

# JTLS-GO

## Version Description Document

April 2018



DEPARTMENT OF DEFENSE  
JOINT STAFF J7  
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**JOINT THEATER LEVEL SIMULATION - GLOBAL OPERATIONS  
(JTLS-GO 5.0.11.0)**

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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 5.0.11.0 delivery of the configuration-managed JTLS-GO software suite.

JTLS-GO 5.0.11.0 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 5.0.11.0 of the configuration managed Joint Theater Level Simulation - Global Operations (JTLS-GO<sup>®</sup>) software suite. JTLS-GO 5.0.11.0 is a Maintenance delivery for the JTLS-GO 5.0 series of releases.

JTLS-GO 5.0.11.0 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 5.0.11.0 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 5.0.11.0 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 Air Services User Guide* (JTLS-GO Document 03, Version 5.0.11.0)
- *JTLS-GO Controller Guide* (JTLS-GO Document 04, Version 5.0.11.0)
- *JTLS-GO Director Guide* (JTLS-GO Document 07, Version 5.0.11.0)
- *JTLS-GO Executive Overview* (JTLS-GO Document 08, Version 5.0.11.0)
- *JTLS-GO Installation Manual* (JTLS-GO Document 09, Version 5.0.11.0)
- *JTLS-GO Standard Database Description* (JTLS-GO Document 14, Version 5.0.11.0)
- *JTLS-GO Software Maintenance Manual* (JTLS-GO Document 15, Version 5.0.11.0)
- *JTLS-GO Entity Level Server User Guide* (JTLS-GO Document 19, Version 5.0.11.0)



- *JTLS-GO C4I Interface Manual* (JTLS-GO Document 21, Version 5.0.11.0)

### 1.2.2 Updated Documents

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

- *JTLS-GO Analyst Guide* (JTLS-GO Document 01, Version 5.0.11.0)
- *JTLS-GO Data Requirements Manual* (JTLS-GO Document 05, Version 5.0.11.0)
- *JTLS-GO DDS User Guide* (JTLS-GO Document 06, Version 5.0.11.0)
- *JTLS-GO WHIP Training Manual* (JTLS-GO Document 10, Version 5.0.11.0)
- *JTLS-GO Player Guide* (JTLS-GO Document 12, Version 5.0.11.0)
- *JTLS-GO Technical Coordinator Guide* (JTLS-GO Document 16, Version 5.0.11.0)
- *JTLS-GO Version Description Document* (JTLS-GO Document 17, Version 5.0.11.0)
- *JTLS-GO Federation User Guide* (JTLS-GO Document 20, Version 5.0.11.0)

### 1.2.3 Delivered Software Components

JTLS-GO 5.0.11.0 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 2.4.27
  - 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 (JOBE)

- Database Configuration Program (DCP)
- DDS User Interface (DDS)
- JTLS Terrain Building Program

Instructions for installing JTLS-GO 5.0.11.0 are provided in the *JTLS-GO Installation Manual*. Installing a previous version of JTLS prior to installing JTLS-GO 5.0.11.0 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 5.0.11.0 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.

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 5.0.11.0 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.

Note that 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.

- Java 8 Update 172 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 172, which expires on 17 July 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.

- JTLS-GO 5.0 implements SSH Tunneling between Apache and the services and among the services. Rigorous testing should be done prior to use in any exercise, and particular attention should be paid to network performance under load.

### 1.3.2 JTLS-GO High Level Architecture Compliance

The JTLS-GO 5.0.11.0 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 5.0.11.0 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 5.0.11.0 and previous versions of JTLS-GO 5.0.0.0.

Significant database structure differences exist between the various versions of JTLS-GO 5.0.0.0 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 5.0.11.0 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).

JTLS-GO databases should be unloaded and loaded after installation of JTLS-GO 5.0.11.0 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.

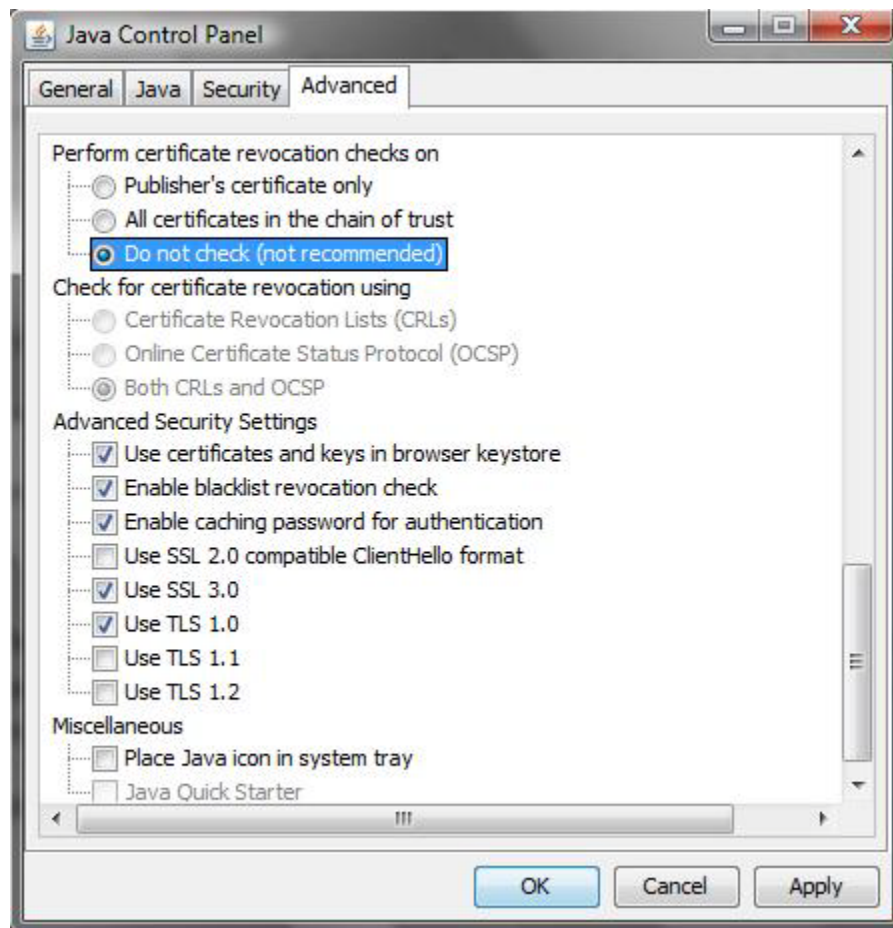
### 1.5.3 Disabling Certificate Authority

