevent this situation from causing a crash. No additional damage is done since the entity was already destroyed. The additional code simply protects against a crash.

### 3.183 JTLS-2018-13597 ELS Crash Restarting

**The ELS was restarted after a crash, while there were still some external air missions flying in the aggregate model. The ELS attempted to restore these missions using the original entities assigned to those missions. This caused an ELS crash.**

The ELS was attempting to reassign the aircraft entities to their original missions but those aircraft had been used in other missions during the restart process. Code changes were made to prevent these aircraft from being assigned to more than one mission. This allows the ELS to restart properly and still maintain the externally controlled missions which were flying in the CEP.

### 3.184 JTLS-2018-13598 ATOT Aircraft Assignment Editor

**When assigning specific squadrons to tasking units as part of the ATO - Translation process, a comparison on the squadron is done to see if its aircraft type matches that of the tasking unit. This comparison was failing if the squadron's aircraft type was less than 3 characters long.**

The ATOT now handles the aircraft type comparison properly, even if the aircraft type is less than 3 characters long.

### 3.185 JTLS-2018-13599 ELS Caused CEP Crash

**The ELS caused the CEP to crash because it sent an external update order with no name for the intended air mission.**

The ELS was attempting to restore an externally controlled air mission after a restart. The ELS did not find an associated mission name for the aggregate mission, but it continued to send the bad order. Corrections were made to prevent the ELS from sending such an order to the CEP without first checking the mission name.

### 3.186 JTLS-2018-13600 JODA Code Name Search

**Using the console to the EODA, a user was unable to search for an ELS\_Target\_Element by name using the find command.**

The JODA/EODA console code did include the ELS\_Target\_Element in the list of object classes through which a find would search for a matching object. The search did not include this class. When added, a find using a valid name would return a good result.

### 3.187 JTLS-2018-13601 Shadow Game Allow Failed Checkpoints

**The Javamenu's Move Checkpoint to Shadow Game function did not display "failed" checkpoints in the dropdown.**

The Move Checkpoint to Shadow Game function now looks for the appropriate files to allow for "failed" checkpoints to be moved.

### 3.188 JTLS-2018-13602 ELS Ship Reporting Problem

**The ELS processed a Perception Support Order to provide intelligence data on a single ship. No data were generated even though the provided area included a ship.**

The Perception Support Order allows an external model, such as MUSE or NWARS, to share intelligence with a JTLS player for objects located within a specified rectangular area. In the case where this area contained a ship, the ELS was not reporting its existence or location to the aggregate model and subsequent player.

This problem was tracked down to a mathematical issue. The ELS re-used code from the CEP to identify objects located within a polygon. The code in the CEP is written using double-precision, but the ELS was using only single-precision in its computations. All of the affected code were changed to use double precision. This change resulted in the proper detection of ships that should have been seen in the specified area.

### 3.189 JTLS-2018-13603 ELS Crash Reactivate Unit Order

**The ELS crashed after a Controller sent an order to reactivate a unit.**

This crash was associated with the reactivation of a unit which appeared to have both entities and command objects as subordinates to the same parent command object. In the ELS, aggregate units were broken down into command objects and entities. By design, a single command object has subordinate entities or subordinate command objects, but not both.

This situation was the result of bad data in an ELS checkpoint from which the ELS was previously restored. For units where some of the entities were destroyed, the ELS restored these dead (and immobilized) entities at a level in their command objects where there were both types of subordinates. This bad structure within the data caused the crash. Changes were made to ensure that destroyed entities remained associated with their original locations within the command object structure. These changes prevent the bad structure from recurring during a restart of the ELS.

### 3.190 JTLS-2018-13604 Truck DIS Codes Needed By ELS For Convoys

**In order for an external model to see convoy trucks on the battlefield, those trucks must have valid DIS Code assignments. Some of the trucks in this scenario did not have those data.**

The DIS Codes for trucks in a convoy are derived from the codes assigned to their transportation classes. These data are obtained by the ELS from a static data file. That data file was correctly written by the CEP during initialization, but it was not completely saved by the SIP when it was executed.

This difference was due to the fact that the code in the CEP was newer than the code in the SIP. The SIP code was executed during the re-generation of the OPM, and the subsequent data file did not match the format expected by the ELS. This problem was resolved when the SIP code was improved to match that used in the CEP.

### 3.191 JTLS-2018-13605 ELS Crash Corrupted Air Mission Offsets

**The ELS crashed due to a corruption of the memory used to hold the offset locations for aircraft in air missions.**

This crash was due to the improper handling of memory in an ELS routine which determines the relative locations of aircraft in air missions. The memory was being released, but then the program tried to use that released data later in execution. A small code change was made to correct this problem.

