

JTLS-GO

Version Description Document

April 2019



DEPARTMENT OF DEFENSE
JOINT STAFF J7
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JOINT THEATER LEVEL SIMULATION - GLOBAL OPERATIONS
(JTLS-GO 5.1.1.0)

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ABSTRACT

The Joint Theater Level Simulation - Global Operations (JTLS-GO[®]) is an interactive, computer-based, multi-sided wargaming system that models 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 5.1.1.0 delivery of the configuration-managed JTLS-GO software suite.

JTLS-GO 5.1.1.0 is a Major release of the JTLS-GO 5.1 series that includes an updated SBDKOR50 Standard Database, as well as major 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 5.1.1.0 of the configuration managed Joint Theater Level Simulation - Global Operations (JTLS-GO[®]) software suite. JTLS-GO 5.1.1.0 is a bug-release delivery for the JTLS-GO 5.1 series of releases.

JTLS-GO 5.1.1.0 includes the entire JTLS-GO suite of software, a repository of engineering level data, and a realistic demonstration scenario based on the Western Pacific theater of operations called “wespac51”. No database format modification have been made for this bug-release, but a static data error for allowable OTHGold Ship Types has been corrected. This does require a user to execute a correction procedure for all of their scenarios loaded in Oracle. Information on this procedure can be found on [Page 1-10](#).

Descriptions of minor Engineering Change Proposals (ECPs) implemented for this release are provided in [Chapter 2.0](#). An explanation of all Software Trouble Reports (STRs) corrected in this release are contain in [Chapter 3.0](#). Details made to the JTLS-GO 5.1 engineering data repository are included in [APPENDIX C.](#)

JTLS-GO 5.1.1.0 executes on the Red Hat Enterprise Linux Version 7.6 64-bit operating systems. The Web-Hosted Interface Program (WHIP[®]) user workstation interface can be executed on any operating system from any Java-compatible Web browser.

1.2 INVENTORY OF MATERIALS

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

1.2.1 Obsolete/Outdated Documents

No documents have been deleted or become outdated as a result of this release.

1.2.2 Unchanged Documents

All documents have been updated as a result of this release.

1.2.3 Updated Documents

- *JTLS-GO Analyst Guide* (JTLS-GO Document 01, Version 5.1.1.0)
- *JTLS-GO Configuration Management Plan* (JTLS-GO Document 03, Version 5.1.1.0)
- *JTLS-GO Controller Guide* (JTLS-GO Document 04, Version 5.1.1.0)

- *JTLS-GO Data Requirements Manual* (JTLS-GO Document 05, Version 5.1.1.0)
- *JTLS-GO DDS User Guide* (JTLS-GO Document 06, Version 5.1.1.0)
- *JTLS-GO Director Guide* (JTLS-GO Document 07, Version 5.1.1.0)
- *JTLS-GO Executive Overview* (JTLS-GO Document 08, Version 5.1.1.0)
- *JTLS-GO Installation Manual* (JTLS-GO Document 09, Version 5.1.1.0)
- *JTLS-GO WHIP Training Manual* (JTLS-GO Document 10, Version 5.1.1.0)
- *JTLS-GO Player Guide* (JTLS-GO Document 12, Version 5.1.1.0)
- *JTLS-GO Repository Description* (JTLS-GO Document 14, Version 5.1.1.0)
- *JTLS-GO Software Maintenance Manual* (JTLS-GO Document 15, Version 5.1.1.0)
- *JTLS-GO Technical Coordinator Guide* (JTLS-GO Document 16, Version 5.1.1.0)
- *JTLS-GO Version Description Document* (JTLS-GO Document 17, Version 5.1.1.0)
- *JTLS-GO Entity Level Server User Guide* (JTLS-GO Document 19, Version 5.1.1.0)
- *JTLS-GO Federation User Guide* (JTLS-GO Document 20, Version 5.1.1.0)
- *JTLS-GO C4I Interface Manual* (JTLS-GO Document 21, Version 5.1.1.0)
- *JTLS-GO Air Services User Guide* (JTLS-GO Document 24, Version 5.1.1.0)

1.2.4 New Documents

No new documents are delivered with JTLS-GO 5.1.1.0.

1.2.5 Delivered Software Components

JTLS-GO 5.1.1.0 may be delivered either on a CD or as a set of compressed TAR files to be downloaded. Either method includes the complete suite of software executable code and command procedures. The following software components are included with this release:

- Combat Events Program (CEP)
- Scenario Initialization Program (SIP)
- Interface Configuration Program (ICP)
- Reformat Spreadsheet Program (RSP)

- JTLS Symbols Application (JSYMS)
- Database Development System (DDS)
 - Database Configuration Program (DCP)
 - DDS Client User Interface (DDSC)
- ATO Translator Service (ATOT)
- ATO Generator Service (ATOG)
- ATO Retrieval Program (ATORET)
- JTLS Convert Location Program (JCONVERT)
- Count Critical Order Program (CCO)
- JTLS HLA Interface Program (JHIP)
- After Action Review Client (AARC)
- Scenario Data Client (SDC)
- Order Entry Client (OEC)
- Order Verification Tool (OVT)
- JTLS Object Distribution Authority (JODA)
- Web Services Manager (WSM)
- Web-Hosted Interface Program (WHIP) and its component programs:
 - Apache Server (APACHE)
 - JTLS XML Serial Repository (JXSR)
 - Order Management Authority (OMA)
 - Synchronized Authentication and Preferences Service (SYNAPSE)
 - XML Message Service (XMS)
 - Total Recall Interactive Playback Program (TRIPP)
- Entity Level Server (ELS)
- JTLS Operational Interface (JOI) for both OTH-Gold and Link-16 generation

- Tactical Electronic Intelligence (TACELINT) Message Service
- KML Operational Interface (KOI)
- JTLS Transaction Interface Program (JTOI)
- JTLS Interface Network Navigator (JINN)
- JTLS Order of Battle Editor (JOBEB)
- JTLS Geographic Information System (GIS) Terrain Building Program

Instructions for installing JTLS-GO 5.1.1.0 are provided in the *JTLS-GO Installation Manual*. Installing a previous version of JTLS prior to installing JTLS-GO 5.1.1.0 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.

1.2.6 Released Databases

This release includes the following sample unclassified databases:

- The scenario that serves as a repository of engineering level data called "repository51". Although not useful as a scenario, it does follow all of the database requirements for a scenario, and should be loaded into your Oracle scenario table-space. With JTLS-GO 5.1.1.0, it is possible to access and copy records from the repository51 database into your own developed scenarios.
- The scenario "wespac51", which is suitable for training and demonstrations.

1.3 INTERFACE COMPATIBILITY

1.3.1 Support Software

JTLS-GO 5.1.1.0 requires the following versions of support software, including operating systems, compilers, scripting utilities, database tools, transfer protocols, and display managers.

- Operating system for the model: Red Hat Linux Enterprise Edition Version 7.6 (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.

- JTLS-GO 5.1 has been tested with the following versions of Linux 7:

RedHat Linux 7.6 - this operating system license must be purchased, but it has been approved by the Defense Information Systems Agency (DISA) for use by U.S. Government Agencies.

Oracle Linux 7.6 - this operating system is free to download, use and distribute and is provided in a variety of installation and deployment method. It has been approved for use by US Government organizations by DISA.