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 was changed between JTLS 4.1 and JTLS-GO 5.0. Files in the new format are delivered with JTLS-GO 5.0. 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, 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 5.0.11.0 as a result of implementing minor Engineering Change Proposals (ECPs).

### 2.1 JTLS-2018-13628 Manage Air Mission ATO Message Popups

#### Summary of Model Change Request

When working with the ATOT, users open many ATO Messages for the air missions. Users could open multiple dialogs for the same air mission, making it difficult to manage and differentiate the ATO Messages.

#### Design Summary

The WHIP now keeps a record of which ATO Message dialogs are open. If the user tries to display an ATO Message that is already open, the WHIP will bring that window to the front of the WHIP instead of opening a new dialog.

### 2.2 JTLS-2018-13630 Fire Mission Order Spreadsheets

#### Summary of Model Change Request

A method for reviewing the timing of TBMCS and Cruise Missile firing orders input via spreadsheet was needed.

#### Design Summary

JTLS order spreadsheets already have the required capability to allow review and verification, along with independent sending of the orders. Three spreadsheets were added to the Fire Missile order to allow firing at a unit, at a target, and at a location.

### 2.3 JTLS-2018-13663 Direct Damage Assessment On Same Side Objects

#### Summary of Model Change Request

When determining surface damage, either via artillery or air mission, the model inflicts both direct damage against a selected object and secondary blast damage. If the Player ordered the attack against a location, instead of an object, the model looks for and assigns a suitable object if one can be found. In the case of a precision guided weapon fired at a location, the model will look for any foreign object within the weapon's TW.SEARCH.RADIUS. For non-precision guided weapons, the model looks for any object, foreign or own side, within the TW.RADIUS.OF.EFFECTS.

The non-precision guided weapon search is resulting in direct damage and secondary blast damage assessment against own side units. Reports are also specifying the own side unit as the object that was intentionally attacked.

Secondary blast damage should still occur against own side units within the TW.RADIUS.OF.EFFECTS, but an own side unit should never be the primary object of an attack.

### Design Summary

The code was modified so that own side objects are ignored when searching for an object to attack when firing a non-precision guided weapon against a location.

## 2.4 JTLS-2018-13684 Create SVP Correction To Set Power To Zero

### Summary of Model Change Request

If the SVP determines that there is an inconsistency between the power of a sensor and its jam capable capability, there are two possible solutions: change the jam capable flag or change the power. Each of these options are presented to the user, but it should be easier to set the power of the sensor to zero instead of requiring the user to access the table to make the change.

### Design Summary

A new correction was added to the automatic correction definitions. The user can now set the power of the sensor to zero, by selected the option.

## 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-2018-13619 SVPR Formatting Error

**The DDS produced errors during startup and the SVPR did not function properly.**

Warning 1127 had data with the wrong number of attributes. The SVPR uses up to ten data fields to report the scenario errors and warnings. In the case of Warning 1127, the SVPR was expecting nine parameters, but the code was only writing eight data items. This was due to a formatting error, which only occurs when the code does not contain the proper conversion function. This function converts real numbers to strings, as required by this process. A small correction was made, and the problem was resolved.

### 3.2 JTLS-2018-13620 Small Island HRU Move Repetitive Messages

**A Downed Pilot HRU landed on a Small Island Grid with no road network. When the HRU was ordered to Rejoin Parent with a nearby Ship, the HRU Task Move was created and destroyed repeatedly. This process created a new CEP messages every second of simulation time.**

A Ground Wait Task was added to the HRU task once an Small Island Move was rejected. The message for HRU Move rejection now only occurs every MAX.MOVE.INTERVAL.TIME.HRU, or every 15 minutes in the standard database.

### 3.3 JTLS-2018-13621 Add Owing Federate to IMT Screens

**Operators were unable to quickly determine which units or air missions were federated with another system, such as MUSE.**

The Owing Federate attribute for units and air missions has been added to the Unit Information and Air Mission Information IMTs.