### 3.192 JTLS-2018-13606 ELS Bad Data In Subcategory Name

**The ELS was publishing bad data for the subcategory name of target elements on the EODA. These data contained unexpected characters or sometimes blank names.**

When the ELS first published a target element, it correctly filled the subcategory name. Later, when the ELS updated the target element it sent an integer value instead of a string for the subcategory name. This code was corrected to ensure that the ELS always filled that data with a string name.

### 3.193 JTLS-2018-13615 ATO-T Removes AMSNDAT Records

**The Translator module of the WHIP is able to display the specific text of each mission from the original ATO message. When the text of the first record of a mission spans more than one line, the first part of the record is omitted from the text display in the WHIP.**

The ATO Parser prepares the mission data for later processing by the ATO Translator. During this process the Parser stores the line number from the original message for each record. The first record for a mission receives the line number of the final text of the record, which can be a later line of the text message when the record spans more than one line of the message.

The Parser was modified to locate the line for the start of this record and report this line number rather than the last line of the record. In this way the Translator is able to provide the proper display of the complete mission records text in the WHIP.

### 3.194 JTLS-2018-13616 DDSC SLP\_SC Table Preferred UOM Column

**When the user assigned a Preferred UOM in the DDSC's slp\_sc table, its secondary column, Preferred UOM Type, was not updated accordingly, leaving the UOM Type null if it was not assigned before. This would result the Preferred UOM data being nullified again during database unload because the unload script ensured the Preferred UOM and Preferred UOM Type data was consistent.**

The DDSC table's reference\_primary and reference\_secondary cell editors were improperly implemented. The code has been reworked to correctly implement these types of cell editors.

Although the slp\_sc\_uom\_type column in the database is nullable in the screen definition file for the slp\_sc table, we set the nullable attribute for the column's cell editor to "false", so that when user selects a non-null preferred UOM, the options for the preferred UOM type do not include null (on the other hand, when the user sets preferred UOM to null, the preferred UOM type will be set to null accordingly).

### 3.195 JTLS-2018-13617 MFP - REPLACE Function Fix

**The MFP's REPLACE function was not accepting the correct number of arguments as specified in the documentation.**

The MFP REPLACE function was modified to accept between 2 and 8 arguments.

## 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.

As JTLS-GO represents a major release of new functionality, remaining outstanding errors have been considered to be obsolete and no longer relevant to JTLS-GO and have been removed from consideration for correction at this time. In future maintenance releases, outstanding errors related to JTLS-GO will be listed in this chapter, with information provided regarding the extent of the error, as well as suggestions to avoid or minimize the effects of the problem.

### 4.1 DDSC - TMU Line Mode Changes Multiple Grids

When using the line mode in the TMU, more grids than the ones the line passes through are changed. This can also cause a warning about trying to change multiple layers to appear.

### 4.2 DDSC - Multiple Types In DDS History Table

If records for more than one table type are selected in the DDS History table, "History Details" will display details for only one type.

### 4.3 WHIP - Pipeline Not Shown On IMT

A pipeline being operated by a non-detected unit is not shown in the pipeline IMT.

### 4.4 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.

### 4.5 WSM - Many Messages Cause Lockup

If a service produces a large number of log or error messages in a short period of time, it can cause the WSM to lockup.

### 4.6 Strategic Airlift Does Not Work

Users should not submit Strategic Airlift Orders

### 4.7 Tactical Ground Formation Attacks Do Not Work

Users should not submit Tactical Ground Formation Attack orders. Tactical Ground Formation moves work fine.

#### 4.8 Materiel Handling Equipment (MHE) Does Not Work

The use of Materiel Handling Equipment (MHE) has been temporarily disabled in the model.

#### 4.9 Port Amphibious Operations Do Not Work

Users should not submit an order to do an amphibious assault or an amphibious pickup with the Port Option. The user should simply indicate that “Beach” operations are desired or Magic Move the unit off of the formation at an appropriate time.

#### 4.10 Multiple Point Ground Group Move Results Not Consistent

A Move order was submitted to a ground unit with a specified route consisting of three points. Four other ground units were specified as part of the group move (not a TGF move). After the lead unit completed its third Move task and the other units finished their movement, the position of the other units varied significantly from their starting locations relative to the lead unit before the first move began. The reason this happened is that when the group leader starts its move, it makes note of the relative position to each of the units in the group. Not all units were complete with their first move; therefore, the relative positions did not match the starting relative positions. To solve this problem, insure that all units have completed a previous group move before giving a second group move order.



## 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

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

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

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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

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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

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

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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
TACELINT	Tactical Electronic Intelligence
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

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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 5.0.10.0 STANDARD DATABASE CHANGES**

No new changes were made to the Standard Database (SDB) for this maintenance release.



## **APPENDIX C. Version 5.0.10.0 DATABASE CHANGES**

No changes were made to the JTLS-GO 5.0.10.0 database for this maintenance release.