CentOS Linux 7.6 - a free version of Linux 7 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 5.1.1.0 has been tested on the following operating systems:

Red Hat Linux Enterprise Edition Version 7.6.

CentOS Linux Version 7.6.

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

- JTLS-GO 5.1.1.0 no longer uses Oracle Java and has moved to the latest version of OpenJDK 8. We no longer deliver the Java Runtime Environment (JRE) within the JTLS-GO delivered software tar files. Each user organization must obtain the latest version of the OpenJDK RedHat Package Manager (RPM) and install the RPM on the servers used by JTLS-GO.
- 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> OHLA Compliance

- **KML Operational Interface (KOI)**

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

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

- JTLS-GO 5.1 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 Information Assurance Compliance

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. In previous versions of JTLS, Java 8, as delivered by Oracle, fulfilled this mandate by implementing an expiration date for its software. After a certain date, all Java related programs stopped working, whether connected to an open network or not. All JTLS releases were closely linked to the Java expiration date.

Given the currently available information, OpenJDK will not implement an expiration date. In order to fulfill the DoD IA requirement, bug releases of JTLS-GO will be released as new versions of OpenJDK are released. In a future version of JTLS-GO, all Java programs delivered will check that the latest version of Java is being used. Each local installation will be able to override the warning generated when the program detects that the latest version is not properly installed.

JTLS-GO has completed the IA program mandates and the JTLS-GO 5.1 series of releases has been granted an Authority To Operate (ATO) on DoD systems. Contact the U.S. Government Program Manager, Mr. Don Weter (donald.e.weter.civ@mail.mil).

1.3.3 JTLS-GO High Level Architecture Compliance

The JTLS-GO 5.1.1.0 release is fully High Level Architecture (HLA) compliant, and includes all the programs required to run JTLS-GO in an HLA mode. JTLS-GO uses the 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.

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 Pitch pRTI Evolved 4.4.2.0. However, this program is not included in the JTLS-GO 5.1.1.0 delivery. Users may obtain a full installation package of the RTI software from Pitch Corporation (www.pitch.se). For information about executing the HLA RTI Executive and other HLA-related software, refer to the appropriate HLA documentation and user guides.

1.4 DATABASE MODIFICATIONS

Significant database structure differences exist between the JTLS-GO 5.1 series and the previous JTLS-GO 5.0 series database structure.

To upgrade your JTLS-GO 5.0 scenario to JTLS-GO 5.1 compatibility, see instructions listed in the *JTLS-GO DDS User Guide*, Chapter 3.1.

1.4.1 JTLS-GO Using Legacy Default Symbol Set

If a user organization is still using the pre-JTLS-GO 5.0.0.0 legacy default symbol set, prior to unloading your JTLS-GO 5.1.0.0 formatted data from your Oracle database server into the JTLS-GO 5.1.0.0 scenario American Standard Code for Information Interchange (ASCII) text files, you must execute the JSYMS program using the procedure outlined in the *JTLS-GO DDS User Guide*, Appendix B.11. This procedure will reorganize the structure of the .gs and .scf symbols-related files.

1.4.2 JTLS-GO Using New Default Symbol Set

You should not make any modifications to the Default Symbol Set delivered with JTLS-GO 5.1.1.0, but end-user organizations are free to use the Default Symbol Set in their scenarios and alter the scenario symbol set to meet specific organizational needs.

1.4.3 Standard Repository Changes

This version of JTLS-GO is the first version in which R&A is delivering an unclassified data repository called “repository51”. In future released versions of JTLS-GO 5.1.1.0, [APPENDIX B](#). will provide a summary of the data changes made to the data repository, In the next major release of JTLS, tentatively labeled as JTLS-GO 6.0.0.0, the user will be able to automatically view changes by comparing the two different versions of the “repository51”.

1.5 INSTALLATION

1.5.1 Installation Instructions

The *JTLS-GO Installation Manual*, a Portable Document Format (pdf) file available for direct download, is part of this JTLS-GO delivery, It provides detailed instructions for installing a new version of JTLS-GO.

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.

Between the free Express Editions (XE) of Oracle, the 18c XE has a large footprint and a much more complex database architecture compared to the 11gR2 XE version. For test environments and scenario building purposes, or for collecting AAR data for a short period of time, installation and setup of the 11gR2 XE version would be much simpler.

The 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.

As mentioned above, JTLS-GO 5.1.0.0 was delivered with an old list of OTH-Gold ship types. This problem was reported by the user and assigned an STR number of JTLS-2019-14238. The issue was fixed, but to properly implement this solution, all users must perform the procedure outlined below for each of their scenarios loaded in Oracle.

New OTH-Gold ship types were added to JTLS-GO, due to STR JTLS-2019-14238.

1. Execute the following command:

```
cd $JTLSHOME/script/dds/version5.1/scripts/
```

2. Execute the following command:

```
sqlplus yourScenario/OraclePassword @update_oth_gold_types.sql
```

3. Verify the related execution listing file under the \$JDATA/scenario/ directory for errors.
4. Unload your scenario using the JTLS-GO Menu, Options 1 -> 1 -> 4
5. Verify the .srw ascii file for your scenario.

2.0 ENGINEERING CHANGE PROPOSALS

This chapter summarizes model capabilities added to JTLS-GO 5.1.1.0 as a result of implementing authorized Engineering Change Proposals (ECPs).

2.1 JTLS-2019-14026 Landing Task Rejection Message Information

Summary of Model Change Request

If a user tried to add a task to an air mission that requires the mission to land somewhere it is not capable of landing, a rejection message was generated. This message reported that the available runway was too short for landing and/or takeoff. The message should also contain information on the current length of the available runway and the required minimum length for landing and/or takeoff.

Design Summary

The model was changed to include the extra information in the message. When a task change was submitted and failed, the involved runway lengths were now included in the rejection message.

2.2 JTLS-2019-14038 Air-Air and Surface-Air AAR Messages

Summary of Model Change Request

The After Action Reports (AAR) must quickly collect statistics from the Controller Air Combat Reports on Air-Air and Surface-Air engagements to help summarize aircraft kills.

Design Summary

Two new stylesheets were written to search the Controller Air Combat Reports and generate information on each engagement. Since the Controller Air Combat Report is a cumulative history, showing previously reported engagements and new engagements, it was necessary to modify the CEP to mark an engagement record as having been reported after it is included in a message. The stylesheets could then skip over previously-reported engagements in a message and only add records for new engagements.

2.3 JTLS-2019-14100 Managing DDS Histories

Summary of Model Change Request

The DDS logs transactions in the DDS histories tables. For some DDS operations, such as data migration, there might be a large number of transactions being logged. When these histories accumulate, the users might find the massive histories taking too long to load in the DDS client's history table, and it would be difficult to locate the histories of a certain time period.

Design Summary

Users now have the ability to delete the old histories prior to a user-specified time stamp. This "Delete DDS Histories..." option is under the DCP's Options menu, and it is only enabled when Glassfish is running.

A dynamic time filter for the History Summary table from DDS Client was also enabled. When a user opens the History Summary table, instead of loading the data immediately, the time filter panel is presented to the user first. The panel contains three options to filter the history data: No filter, Today only, and Range, which contains "From" time and "To" time fields. The user can view the logged DDS histories of a certain time period, making it easier to find the histories of interest.

2.4 JTLS-2019-14118 Provide Target Data On Log Rollup Report

Summary of Model Change Request

A summary of targets should be included in the Logistics Rollup Report.