### 3.4 JTLS-2018-13622 ATOT Side Assignment Fails To Display Last Side

**The ATOT interface allows units to be tasked to a specific side. In a game with 10 sides, the tenth side was not being listed in the selection list.**

The ATOT interface was modified to include the tenth side in this selection list.

### 3.5 JTLS-2018-13623 Tech Tool Order Group/Map Slide Copy

**The following convenience features were missing from the Tech Tool: the host name in each column, a pop-up when authorization fails, a caps lock warning, and the ability to preserve tree expansion during a reload.**

All improvement features were added to the Tech Tool copy utilities.

### 3.6 JTLS-2018-13624 Fixes From Spotbugs Scans

**The Java code is being scanned by the Spotbugs static code analyzer.**

Various issues found by Spotbugs scans were corrected.

### 3.7 JTLS-2018-13625 SVP Message Template Errors

**The Scenario Verification Program (SVP) message XML template contained a couple of numerical numbering errors. Warnings 1206 and 1238 started counting data elements at 1 instead of 0. Warning 1502 always assumed that it was reporting a ground unit even though a naval unit could generate the warning. The length of the message with Warning 1127 was too long to fit on a single line of the DDS/SVPR utility.**

The indexing of Warnings 1206 and 1238 were adjusted to start the arguments at 0 instead of 1. The code that generates Warning 1502 was modified to output whether a TUP or SUP was involved and provide the correct name. The message and corrective actions of Warning 1502 were adjusted to indicate whether a TUP or SUP unit was involved and open the appropriate table. The message associated with Warning 1127 was reduced in length.

### 3.8 JTLS-2018-13626 JTOI - Remove TUP Tank Count

**The CEP no longer handles Tank Counts for TUPs, which is a piece of data that the JTOI would feed to other systems.**

The JTOI no longer attempts to read this data from its initialization files written by the CEP.

### 3.9 JTLS-2018-13627 ATO Spreadsheet Parser Crash

**The ATO Parser processes each field of each mission contained in a spreadsheet ATO. However, when a call sign field of any mission in the ATO has no data, the Parser crashes.**

The ATO Parser attempted to reference portions of a mission's call sign field when there was no string data in the call sign field, causing the crash.

A modification was made to the Parser to check whether the data is available and whether the data has a numeric extension. Both cases would cause the crash. In the case where the numeric extension is missing, the Parser adds a default "00" to the assigned call sign and gives a warning.

In the case where the entire call sign is missing the Parser assigns a default of "NONE00" and reports a warning.

### 3.10 JTLS-2018-13629 Collapsed Filter Panel Reappears

**The WHIP map window contains a divider between the map display area and the map filters pane. The divider itself has left and right expandable buttons that move the divider either to the left or right edge of the map window.**

**If the map component window is increased in size, when the divider is set to hide the filters pane, the hidden filters pane would reappear.**

The problem has been corrected to have the divider maintain the edge position when the map window is resized.

### 3.11 JTLS-2018-13631 Spreadsheet ATO Missing Location Records

**The ATO module sent a message saying several missions did not have a mission location.**

The code for the spreadsheet ATO Parser was missing a call to create the mission location xml records for EC and Patrol missions. The call was implemented and tested.

### 3.12 JTLS-2018-13632 Spreadsheet ATO Missing Refuel Missions

**After processing an ATO spreadsheet, several refuel missions were missing, although no warnings were issued.**

Further research showed that every other refuel record was missing. No matter what kind of mission followed the refuel mission, if the refuel mission did not have any chits for other missions, the next mission to be processed would be skipped.

The logic that caused the next record to be skipped was corrected.

### 3.13 JTLS-2018-13633 ATO Spreadsheet Latitude/Longitude Invalid

**The spreadsheet ATO Parser is entering simdebug when processing latitude and longitude information.**

The spreadsheet latitude and longitudes contained spaces. The Parser was not programmed for this format. The Parser was updated to remove any spaces. This fixed the immediate problem. It was determined a subsequent ECP needs to be created to add checking of all possible spreadsheet fields to prevent further problems.



### 3.14 JTLS-2018-13634 Spreadsheet ACO Altitudes Bad

**Altitudes used in a spreadsheet ACO are not being properly converted. Missions are flying at the altitude as entered in the spreadsheet, which is in hundreds of feet. It should be flying at the spreadsheet altitude \* 100.**

The spreadsheet program is supposed to convert the field by multiplying by 100 before it is sent to the CEP. The correction has been made.

### 3.15 JTLS-2018-13635 CAS Request Time Late Not Correct On IMT

**The Latitude column on the IMT CAS Request Screen was showing a value of "T" or "F" rather than "Y" or "N".**

The field was being rendered to just display the data without prior conversion. The renderer was changed to convert the data into "Y" or "N" (YES/NO) format before rendering it.

### 3.16 JTLS-2018-13636 DSA Spreadsheet Location Conversion

**In the text to decimal latitude/longitude conversion in the DSP, tenths were ignored if they were specified, and minutes, seconds, and tenths were not being reset between the latitude conversion and the longitude conversion. So, for example, an entry of 123415N 018W would actually be converting 123415N 0183415W.**

DSP latitude/longitude conversion has been corrected, and the format modified to accept tenths without a decimal. This change has also been implemented in the ATOP\_SPR program.