Design Summary

The following data has been added to the English version of the Logistics Rollup Report.

1. Type of Target, such as Sensor Site.
2. The Sub-Category Name, such as FLAT.FACE_LAA.
3. The number of original elements of the type in the rollup.
4. The current number of elements of the type in the rollup.
5. If the Type of Target is Air Defense, then the report also lists the current number of operational launchers.

2.5 JTLS-2019-14119 Make Login Build Spreadsheet Capable Order

Summary of Model Change Request

The LOGIN Build order and the Show LOGIN order should be spreadsheet capable orders.

Design Summary

A LOGIN Build spreadsheet was created and a Show LOGIN spreadsheet was create. Each spreadsheet was made accessible from the Unit Logistics IMT screen.

2.6 JTLS-2019-14153 Barriers Missing from Terrain Report

Summary of Model Change Request

The Terrain Report order, available to both the Controller and Player, did not include any information about the Barriers that existed in the selected grid.

Both the Player and Controller versions of the Terrain Report already list network arcs & nodes present (i.e. roads, rails, rivers, and pipelines), as well as stationary Targets. In the Controller report, all HRUs, all units, and all supply runs present in the grid are listed. In the Player report, only own side HRUs, own side units, and own side supply runs are listed, plus detected foreign units.

Given the comprehensive nature of the Terrain Report and the fact that non-perceivable objects are included in both versions, the report is incomplete by not listing Barriers present in the grid.

Design Summary

Barrier information was added to the Controller and Player Terrain Reports to include the barrier name, type (e.g. TANK_DITCH, WADI, LG_RIVER, etc), location coordinates, maximum width and depth, whether the barrier is a shoreline, and the crossing time delays based on combat system Agility Type and faction Mobility Counter-Mobility Prototype (MCP).

2.7 JTLS-2019-14201 WHIP Filter By Target Strength

Summary of Model Change Request

The WHIP map filters did not filter Targets by strength.

Design Summary

The strength filter was modified to also apply to Targets.

2.8 JTLS-2019-14234 ASC Do Not Decrease Stock Levels Option

Summary of Model Change Request

If the Automatic Supply Calculation (ASC) capability of the DDS was used on a database that had manual increases to stock levels, it could result in setting the stock levels to a lower value.

Design Summary

The ASC was modified to add an option to only increase stock levels. If the calculation for any stock level is less than the current value, it is ignored if the option is selected.

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; however, because of the model enhancements included with JTLS-GO 5.1.1.0, no previously-identified STRs are considered valid. Errors identified for JTLS-GO 5.1.1.0 and corrected for future Maintenance releases in the JTLS-GO 5.1 series will be documented in this chapter.

3.1 JTLS-2018-13981 Crash Reloading Unowned SAM Target

The model crashed attempting to reload a SAM target when the SAM target was not owned.

The reload logic did not properly consider unowned targets that were associated with a unit. This code error was introduced when considering the possibility that the SAM target may have pending fire missions to fire like an SSM at a surface object.

The issue was easily fixed. If the SAM target is unowned, then it cannot have any pending fire events and the crash is avoided.

3.2 JTLS-2018-13982 Modify Package Missing Messages

A Manage Attack Package order, with the Modify Attack Package option selected, was submitted to change the Package Timing Option from Airborne on Call to Time on Task. The Primary Attack (OAS) Mission did not have an assigned target. The order was accepted by the CEP with no apparent results.

The logic determined that the order was illegal because the attack mission did not have an assigned target. The order was rejected by the model, but no message was generated to inform the Player. The routine that checks the legality of the order was missing code to generate the rejection message. Two other such Player messages that should have been generated for different reasons were also missing. All three missing rejection messages were added.

3.3 JTLS-2018-13984 Target Associated Unit Not Updated

The owning and associated units for a stationary SAM target were the same ground Unit. The Unit was destroyed, leaving behind the SAM target undamaged. The Target IMT correctly showed no owner, but still showed the same (destroyed) associated Unit for the target. The target should have been assigned a new associated unit. This situation didn't apply to owned targets that were destroyed with the Unit.

The routine that determines the new associated (support) unit when the owning/associated Unit is destroyed incorrectly bypassed the logic that assigned a new associated Unit. The coding error was corrected so that the SAM target is assigned a new associated Unit.

3.4 JTLS-2018-13986 Internal Program Documentation Corrections

There were errors in the Scenario Initialization Program (SIP) comments for some routines.

While validating DDS errors and warnings with the SIP, several mistakes were found and corrected in the source code. These corrections were only cosmetic to the comments and did not change any underlying logic.

3.5 JTLS-2018-13987 MISREP Always States "No Damage Observed"

The final mission report generated after an OAS mission completes includes a section of pilot observations. The section always ended with the statement "No Damage Observed" when, in fact, damage was listed in the report.

A code error was corrected to display the statement "No Damage Observed" only if there was no damage reported in the MISREP.

3.6 JTLS-2019-13990 Assign Command Authority To Newly Created Units

Whenever a new unit is created, it is necessary for the side's primary WHIP to additionally send a Share Command Authority order for the unit, or the unit cannot be tasked by Players. The desire is for command authority to be set automatically to avoid this additional step. This would make the behavior consistent with other CEP functionality which creates new units, such as ordered detachments, civilian air traffic squadrons, and air and amphib lifted detachments.

The logic for the Manage TPFDD order was modified so that if the Higher HQ of a unit that has not yet arrived is being changed, the code will destroy any existing shared authority for the unit and provide it the same shared authority as the new higher HQ. This is consistent with other unit creation code that duplicates the command authority of the higher HQ when creating a unit. The one exception is squadrons created by the Civilian Air Traffic order which were, and still are, given the authority of the homebase versus the squadron they are being split off from.

3.7 JTLS-2019-13991 Synapse Allows Embedded Unix Commands

A URL query sent to the Synapse service via web browser can have Unix commands mixed into the parameter fields of the query. These Unix commands will then be executed by the Synapse.

The Synapse uses a test to determine if a directory path exists prior to executing the PUT command to place a specified file into the specified directory. The test is composed of a system call to determine if creating a directory can be performed successfully using the specified directory path. No checking is done on the specified path however, and it is possible to embed additional Unix commands into the URL query. But, the embedded Unix commands require special characters within the URL query in order to pass the embedded commands to the Synapse from the Synapse module.

This has been fixed. The Synapse was modified to check for the special characters and reject the URL query when the special characters exist in the query.

3.8 JTLS-2019-13992 Adding Political Country To WHIP

When a Political Country was added to the WHIP, an error occurred.

The error occurred because a Map layer was generated before the name of the country was set. The country name is now set prior to generating the layer.

3.9 JTLS-2019-13993 Read Order File Not Using New Format of Order

In previous versions of JTLS every order started with two integers: one to indicate the CEP was the recipient and the other to indicate the size of the order. These two integers have been redundant for years and were removed in JTLS 5.1.0.0. In addition, to support the multi-sided Super WHIP, we added the Force Side name to every order.

The CEP Read Order File code was never updated for these changes and was still saving read in orders in the old format to the Critical Input file. Though this does not affect the execution of orders during normal game play, it does prevent the Technical Controller from being able to back up and push orders.

The CEP was modified to extract the submitting Force Side from the order if present, or use the Force Side of the Read Order File order itself if a submitting Force Side is not on the order. The obsolete integers were removed from the order string, and the new format for the order string was saved in the Critical Input file.