### 3.17 JTLS-2018-13637 ATO Spreadsheet Parser Time Zone Indicator

**The spreadsheet ATO Parser crashed while trying to compute the new mission start times based on the new desired offset start date entered by the User.**

In order to compute the new start times, the Parser needed to compute the difference between the original ATO start time and the new desired start time, which requires building a proper date time group. The date time group needs to include the time zone indicator, which was missing from the equation. The equation was corrected.

### 3.18 JTLS-2018-13638 Pacifica Outline Map Changes

**The country boundary for the southern portion of Mojave in the Pacifica vector map does not match the underlying shape file, nor the National Boundary, that is in the DDS database.**

The data from the National Boundary was used to replace the portion of the Pacifica vector map that did not match the underlying shape files.

### 3.19 JTLS-2018-13639 IMT Faction As Integer vs Faction Short Name

**The Faction column of the IMT Airbase screen shows the JEDI of the Faction instead of the name.**

The problem was that the renderer was instructed to retrieve the Faction JEDI and display it unchanged. The retrieval instructions were changed and now the name associated with the Faction is displayed in the IMT Airbase screen.

### 3.20 JTLS-2018-13640 Unit Airlift Flying To ON OE

**A task was added to an air mission using the Manage Air Mission Tasks order to lift a unit, and the pickup location was omitted. In this situation, the air mission should use the current location of the unit to be picked up as the lifting location. Instead the mission was flying to ON OE to perform the pickup.**

The Manage Air Mission Tasks order is an "initialized" order, meaning that integer/float fields that are not explicitly filled by the user are assigned a value of -1.0. This was the case for the pickup location, which was given a value of -1.0,-1.0. However, the underlying Simscript code was checking the field values against 0.0, instead of against -1.0, to determine if they had been filled. The code was modified to properly check against -1.0 instead of 0.0.

In addition, the Mobility Mission order was changed to an initialized order so that the fields were filled with -1.0 when the player did not specify a pickup location. Both the Mobility Mission order and the Manage Air Mission Tasks order invoke the same underlying Simscript routine and both must be initialized orders to ensure the pickup location is properly determined.

### 3.21 JTLS-2018-13641 Game Crash Lifting UAV Squadron

**The CEP crashed when lifting the last load of a UAV squadron that did not have an associated airbase. The code was attempting to find the location of the airbase, resulting in a null reference error.**

The code was modified to use the destination location of the lift instead of attempting to access the location of the home base.

### 3.22 JTLS-2018-13642 Logistics Rollup 0.00001% Of Original Strength

**When a game first starts, the rollup strength, meaning the unit and its subordinates, is calculated for every unit. This value appears in the Logistics Rollup Report as the unit's original rollup strength. This report is showing numbers in the range of 0.00001% when the report is requested.**

The problem was identified in the original rollup strength calculation. We were adding the rollup strength of the second level subordinates for each type of combat system owned by the subordinate. These second level subordinates should only have been added once. The code was modified to perform the correct summation.

### 3.23 JTLS-2018-13643 Helicopter Not Entering Grid

**Helicopters would not enter grids were the maximum elevation within the grid was greater than the helicopter's flight ceiling. They should have been using the average height within the grid rather than the maximum height to make this determination.**

The routine that provides the elevation for a grid provides both the average and the maximum elevation. In this case the calling arguments in the stack were reversed and the wrong elevation was being used for the calculation. The calling arguments were fixed to conform to the order of the routine.

### 3.24 JTLS-2018-13644 Scenario Execution Tools Menu Spacing

**On the Javamenu Scenario Execution Tools menu, the spacing between the item numbers and the descriptive text was not consistent. This had zero affect on performance or capability and is only a presentation issue.**

Spacing on the menu was made consistent.

### 3.25 JTLS-2018-13645 Game Crash Generating Refugee Traffic

**The model crashed when attempting to register HRU refugees, created via the Generate Traffic order, with the AAR. The order was passed in as the creating object but the type of object was specified as a Pending Task.**

An additional argument was added to the routine so that the type of object could be passed, in addition to the object itself. Previously, the routine always assumed it was passed a Pending Task. The type of objects recognized were also expanded to include air missions, so that Downed Pilots could be tied back to the air mission that created them.

### 3.26 JTLS-2018-13646 Lifeboats Not Filled Properly

**While a ship with an embarked ground unit was sinking, an Abandon Ship order was sent. The lifeboats deployed with only one personnel combat system on board each.**

The algorithm that determines how many and which types of personnel combat systems are assigned to each deployed lifeboat did not keep proper track of the number of available seats. In this particular case, the number of embarked personnel available was sufficient to meet the lifeboat HUP TOE, which required only one combat system of a specific type. The logic boarded the one person, but then failed to properly update the available seat count, which had never been initialized in the first place. When the algorithm next tried to assign other personnel to the lifeboat, none were assigned because the seat count was zero.

The problem was solved by initializing the available seat count based on the number of personnel in the lifeboat HUP TOE. Additional code was added to decrement the seat count as personnel were placed in the lifeboat HRU from the embarked unit.

### 3.27 JTLS-2018-13647 ATO Spreadsheet Missions w/o Call Sign Number

**A daily ATO was generated using the JTLS Spreadsheet format. The mission names contained both a call sign (BOXER) and a call sign number (20), which should have been combined into a full call sign (BOXER20). However, only the initial portion (BOXER) was going through when the mission were generated, resulting in numerous missions with duplicate call signs.**

The ATO Parser Spreadsheet was properly collecting both pieces of information but keeping the call sign number separate from the call sign base name while entering the data into XML for the Translator. The XML "CallSign" field is supposed to be the complete call sign for the mission and the XML "CallNumber" field should just be the suffix number of the call sign. The Translator now uses the proper call sign for generating air mission orders from spreadsheet air missions.

### 3.28 JTLS-2018-13648 IMT Unit Posture Selection Does Not Work

**A User tried to select all the units that had the same Posture as the highlighted unit. The IMT returned a list of all units, no matter what the Posture was.**

Since Posture is an existing filter/condition on the IMT screen that is being opened, the WHIP adds the query Posture check to the list of already allowed Postures, instead of creating a new Posture filter/condition. The query match was changed from posture to id.posture, making it a unique condition which is then handled separately by both the WHIP and JXSR. In addition the stylesheet that verifies the IMT screens was modified to find and identify similar issues, of which one was found in the Squadron Aircraft Availability IMT screen.

### 3.29 JTLS-2018-13650 Split Mission Goes Home Immediately

**A split air mission goes home immediately after being created.**

The problem was due to the air mission's crew start time attribute. It was not properly set during the split. This resulted in the split mission believing that it started flying at time zero and that its crew time was exceeded.

### 3.30 JTLS-2018-13651 Embarked Units Not Killed When Last Ship Sinks

**All ships in a formation were killed and the embarked unit collateral destruction did not occur.**

When the ship started to sink, it was removed from the formation. When the actual sinking occurred, the fact that the ship may have some embarked assets was not checked and so those assets were not properly destroyed. The ship now remains in the formation until it actually sinks or the user specifically removes it from the formation (the only way to remove the sinking ship from the formation is to first move the embarked unit(s) from the sinking ship to another ship in the formation and then split the formation specifying the sinking ship).

This solution also corrects a crash situation involving the Pass Intelligence order. The crash occurred when a Pass Intelligence order was sent for a unit embarked on a formation consisting

of only one ship that happened to be sinking. The order specified that subordinate units (without naming them) were to be included in the intel update, but not submarines. Because the sinking ship had been removed from the formation when it first started sinking, there was no ship to access when the logic tried to determine whether or not the embarking ship was a submarine for the subordinate unit. The first ship null pointer crashed the CEP.

### 3.31 JTLS-2018-13652 Too Much Information On Ship Localization Icon

**When a ship is detected with only localization or classification information, the icon shown on the WHIP uses the ship's TUP graphics symbol. This should not be known until the detection goes through the recognition level.**

The general unit icon is now displayed for naval units in detection localization and classification level. Note that in most databases this is a blank rectangle. This is not a perfect solution, and a new general ship icon will be placed in the next major release of JTLS-GO (JTLS-GO 5.1.0.0) in late 2018.

### 3.32 JTLS-2018-13653 Mobility Mission Did Not Pickup HRU

**A Mobility mission landed to pick up an HRU that was approximately 2 km away. The mission went into a WAITING posture (i.e. GROUND\_WAIT task) because the HRU was not near enough to pick up. The Manage Air Tasking order was used to change the location of the LOAD\_UNIT task to be closer to the HRU and cancel the GROUND\_WAIT task. The mission failed to fly to the new location and remained in a WAITING posture.**

The problem was caused by a flaw in the logic that determines if the HRU was close enough to be picked up (or extracted) when a runway or airbase is not involved. The algorithm simply determined if the HRU radius overlapped the mission radius. The player-specified pickup location in the Air Mobility order was not close enough to ensure the two objects overlapped, which caused the mission to enter a WAITING posture.

The overlap algorithm differed from the initial calculation that determines if the mission has flown close enough to the specified LOAD task location. The difference became apparent because the mission did not land at an airbase or runway to pick up the HRU (i.e. an LZ landing). In that situation, the calculation for the LOAD task used a MAX OFFSET DISTANCE tolerance in place of the unused airbase or runway radius. Thus, the mission thought it was close enough to accomplish the LOAD task and didn't fly any closer when the LOAD task location was changed slightly by the player using the Manage Air Tasking order. That caused the mission to remain in a WAITING posture.

Changes in both algorithms were required to fix the problem. In the initial calculation to determine if the mission was close enough to the specified landing location, the MAX.OFFSET.DISTANCE was removed because it was superfluous: We are only interested in making sure the mission is at the ordered task location (i.e. within the mission radius plus object radius), without regard to the location of the HRU to be picked up. If the player ordered an LZ

landing, no extra MAX.OFFSET.DISTANCE "padding" is necessary to verify the closeness of the location. If the player ordered a landing at an airbase or runway, those object radii are used.

In the second algorithm which verifies the mission is close enough to the HRU, there was no MAX OFFSET DISTANCE "padding" used in the LZ landing zone situation. Thus, when the loading task began to process, the model concluded the mission was not close enough and entered the WAITING posture. To correct that problem, the missing MAX OFFSET DISTANCE was added to complete the sum of the mission radius and the HRU radius.