3.10 JTLS-2019-13996 Views/Locations/Filters Selection Dialog Freezes

When opening the selection dialog for views, location, or filters in a WHIP for the second time in a session, the dialog would freeze.

The selection dialogs are reused. When closing the dialog, the SavedDataMediator was being nulled leading to an exception. This was introduced while fixing the memory leak when closing maps.

3.11 JTLS-2019-13997 No Combat Systems After Scenario Conversion

If a non-standard naming convention was used for the slp_sc_name data in a JTLS-GO 5.0 scenario, the scenario conversion code would fail to properly map the old generic supply category names to the new supply category names, causing the 5.0 to 5.1 scenario conversion process to complete with no combat system records.

The related name mapping code blocks were added to the JTLS-GO 5.0 to 5.1 scenario conversion script to ensure that it will not issue any errors when the new combat system records are populated during the scenario conversion process.

3.12 JTLS-2019-13999 Duplicate SVP Error Number

Error number 128 is used twice in the SVP program.

Error 128, referring to the default squawk code, was no longer necessary. The check for the error is now done in the DDS. This was also true for Error 129, which performs a different test on the default squawk code. Both Errors has been removed from the code along with the call to the check routine.

3.13 JTLS-2019-14000 SDC Missing Controller Side Records

The Scenario Data Client (SDC) was not inserting Controller view records into the database tables.

An error was found in the SDC code, which expected the maximum number of sides to be 10 (the maximum number of sides is now 20). This prevented the Controller view records from being inserted. The code has been corrected and the records are now properly identified and inserted.

3.14 JTLS-2019-14002 ICP Table Jumps When Selecting New Row

If an Interface Control Program (ICP) table was wider than the panel and the first column was not visible and the user selected a new row, the table would scroll to the first column.

The code was corrected to avoid this behavior.

3.15 JTLS-2019-14003 Glassfish Password Change

Glassfish was being delivered with the default admin password.

The password delivered with Glassfish was changed.

This password is not normally needed. To obtain the new default password, contact the JTLS-GO Help Desk.

3.16 JTLS-2019-14004 Mission Reports Message Problems

For some air missions, the Mission Reports were generated incorrectly. Some of the remarks were incomplete. This caused the message data to be terminated prematurely. The associated message was not available on Message Browser in the WHIP.

This problem was caused by an error in the method where mission messages were generated. The data for the messages was temporarily stored in a buffer, and that buffer was inadvertently over-written by a different part of the code. This caused some of the remarks to have improper content which subsequently resulted in conversion errors when generating the message for the browser. A small code change was made to correctly format the message data. This problem only affected Mission Reports for missions which had more than one intercepting air mission.

3.17 JTLS-2019-14006 Switch Schema Definition Names

The XML Schema Definition (XSD) files used to enforce a standard on JTLS-GO XML files included the 5.0 version number in their name. While this has had no effect on their usage, it is misleading and caused confusion.

The version number was stripped from the names of the files, and the programs that used the files were modified to use the new names.

3.18 JTLS-2019-14007 Cannot Skip Warning 1463

Choosing to skip Warning 1463 does not skip the warning. It continues to be printed.

The check that is normally wrapped around warnings to skip them was missing. The check has been added and tested.

3.19 JTLS-2019-14008 GIS Tool Dialog Labels And Fields Misalignment

When the Edit Rail Node Dialog was invoked, the labels and fields of the dialog were out of alignment. For example, the labels appeared in the center of the dialog when they should have been on the left side, and the adjoining fields were so compressed lengthwise that the held values could not be displayed and edited. A similar problem occurred with the New Network Dialog.

This problem could not be replicated on the workstation used to debug the problem - the labels and fields were properly aligned and of the proper size when the dialogs were invoked on that workstation. The solution was to stop setting the preferred size of those dialogs and let their default behavior determine how their components are arranged.

3.20 JTLS-2019-14009 Inconsistent Valid Scenario Determination

The jtlsmenu and JavaMenu used different methods of determining which scenarios are fully initialized. jtlsmenu used the .sid file, while JavaMenu used the .glo file, which can exist even if scenario initialization failed.

The JavaMenu was modified to use .sid for items that require a fully initialized scenario.

3.21 JTLS-2019-14010 Incorrect SVP Error 404

Error 404 was incorrectly generated for a Supply Category that is labeled as Self Propelled.

The SVP logic did not properly check for this circumstances. Self Propelled supplies can no longer result in Error 404.

3.22 JTLS-2019-14013 Weapons On Ships Wrongly Firing While In Port

When a ship was in port, it was incorrectly firing weapons at incoming missiles. The weapons were fired from on-board air defense (ADA) targets. However, the ADA target class was not allowed to fire while the ship was in port.

The CEP code was not checking to see if the ship was in port before it fired its weapons. A code change was made to correct this oversight.

3.23 JTLS-2019-14015 WHIP Name Truncated In Reports

The WHIP name was truncated in the "Query Reporting Players" and the "Players in Game" reports when the name was more than 15 characters in length.

The message templates for both reports were formatted to accommodate only 15 character WHIP names. To correct the problem, the format size was expanded to 25 characters (the maximum allowed WHIP name length) in both message templates. A search of all messages that write a WHIP name found no other truncation errors.

3.24 JTLS-2019-14016 Error Allocating Small Boat Resources In HRU

An error occurred when the model was allocating resources for a High Resolution Unit (HRU) which needed a Small Boat. A logic error was generated because the parent unit for the HRU did not have enough small boats to create all of the associated HRU.

This problem was due to errors in both the CEP and in the SVP. In the SVP, there was a check to ensure that the parent unit had enough small boats to satisfy the HRU requirements (Error 503), and it was only applied to Naval Units. For all other unit types, the SVP was not checking to see if the parent unit had the required number of combat systems with the special capability for amphibious operations. The SVP code was modified to perform this check on the other unit types.

In the CEP, the code was correctly allocating small boats to the HRUs when all of the combat systems were taken from the non-naval parent units. Later in the HRU creation process, the model attempted to allocate more small boats, even though no additional boats were required. This extra allocation of small boats only happened for HRUs whose parent units were not Naval units. Code changes were made to prevent this in the future.

3.25 JTLS-2019-14017 TUP OPM Page Formatting Error

In the Online Player Manual (OPM), the page containing data for individual TUPs had a formatting error. At the bottom of the page, there is a table which lists the required combat systems for any hierarchical substructure. Such substructure was in the form of subordinate TUPs or HUPs. The data in this table was mis-aligned with the column headers.

This formatting problem was only visible for TUPs which had some TUP or HUP sub-structure. The code to generate this table was not properly handling those data. A change was made to fix this issue and the TUP page now looked correct.

3.26 JTLS-2019-14018 No Link 16 Structure Data Scenario Conversion

Scenario conversion from an earlier JTLS-GO version to JTLS-GO 5.1 fails to populate the new Link 16 structure data. This causes errors when executing the game.

Scenario conversion from earlier versions to JTLS-GO 5.1 now correctly populates the Link 16 structure data.

3.27 JTLS-2019-14019 Air Mission IMT Package Incorrect Display

When an air mission was removed from a mission package, the Air Mission IMT continued to show the mission was assigned to the package.

The IMT definition was using the air mission name to fill the cell. A new table cell renderer specific to mission package name was added.

3.28 JTLS-2019-14022 Manage Air Mission Tasks Package Crash

An air mission package with a Package Timing Option of Airborne on Call was orbiting. The Primary Attack mission Targeting Option was Unplanned Type. A Manage Air Mission Tasks order was submitted to add a multi-object attack with time NOW to the Primary Attack mission. The Primary Attack Mission began to move toward the target. The remaining package missions remained in orbit Holding.

The Player tried to force the remaining missions to follow by sending a Manage Attack Package order to change the Package Timing Option from Airborne on Call to Time on Task with a new rendezvous point (closer to the intended targets). The remaining missions added the new Rendezvous task at the top of their task lists, as expected. The CEP then crashed.

The situation that ultimately led to the crash was precipitated when the Player attempted to convert an Airborne on Call package to a Time on Task with a new rendezvous location AFTER the strike mission left the rendezvous location. The logic attempted to execute the new rendezvous task for the remaining missions, but the strike mission had no rendezvous task, which the model had not anticipated, and therefore crashed.

This situation would never have arisen if the Player had added the Attack task sequentially AFTER the currently executing Air Hold task. Selecting NOW for the attack and then sending a new rendezvous order led to the crash. If the attack had been added after the Air Hold task and then the package was changed to Time on Task (without the new rendezvous), the entire package would have moved to execute the attack as desired.

Beyond that procedural issue, new validity checking was added to the Manage Air Mission Tasks order. The new logic rejects the order if the Player tries to add an Attack task before the rendezvous/air hold/ground alert task. A non-compliance message notifies the Player that the Attack (i.e. Fire Weapon task) must always be added AFTER the rendezvous/air hold/ground alert task.

3.29 JTLS-2019-14025 Air Mission Damage Not Recorded In AAR

There were only two damage records for air mission-inflicted damage in the AAR database. The Controller Damage Reports showed extensive damage inflicted by air missions.

In order to filter records, the AARC must have knowledge not just about the record to be filtered, but any record that it might refer to. For example, an Air-Air engagement involves both a killer and a victim air mission. The AARC maintains knowledge of all air missions because the Air-Air engagement event might have a filter that states only records that involve a killer mission from a specific side should be filed.

For AAR records that exist in the CEP as objects, such as units, air missions, JDPIs, convoys, and so on, the AARC always maintains knowledge about them. But some records, specifically engagements and detections, are so numerous that the AARC expires and forgets about them after a certain amount of time.

The AARC was improperly retrieving the creation time of these records as game start, which always resulted in their immediate expiration. Thus, for missiles, whose damage event record was filed at the time of firing but whose damage item records were filed at the time of impact, the damage event record did not exist, causing the damage item records to be recorded without an associated damage event. This broke the link between the record and the firing air mission.

A second error was that the proper expiration time of the damage event records is actually unknown. As stated above, the damage event records were filed at the time when an air mission fired its weapons. But if cruise missiles are fired, it could be hours between the firing event and the impact/damage assessment. It was necessary to rewrite the CEP code so that both the damage event record and the damaged item records are input into the CEP together at the time of impact. The air mission itself will still record that it has fired its weapons with the AAR, but the actual firing event will not be inserted until impact of the weapons.

3.30 JTLS-2019-14027 Air Mission Package Name IMT Error

The IMT screen used to display Air Missions had a formatting error. If a mission was part of an air mission package, the full name of the package was not displayed on the IMT. Only the first nine characters were visible.

The names of air mission packages were allowed to be up to fifteen characters, but only the first nine characters were displayed on the IMT. This formatting error was corrected in the IMT definition file.

3.31 JTLS-2019-14028 ATO/Mission Package Orders Missing Field

As part of the Super WHIP implementation, some orders required that a Force Side field be added to them. These orders included the ATO order and the Manage Attack Package order. The ATOG was not changed to output these new fields into the spreadsheets, so the spreadsheets could not be sent until a value for the field was added.

The code was modified to add the field in the spreadsheet output for both orders. The Force Side that is generating the ATO was used to supply the value.

3.32 JTLS-2019-14029 Air Mission Package Timing Errors

Creating an air mission package using the "ASAP" timing option caused errors. If the aircraft class used for escort missions was inherently slower than those used for the attack missions, the escort missions would fall behind while en route to their destination. This meant that the escorts were unable to provide the necessary support.

The "ASAP" timing option meant that the missions should travel as fast as possible toward their destination. The purpose or the capabilities of all missions in the package were not taken into consideration. This caused some missions to fall behind in their tasking. To prevent this from occurring, the "ASAP" option was removed from all time-related fields in the Manage Air Mission Package order. Only the "Now" option or a specific time option remain in this order.

3.33 JTLS-2019-14031 Model Crash Ship Movement With Air Mission

The CEP crashed when a ship moved and it had a mission in Aircraft Delay posture. The CEP was attempting to determine if the scheduled launch times for any of the air missions should be adjusted due to the move. It does this by checking the location and timing requirements of the air mission's first primary task. In this case, the primary task for the air mission had been canceled, leaving no primary task, which resulted in the crash.

An air mission should always have a primary task, and the Player should not have been allowed to delete the only primary task associated with the air mission. Without a primary task, the air mission has nothing to do, and if this is desired the proper action is to cancel the air mission.

Code was added to prevent the Player from deleting the only primary task of an air mission, unless it is the mission's current task, which should cause the mission to head home. This should prevent the crash situation from occurring again, but a logic error was also added to the code to catch and ignore the mission if it has no primary task.

3.34 JTLS-2019-14032 HTTP Subscription Request JXSR Crash

The WHIP makes subscription requests via the Apache to the JXSR. If a WHIP, or any other requester, makes a subscription request and does not include the side parameter, the JXSR crashes.

The JXSR module, which is integrated into the Apache service, was not properly handling a JXSR HTTP request that did not have a side parameter. There are three cases where the side parameter may be included in an HTTP request:

1. Subscription request
2. Update request
3. Order Fill request

In (1) and (2), an appropriate reply was added to the JXSR module to inform the requester of the missing side parameter and the request is not forwarded to the JXSR service, In (3) the parameter is optional and the JXSR is able to handle either having or not having the side depending on the request.

3.35 JTLS-2019-14033 ICP Options Menu Cleanup

The ICP Options menu options "Start AAR Filtering Interface" and "Start MDP Configuring Interface" did not start applications.

The menu options from the Options menu were removed. Buttons to start the two functions exist under the MDP and SDR Clients tabs.

3.36 JTLS-2019-14034 Aircraft Range Rings Not Displayed

When aircraft were assigned to ground units, the range for those aircraft could not be displayed on the WHIP.

Aircraft ranges were already available for aircraft in squadrons, but this feature was not implemented for aircraft assigned to other ground-based units. Using the same structures as for other range rings, the ranges for aircraft were added as a display capability. For the ground-based units, the aircraft ranges were accessed from the Combat System section of the Unit context menu on the WHIP.

3.37 JTLS-2019-14035 IIR Report Incorrect Sensor Damage Reported

The Intelligence Information Report (IIR) listed damage to sensors as part of a Controller-generated Area Report. The sensors were listed as 100-percent capable in the IMT, but the IIR report showed them as damaged.

When the IIR message was generated for collection on a DSA, the message only included information of sensors which were actually damaged. This information was correct. However, in the case of controller-driven area reports, all of the sensors (and targets) in the area were included in the IIR message. For these messages, all of the sensor targets were incorrectly listed as being damaged.