While correcting the above code issues, the logic that determines if the mission is close enough to pickup an aggregate Unit was reviewed. As in the HRU case, the MAX.OFFSET.DISTANCE was missing when the mission landed at an LZ. The MAX.OFFSET.DISTANCE was added to ensure consistency with the HRU case.

These changes fixed two issues (1) the Player need not be as precise (i.e. as close) when specifying the pickup location in the original Mobility Air Mission order or any subsequent Manage Air Mission Tasking orders, and (2) the model now uses the correct logic to determine if the mission is close enough to the player-specified LOAD task location as well as the actual Unit/HRU location.

### 3.33 JTLS-2018-13654 Move Order Sent To Airborne HRU - Crash

**An HRU Task order was sent to an HRU that was on board an air mobility mission. The HRU was ordered to perform a ground move with an execution time of NOW. The HRU exited the mission and started moving. The mission continued to the dropoff point, whereupon an attempt to place the HRU resulted in a CEP crash.**

An HRU being lifted by an aircraft mission should not process most task orders with an execution time of NOW. New code was added to first check the status of the HRU before executing the task. If the HRU is currently on board an aircraft, the task is placed at the top of the pending tasks queue for execution after the HRU exits the mission. Exceptions to this rule are EEI changes and boundary crossing permission changes which are immediate tasks that are still executed while the HRU is airborne.

Additional code was added to schedule the execution of the HRU's first pending task after the airborne insertion, dropoff landing, or air mission completion. This change also allows HRUs that have been magic moved to execute the first pending task if the Delete Old Tasks option was set to NO in the Magic Move order.

### 3.34 JTLS-2018-13655 Defend Task Assigning Cover With Value Of Zero

**A checkpoint was taken and loaded into the DDS as a starting point for future exercises. One of the units would not load because it had an assigned Cover With attribute of 0.0. The database restricts this attribute to between 0.01 and 0.99 inclusive. Since the attribute was not within the allowed range, the record was discarded during the load procedure.**



Initially the attribute was changed by hand within the checkpoint file to accomplish the DDS load. However, the goal is to always have values remain within range so any checkpoint can be loaded into the DDS with minimal user action.

To this end we discovered that the unit likely had its Cover With attribute set to 0.0 as the result of a Defend order. This order allow the player to assign a new percentage for the cover with attribute. If order field is left blank a value of 0.0 was being propagated to the Pending Execution Task, and when the task executed the code checked if the field value of greater than or equal to 0.0, and if so assigned it to the unit. This final check was modified to see if the field value is greater than 0.0 before assigning it to the unit.

### 3.35 JTLS-2018-13657 DETERMINE.LOGFAS.SC.FLAG Bad Argument

**An incorrect argument from UPDATE.LOGFAS.FLAG to DETERMINE.LOGFAS.SC.FLAG was discovered. A Unit TUP/SUP was being passed rather than the SLP.**

The argument in the call from UPDATE.LOGFAS.FLAG to DETERMINE.LOGFAS.SC.FLAG was corrected.

### 3.36 JTLS-2018-13658 Aircraft Weapon Loads OPM Loading Problems

**For large databases, the OPM page listing aircraft weapon loads did not load correctly. The content displayed in the browser looked normal at the top of the page, but further down the content changed to plain text, with none of the expected hyperlinks.**

Code changes were made to split the aircraft load data into multiple, smaller files. These OPM pages loaded significantly faster, and all of the content were formatted correctly. This problem was incorrectly reported as fixed in version 5.0.9.0, in STR JTLS-2018-13550.

### 3.37 JTLS-2018-13659 Unit/Target Report Embarked Objects Missing

**A Controller Unit Report was submitted for a specified unit that was embarked on a naval formation. The embarked unit, its targets, and the embarking ship were ignored. When a Controller Target Report was submitted for a target on a ship, both the target and the ship were reported as expected. However, when a Target Report was submitted for a specified target owned by the embarked unit, the model crashed.**

The logic incorrectly excluded all embarked units from the unit update because they were not in the Set Owner Unit Set (SO.UNIT.SET). By definition, units are not in the SO UNIT SET when they are embarked on a ship or on an aircraft mobility mission. The code was corrected by replacing that exclusion criteria with a check for any mission that may be lifting the unit. Therefore, lifted units are still excluded, but embarked units are not. As a result the unit, unit's targets, and ship are now included in the unit update for the Unit Report.

There was also a misuse of the unit's embarked asset set (UT.EMBARKED.ON.SET) to determine the embarking ship. The first embarked asset in the set was assumed to be the embarking ship

when in fact it is the first embarked asset. The logic tried to file the embarked asset into the Unit Working Set which crashed the model because it is the wrong entity type (i.e. not a unit). The code was corrected to obtain the first embarked asset and then use that to obtain the embarking ship.

### 3.38 JTLS-2018-13660 DDSC Time Zone Preference Change

**When the user changed Time Zone preferences from the Preference Tool's Basic UOM setting in the DDS, the displays in DDS tables' time fields were not updated accordingly.**

The problem was introduced during a previous problem correction, in which a call to prepare the Time Zone handler was not moved to account for the previous change. The call has been moved and the problem corrected.