The format for the IIR message did not include a count of the number of damaged sensors. For all other target categories, the number of damaged objects was included in the report. Changes were made to include the number of damaged sensors. This clarified the damage states of the sensors in the IIR message.

3.38 JTLS-2019-14036 Unable To Reset HRU Prototype Parameters

The Controller changed an existing HUP, such that it could be used for remote operations. These changes involved an assignment for the critical combat system, changing the control type to REMOTE, and setting a non-zero control distance. When the user was done using the remote-control capabilities, they attempted to re-set the HUP parameters back to their original values. This re-set process failed to change the values back.

The code used to change the HUP parameters did not correctly assign the ordered values. Specifically, the control distance for the HUP was never changed unless the specified distance was greater than zero. However, when changing from REMOTE to MANNED control, the HUP must have a control distance of zero. Code changes were made to allow for these parameter changes.

3.39 JTLS-2019-14037 WHIP Map Sometimes Failed To Display

The WHIP map would sometimes fail to display while adding the flight path layer.

The problem was caused by an internal synchronization problem. The issue was corrected.

3.40 JTLS-2019-14039 HRU Fire Missile Crash

A Fire Missile order was submitted to an HRU that owned an SSM target. The model immediately crashed.

A typographical coding error was found. The code error was corrected.

3.41 JTLS-2019-14040 Copy Scenario Non-Existent History Files

The copyscenario script performs a copy of a scenario and all its relevant directories, providing a new name for the scenario. When running the script against a configuration-managed scenario in a fresh JTLS-GO 5.1.0.0 release, an error was produced when the script attempted to copy non-existent scenario history files.

The script was modified to perform a check for any history files before attempting to cycle through and copy each one.

3.42 JTLS-2019-14042 GIS Tool Road Coverage Not Consistent

The GIS Tool has a "Calculate Grid Parameters" function that determines the terrain type (OCEAN, OPEN etc), road coverage (GOOD ROAD, POOR ROAD or NO ROAD), and elevation (or depth) of terrain grids.

The GIS Tool was incorrectly determining road coverage in terrain grids - for example, the Tool would determine that the road coverage in a terrain grid was POOR even though the roads crossing the grid were predominantly, or entirely, multi-lane highways that would be considered GOOD. In this case the coverage should have been GOOD.

For non-OCEAN grids, road coverage is based on the number of lanes in the road arcs that cross the grid (the total length of GOOD road arcs and POOR road arcs are compared and whichever has a greater total length determines whether the grid has GOOD or POOR road coverage) and whether the grid is paved or unpaved (an unpaved grid is always considered to have POOR road coverage).

If no road arcs cross a non-OCEAN grid, the road coverage is NO ROAD. Road coverage for an OCEAN grid (this includes lakes and reservoirs) is always NO ROAD.

The GIS Tool code was reviewed to ensure that it followed the methodology described above. The review discovered a missing call, which has been corrected. The review also uncovered some inefficient blocks of code, which were rewritten.

3.43 JTLS-2019-14044 GIS Tool Terrain Grids Not Exported

Some terrain layers and grids were missing from the tl_gd text file.

An erroneous line of code was entered in a for loop that prevented some grids from being written out. That line of code has been removed.

3.44 JTLS-2019-14045 AAR Reports Not Providing Consistent Results

The TRIPP AAR Aircraft Kill Summary report permits the user to choose the various way to show results. These include breakout by Aircraft Class, by Force Side, and by Time Interval. Depending on what options were selected, the results from the query would be different. This should not happen, because in all cases all aircraft kills should be displayed.

The problem was a combination of using an Oracle union statement to combine results from the four different tables that define aircraft kills, and the columns that were retrieved were based on the display selection. The union statement imposes uniqueness on the retrieved data. The problem was solved by switching the "union" statements to "union all" statements which do not impose uniqueness.

3.45 JTLS-2019-14046 Combat Systems Names Formatting

The names of combat systems (CS) were not fully displayed in some messages and on the IMT. Only the first 15 characters of the CS were shown on the Logistics Reports and on the CS IMT screen.

Combat system names have a maximum length of 25 characters, but only 15 characters were displayed. This name length increased 15 to 25 characters as part of the development of JTLS-

GO 5.1.0.0 but the format of the output was never modified to reflect this increase in length. The appropriate formats of the strings were modified to correct this oversight.

3.46 JTLS-2019-14047 Directed Resupply Missing Help

The Directed Resupply order was missing text in one of the order fields. The field labeled "Request Type" had no help information.

Text for the field "Request Type" was added to the order panel.

3.47 JTLS-2019-14048 Multi-Sided WHIP Map Not Clearing All Objects

Restarting the CEP from the Start option, while keeping a multi-sided WHIP up, was not resetting all objects in the map (in particular non-permanent objects such as air missions and Convoys). These types of objects remained displayed on the map after the new download events completed, while they did no longer existed in the game.

The correction was to perform a standard clear of the map data collection as is done on a standard single-sided WHIP to have the map display properly reset on new downloads.

3.48 JTLS-2019-14049 Cancel Fire Mission And Object Take Action

When Fire Missions were canceled using the Manage Pending Fires order, the Fire Missions were properly canceled in the CEP and removed from the Fire Mission IMT. However, the corresponding Object Take Action events, which executed the scheduled Fire Missions, were not canceled. Since there were no Fire Missions present, the remaining Object Take Action events served no purpose. They should be removed for efficiency.

The underlying subroutine that processes the Manage Pending Fire Missions order did not include any logic to cancel the Object Take Action event for each Fire Mission that was canceled by the player. The missing code was added to correct the problem. Note this issue had little adverse impact on the model.

Additionally, when a Fire Mission's start time is modified by the player, the Object Take Action event must be rescheduled. The logic to do so was present and correct when the shooter was a ground unit. However, if the shooter was an HRU, the logic was incorrectly using the HRU's parent unit to find the Object Take Action event. While the Fire Mission is held by the parent, the Object Take Action event is held by HRU. Consequently, the logic failed to find the Object Take Action event and could not reschedule. The error was corrected to use the actual shooter (in this case, the HRU) in the search for the Object Take Action event.

3.49 JTLS-2019-14051 Map Find On Multi-Sided WHIPs

Attempting to find an object on the Map when using a multi-sided WHIP would execute the search using side truth instead of the side perception set for the map. This allowed a side to locate an unperceived object given its name in the find field.

The map side perception setting is instead used to execute the search and only validates its finding if that side has perception of the searched object name.

3.50 JTLS-2019-14052 Unending Air Hold For Insert/Extract Mission

A Player ordered a mobility mission to perform an insert-extract mission. This mission was ordered to first wait in air hold before proceeding on to extract an HRU. The mission flew to the specified holding location and waited there for the ordered duration (five minutes). The mission started executing the next task, to load the HRU on the aircraft, but then the mission immediately started another air hold with a duration of one minute. The mission proceeded to perform a seemingly endless number of one-minute air holds until it ran low on fuel.

The mission performed the initial air hold exactly as ordered. The subsequent air holds were automatically added to the mission by the model because the designated HRU was not located at the current position of the air mission. The ordered location for the extract was not at or close to the location of the HRU. The mission was simply waiting for the HRU to arrive at the specified location.

The order panel for the Mobility Mission uses a utility called the Movement List. When the player added movement instructions to that utility list, the location field is never cleared. This meant that the extract location and the initial air hold were ordered to happen at the same location. To clarify these locations, a separate order field was added to use a different location for the different types of movements in the utility list. This forced the player to set the location for the HRU extract, rather than assume the same location as the air hold.

3.51 JTLS-2019-14053 Command Hierarchy Unit Info Popup Failed

When the mouse hovers over an entry in the WHIP's Command Hierarchy, a box with unit information should pop up. If the unit was an HRU in a posture not allowed for other unit types, the box failed to pop up and an exception was logged.

The static vocabulary item Unit_Posture was being used to look up the posture name. Unit_Posture does not include HRU specific entries. The lookup was changed to use Unit_And_Hru_Posture.

3.52 JTLS-2019-14055 Air Mission Scheduled Posture Time Incorrect

When civilian air missions were launched, the scheduled posture time was always zero on the IMT. It should have shown the time of the primary task, which was the time when the mission arrived at the debark base.

The code for processing the civilian air missions was never computing the arrival time at the debark base. This always resulted in a scheduled posture time of zero, rather than an accurate arrival time. Changes were made to ensure that the correct time was calculated and published for viewing on the IMT.

3.53 JTLS-2019-14056 WHIP/DDSC Incorrect Warning Message

A warning about multiple create/delete events for a map object was periodically logged to the debug console. The message was incorrect.

The incorrect warning was removed.

3.54 JTLS-2019-14058 Targetable Weapons DDSC Table Column Name

The Targetable Weapons table in the Database Development System Client (DDSC) contained a column labeled "Orbit Capable". "Communications Link Capable" is a more correct name.

The name of the column was changed to "Communications Link Capable".

3.55 JTLS-2019-14060 GIS Tool Road Arc BRIDGES

When the Preprocessor creates a road or rail arc, the arc's Type is initially set to BERM. After all road, rail and river arcs are created, the Preprocessor attempts to find road and rail arcs that cross river arcs. When a crossing is found, the road/rail arc's Type is supposed to be set to BRIDGE. While testing the Preprocessor with road and river networks (no rail networks were involved), the crossing road arc sometimes continued to be classified as BERM.

The Preprocessor uses a quad-tree to locate road arcs quickly based on latitude and longitude. The quad-tree is used to initially filter out road arcs that are outside a specified search area. For those that meet the search criterion, an intersection test is applied to see if they actually cross the river arc. If the crossing is confirmed, the road arc's type is set to BRIDGE, otherwise it remains BERM. This method is much quicker than applying an intersection test directly on every road arc with every river arc to find the crossing arcs.

The quad-tree used by the Preprocessor is provided by the OpenMap API. In order to populate the quad-tree with road arcs, each arc must be referenced to a latitude/longitude coordinate. The center coordinate of the arc is used for the reference coordinate. This is important to note as explained in the following paragraphs.

The search area is based on the extents of the river arc. The maximum latitude/longitude and the minimum latitude/longitude of the arc's endpoints define the extents. When queried, the quad-tree will return road arcs whose reference coordinates are inside the search area. A problem occurs when the river arc and a road arc satisfy the following two conditions:

1. The river arc is relatively short leading to a relatively small search area.
2. The road arc is relatively long such that its reference coordinate is outside the search area even though a section of the arc is contained in the search area.

In this case the quad-tree query will miss this road arc. The extents need to be expanded to create a larger search area. To do this, the longest road arc is taken into account. For each river

arc, the search area becomes the area based on the arc's extents, plus the (great circle) distance of the longest road arc applied to extend the search area in all four directions.

Rail arcs are handled in an analogous manner.

3.56 JTLS-2019-14061 TRIPP/AAR Aircraft Kill Summary Report

When using the TRIPP/AAR Aircraft Kill Summary report to gather data for analysis, the data was not consistent depending on which output format were requested, and the report only provided simple reports. If the user requested a report by Aircraft Class and Time they received a report with a table of kills by Aircraft Class and a separate table with kills by Time Interval. What should have been provided was a combined table of kills by Aircraft Class and Time Interval and a second table of kills by Time Interval and Aircraft Class.

The issue with inconsistent data was tracked down to the user of a "union" command to collect the kills from the four various kill tables (Air-Air, Surface-Air, Surface, and Other Losses). In Oracle a union command enforces uniqueness on the returned records. For a breakdown by Aircraft Class and Time, if a particular Aircraft Class had numerous single Air-Air losses in a specified Time Interval, only one of the records was being retrieved and added to the statistics. This was corrected by using the "union all" command which does not enforce uniqueness.

The second issue of combining the data into a more robust format required the addition of code to collect and provide the various user option combinations and expanding the stylesheet to render the results on the TRIPP Report Browser.

3.57 JTLS-2019-14062 Adding Mobility Lift Task For HRU Crash

If a user submits an Add Task to pick up an HRU, the model crashed.

The crash was caused by not setting the Force Side for a temporary air mission structure that was created to hold the new task information. The problem was solved by setting the Force Side attribute for the temporary structure.

3.58 JTLS-2019-14064 Stationary Ship Air Mission Launch Crash

A Player attempted to launch an air mission from a stationary aircraft carrier. The ship was initially in port, so the mission was placed in a runway delay. The Player then gave the ship a move order and the ship left the port. However, the ship was unable to move because the water depth was more shallow than its minimum depth. The crash occurred in the process where the mission was trying to take off.

For this incident, the Controller changed the depth of the terrain grid while the ship was located in that grid. This change should never have been allowed. The code to alter the terrain was modified to prevent this from happening. The Controller was prevented from changing the depth of a grid to a value which was not allowed for all of the ships located in that grid. This terrain depth problem was found while investigating the initial crash.

The model crashed because it was attempting to schedule a launch for the air mission for a time immediately after the ship had left the port. The effective time for this take off event was computed as a time in the past. All events must be scheduled for the future. This check on the status of the runway was changed to only look once per minute of game time. The crash was associated with checking too often, given that the ship was not moving.

3.59 JTLS-2019-14067 Logistics Report Formatting Issues

Some of the data values in the logistics report were printed incorrectly. For very large quantities of supplies, the amount in the report was printed using scientific notation, but the number after the exponent "E" was not shown.

This problem was due to a message formatting error. Every number in a message was allocated a certain number of characters. In this case, there were not enough characters in the specification to display the very large value. It was also found that some of the text strings were not large enough to hold the names of supply categories. The size of supply category names changed from 15 to 25 characters, but the message formats were never adjusted to match this change.

3.60 JTLS-2019-14068 SVP Warning 1714 Not Generated

The database has ships that were not at their assigned formation station location. Warning 1714 was not always properly generated.

Warning 1714 was not generated if the ships were on the same grid layer at their desired formation location. Ships that were a long distance from their desired location were reported, but ships that were close but still outside the desired grid were not reported. The logic error was corrected.

3.61 JTLS-2019-14070 Mine Laying Number Of Mines Expended

A user ordered an air mission to lay mines at two different locations. The mission carried mines which were normally used by a specific minefield target type. This target type was meant to create a minefield with a total of 10 mines. When the mission launched it was carrying ammunition for a total of 20 mines. But, when the mission reached the location of its first mine-laying task, it created a minefield with 20 mines. It did not attempt to lay mines at the second ordered location because it reported that it did not have supplies to perform that task.