### 3.39 JTLS-2018-13661 WHIP Air Mission Map Filter Missiles

**When the Player turned off the air mission map filter, missiles were also no longer displayed.**

The filter made the assumption that only air missions would have a non-zero mission type. This turned out to be incorrect. An explicit check for air mission class was added before applying the mission type filter.

### 3.40 JTLS-2018-13662 WHIP Slide Manager Incorrect Action

**For all actions in the WHIP Slide Manager (except Delete), the action could be taken on the wrong slide when table was sorted.**

Code was added to convert the sorted row number back into the TableModel row number.

### 3.41 JTLS-2018-13664 MDP Not Sending BDA Reports

**The Message Delivery Program (MDP) was set up to send BDA Reports to a specific e-mail address, but they were not being sent. Other profiles, such as for sending Mission Reports and IPIRS, were working.**

BDA Reports can be either directed or broadcast messages. A profile file contains exclusions for messages that are not to be delivered based on the message type, directed or broadcast status, and message ID. However, a single bitmask was used to track whether a message was deliverable or not, regardless whether it was broadcast or directed. Thus, when the profile was read and it had an exclusion for directed BDA Reports, it turned off the bitmask for the delivery of all BDA Reports, whether directed or broadcast.

The issue was solved by creating two bitmasks for each profile, one to track directed message settings and one to track broadcast message settings.



### 3.42 JTLS-2018-13665 Change WHIP Memory Limits Documentation

**The ICP option to change the Java JVM memory limit was missing from the JTLS-GO Technical Coordinator Guide.**

Documentation and an updated screen shot were added to the Technical Coordinator Guide.

### 3.43 JTLS-2018-13666 Manual Pair Order Non-Existent Mission Crash

**A user submitted a manual pair order for a mission to intercept a second mission. The crash occurred because the second mission did not exist in the model.**

When the model processed the manual pair order, there was a check at the top of the routine to ensure that the intercepting mission was a valid mission. Since this mission did not exist, the routine proceeded to exit. However, at the bottom of the routine, the model attempted to update all of the tasks held by the intercepting mission. Since the mission did not exist, the update routine failed and the model crashed.

A check was added to verify that the mission was valid before performing an update to the object tasks.

### 3.44 JTLS-2018-13667 Non-Running Replay JXSRs Connection

**When the WSM attempts to connect to a non-running server, the connection is refused, which may appear in the system logs.**

This is normal behavior. A note was added to the Technical Coordinator Guide.

### 3.45 JTLS-2018-13668 Resolving ELS Errors For Inconsistent Crew

**When a unit arrived in the game, the ELS would sometimes report errors due to an insufficient number of crew for some combat systems. The errors persisted even if the scenario database was modified to add more crew systems to the units.**

During the initialization of units in the ELS, the number of required crew was compared to the actual number. This error resulted when there were not enough crew systems to man the unit's equipment. If additional crew were added to the unit, then the ELS would only use them if they also had the required number of positions in the template.

Every prototype in the game has an associated template in which the combat systems are laid out on the ground. This error occurred because there were not enough template locations to place all of the newly added crew systems. Code changes were made to ensure that there are always enough template locations for every required crew position in a prototype (TUP, SUP, HUP) template. Even if the TOE for crew is less than the required number of crew positions, then the ELS builds positions for every possible crew position. This way, if additional crew are given to the units, then the ELS can utilize them to man all of the combat systems that require crew.

### 3.46 JTLS-2018-13683 Non-Jammable Active Sonar Power Legal

The SVP was reporting that an active sonar had a power and was not jammable. This is legal and should not be reported as a warning.

The code was changed to stop active sonars from being reported as part of Warning 1206.

### 3.47 JTLS-2018-13685 Aircraft Load Issues Not Tallied

Errors or Warnings in Aircraft Loads are not reported in the final count summary of the SVP run.

The code to check aircraft loads was moved up from its old location to above the location at which the model parameter counts are presented to the user. This has been corrected.

### 3.48 JTLS-2018-13686 Warning 1445 Off, Warning 1462 Not Reported

The code incorrectly turned Warnings 1462 and 1445 off when the user indicated that only 1445 should be turned off.

The code was rearranged to properly separate these two warnings.

### 3.49 JTLS-2018-13687 Submarine Fuel Usage Not Correct

Submerged electric submarines were using fuel as they moved in a submerged state. They should not use fuel while submerged because they are on battery power.

Submerged submarines now do not use movement fuel when submerged.

### 3.50 JTLS-2018-13689 Cannot Access GIS Menus From Command Line

The JTLS project maintains two Technical Control interfaces to access the majority of JTLS functionality. The first one is the Javamenu Graphical User Interface (GUI). The second is a series of Korn Shell (ksh) scripts that provide the same functionality when there is a GUI issue. Two of the ksh scripts that permitted access to the GIS Tools did not have execute permission set and therefore could not be run.

Execute permission was added to the two files.

### 3.51 JTLS-2018-13690 Mine-Laying Mission Flies With Wrong Mines

A mine-laying air mission order was submitted using the model-selected weapon load defined for that mission type. The weapon load consisted of water mines, but the order specified a delivery location in land terrain. The mission launched, flew a great distance to the release point, and then returned to base without delivering the mines.

The model did not check the terrain eligibility of the mines in the weapon load before launch. New logic was added to ensure mines are suitable for the terrain at the delivery location specified in the order. If not, the mission checks alternative loads (if any), and then enters a Weapon Delay status instead of launching as per usual processing logic.

This check applies to both model-defined and user specified weapons loads. Also, the existing terrain check at the delivery location is still performed when the mission arrives at the release point because the mission's task location may have been changed by a Player or the terrain modified by a Controller.

### 3.52 JTLS-2018-13692 AARC Required Long Integers For Objects IDs

With JTLS 5.0 the AAR Client objects switched from using a unique ID to using a JEDI, which is used extensively throughout the JDS Protocol to identify an object. The primary difference is that the old identifier could be expressed as a 4 byte integer, whereas the new identifier requires an 8 byte long integer. Not all of the places throughout the source code were updated to handle the long integer. The AARC still worked, but a lot of errors were thrown for negative IDs and for failure to find objects in the hash table.

The hash tables were updated to handle the long int, and code that is automatically generated from the JDS Protocol was modified to hand the long int values.

### 3.53 JTLS-2018-13694 Save SVP Options Without Running SVP

When running from the Javamenu, the user could not save the SVP options without running.

The ability to save without running the SVP was added.

### 3.54 JTLS-2018-13696 Quick Order Tooltips Ignored

If a tooltip was specified for a quick order, the tooltip was set to the default anyway.

The logic when building the tooltip buttons was corrected, so that if there is a tooltip, it is used instead of the default.

### 3.55 JTLS-2018-13697 IMT Spreadsheet Orders Fail Verification

A demonstration using IMT spreadsheets was performed using the Unit Information IMT screen. A list of units was selected and the order for a Logistics Rollup Report was selected from the right-click cursor menu. The spreadsheet appeared, but when the operator attempted to send the orders, all the orders were rejected by the OMA.

The issue was that the spreadsheet definition within the order file specified that a flag field, which should normally have a value of 2, be sent with the order. However, this field was not defined in the IMT data file as part of the order. Therefore, the WHIP defaulted the field value to 0, and it failed verification.

If the field had been specified in the IMT data file with either a bad default value or no default value, the checkimt script, which is run by development personnel, would have flagged an issue. Given that the checkimt script exists to guarantee consistency between an IMT data file and other XML files, it was decided that the underlying problem was the checkimt script was not ensuring all fields required for the spreadsheet were defined in the IMT data file.

A check was added to the script to ensure this consistency and all IMT data files that had new errors were corrected.

### 3.56 JTLS-2018-13698 Detach Canceled Message Not Received

**A Detach-by-TUP order was sent from a WHIP that had shared authority over the parent unit. The order specified a TUP that was identical to the parent's TUP, which is an error. The model acknowledged receipt of the Detach order as expected. When the Detach task began to execute, the task was immediately canceled because the parent and detachment TUPs were identical. However, no cancellation message was sent to the WHIP to inform the player. Instead, the cancellation message was sent to the WHIP which had primary authority.**

The problem was in the logic that chooses the WHIP(s) to send any task cancellation message. The logic selected the terminal ID that was assigned as the ground function for the parent unit. Because the player had shared authority, the ground function had remained with the primary WHIP by design. New logic was added to also send the cancellation message to the terminal ID associated with the task itself, if the terminal IDs are not identical.

### 3.57 JTLS-2018-13699 ATOT Adds Two Tasking Unit Links For Same Unit

**The ATO Translator has several linking pages in the WHIP GUI that allow the user to form associations between the ATO data and the JTLS scenario data. One link page provides a mapping (linking) of Tasking Units to JTLS squadrons in the scenario. The linking can be manually assigned by the user or automatically by the Translator, if the names in the ATO match the names in the scenario. The problem is the automatic linking by the Translator. Sometimes it is adding two units to the linking page with the same name. Both represent the same JTLS unit. One of them has the proper link to a JTLS squadron unit but the other has an empty link.**

The ATO Translator attempts to automatically form the Tasking Unit Links in the WHIP GUI for ATO units that match squadron units in the JTLS scenario. When a match is found the link is made. The Translator was finding the squadron match, particularly because aircraft asset links were formed on another linking page. Then the link was getting established on the tasking unit assignment page but using the JTLS aircraft name instead of the USMTF aircraft name from the ATO. The cause the Translator to add a second unit link to the link page because the first was believed to be a different aircraft class.

### 3.58 JTLS-2018-13700 Spreadsheet ATO Inconsistent Command Line

The command line arguments to start the spreadsheet ATO parser program are inconsistent. Each of the following ways of starting the atop\_spr.exe program are using a different format for the sides argument: JTLSMENU, JAVAMENU and from the command line.

The format -sides 5,6 is the correct way for all options. The atop\_spr.exe program was modified to expect and process only this format.

### 3.59 JTLS-2018-13701 JTLS-GO Documentation Updated

The JTLS-GO documentation suite needed to be updated, to account for the changes that have been made to the system since the previous maintenance release (JTLS-GO 5.0.10.0).

The JTLS-GO documentation suite has been updated.

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

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ICPLgin	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 5.0.11.0 STANDARD DATABASE CHANGES**

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





## **APPENDIX C. Version 5.0.11.0 DATABASE CHANGES**

No changes were made to the JTLS-GO 5.0.11.0 database for this maintenance release.