In the model, a task to lay mines always expended all of the mines that were on board the aircraft, regardless of how many mines were in the minefield type. If a user wanted a mission to lay mines in multiple locations, then the mission must also execute a rearming task between the mine-laying task. That way, the mission would reload the required supplies before attempting to create the next minefield. No code changes were made - this correction involved updating the Help text in the Mine Laying order panel to clarify this issue.

3.62 JTLS-2019-14072 DDS Network Node Change From Map

Two connected node names cannot be changed on the DDSC map using the arc edit dialog. They should be changed from the DDS arc table. The arc edit and node edit dialogs are redundant and need to be removed.

Selecting a node to change the name of in the DDS arc table is not easy. Selection should be from the map.

The user is now able to select a node while using the DDSC map edit function and the DDS arc table. All redundant arc and node edit dialogs were removed.

3.63 JTLS-2019-14073 Road Arc Lanes After Trimming Nodes

Within the GIS Tool, when a node is removed during a trimming operation, the two arcs that were linked to the node are replaced by a single arc. When a road node was removed, the replacement road arc had two lanes in both directions, whereas the original road arcs had one lane in each direction. The number of lanes in the replacement arc should have been one lane in each direction.

Besides using the existing minimum arc length and maximum deviation constraints, additional node removal constraints have been added that look at the characteristics of the arcs that are connected to the node. These characteristics include the composition, type and number of lanes. For example, if one arc represents a paved road segment and the second arc represents an unpaved segment, the node will not be removed. The two arcs must both be paved or they must both be unpaved for the node to be considered for removal.

These extra checks try to ensure that a node can only be removed if the arcs linked by the node are similar. If the node is removed, the two arcs are removed and replaced by a single arc. The attributes of this arc are derived from the attributes of the removed arcs.

3.64 JTLS-2019-14074 WHIP Deadlocked While Drawing Slides

The WHIP deadlocked writing a slide while a check for updates was occurring.

The check for updates was unnecessarily holding a lock for a long period of time.

3.65 JTLS-2019-14075 Terrain/Sealane Update Sealane Network

Moving or adding Sealane Network nodes/arcs, during game execution, created problems for the crossing of land grids by sealanes and for terrain changes to depth, which did not update the relevant sealane arc depth.

Code was added to check for any movement of a sealane node that subsequently creates land crossing sealane arcs. Changing Terrain Grid depth now recalculates any sealane arcs with nodes present in the grid. A new "Manage Sealane Arcs" field was added to the Manage

Movement Networks order. The field explicitly recalculates the Sealane Arc Depth and Depth Distance, in the case of a sealane arc crossing a grid with no nodes in the grid.

3.66 JTLS-2019-14077 Ground Units Failed to Enter Combat

A ground unit moved within direct fire range of an enemy unit and did not engage in combat. Ground ROEs were set to weapons free for both units greater than the direct fire ranges. The unit was moving administratively when it approached within the direct fire range of the enemy unit. The enemy unit was also within direct fire range of the moving unit. The unit did not stop moving and essentially ignored the enemy unit.

When a unit moves, the model checks the surrounding area for any enemy units within a distance held in the global variable MAX COMBAT SYSTEM RANGE. However, the variable held a value of zero because it was not initialized. As a result, the logic concluded there were no nearby enemy units within zero kilometers. The unit did not stop moving and Lanchester combat was not initiated.

In JTLS-GO 5.0, the MAX COMBAT SYSTEM RANGE variable was initialized with the longest direct fire range of the 99 generic combat system types while reading the database. The transition to JTLS-GO 5.1 removed the relationship between combat systems and the Combat System Prototype table which allowed the combat systems, greatly expanded in number, to be read directly. The initialization of the MAX COMBAT SYSTEM RANGE was not included in the new read process.

There are now a large number of combat systems in the database, some of which may not be used in any given scenario. New logic was written to consider only those combat systems in use to determine the longest direct fire combat system range to assign to MAX COMBAT SYSTEM RANGE during game initialization. This processing is done as units arrive in theater during initialization so that only combat systems in use are included.

New logic was also added to update the MAX COMBAT SYSTEM RANGE whenever the controller changes the direct fire range (CS EFFECTIVE RANGE) of a particular combat system type, changes the attrition type (CS.ATTRITION.TYPE) of a particular combat system type, removes or adds combat systems to a specific unit, or creates a new unit. Any of those controller actions could effect the MAX COMBAT SYSTEM RANGE.

In addition, the MAX COMBAT SYSTEM RANGE was renamed to MAX DIRECT COMBAT SYSTEM RANGE throughout the model and added to the ASCII checkpoint read/write process to avoid recalculation during each checkpoint restart.

3.67 JTLS-2019-14078 WHIP Default Slide Cleared On Startup

If the default slide was not the first slide loaded, a new one would be created while building the slide chooser combo box.

Building the combo box was suppressed until all slides are loaded.

3.68 JTLS-2019-14080 Created Units Combat System Range Rings

Controller Create Unit and Manage TPPFD orders were submitted while the model was executing. After the new unit arrived and appeared on the WHIP map, the context sensitive menu for the new unit did not offer any combat systems for range ring display. Only the Tactical Intel Distance range ring was available to select.

Note: The combat systems for units present at game start (i.e. units that were not created after game start) were available in the menu for range ring display.

The problem was caused by a logic sequencing error that occurred only when a new unit was created. When the unit was first created, the logic (in the routine JDS UNIT INITIALIZATION) attempted to establish the range rings before the unit's combat systems were issued in the unit. Because there were no combat systems available at that instant, no range rings were established. To correct this problem, the routine that publishes the range rings (PUBLISH.RANGE.ITEMS) was added AFTER the combat systems were issued, which occurs when the unit is added to the game.

3.69 JTLS-2019-14081 Manage Attack Package Order End Time

The Manage Attack Package order allows an entry in the End Time field to be earlier than an entry in the Start Time Field. This problems occurs for both Alert Mission and Airborne On-Call options.

A constraint was added to the Manage Attack Package order that prevents entry of an end time earlier than a start time.

3.70 JTLS-2019-14082 MISREP Missing Orbit Departure

When any orbiting mission type departed its orbit area, the departure was not listed in the detail section of the Mission Report (MISREP). On the other hand, when a mission started an orbiting task, that action was listed in the MISREP. Both actions should be included in the MISREP for consistency and clarity, especially when a mission has multiple orbit locations in its tasking.

The orbit departure was added to the detail section in both the interim and final MISREP messages. The new entry shows the time the mission left the orbit and the orbit type (i.e. point, path, polygon, OPAREA, or guided). For consistency, the orbit type was also added to the orbit start.

3.71 JTLS-2019-14083 Spotbugs Corrections

The Java code is regularly scanned by the Spotbugs static code analyzer to spot small code errors.

Various issues found by Spotbugs scans were corrected.

3.72 JTLS-2019-14085 MDP Interface Add Valid Email Checking

The MDP service instead of the user interface was performing email string format validation of the user provided email.

This check has been added to the MDP user interface program so that an incorrectly formatted email string is caught before it is processed by the MDP service.

3.73 JTLS-2019-14086 WHIP Froze While Opening Utility

While opening a utility panel, the WHIP froze.

The order panel was being generated by the wrong process. The problem was corrected.

3.74 JTLS-2019-14087 AAR Views Not Recreated On Checkpoint Load

When importing an AAR checkpoint into the AAR database, the Configuration Managed views were not being recreated. This situation was not an issue unless the entire AAR database structure had been cleared, and therefore is not an issue the majority of the time. However, if the AAR structures are entirely cleared, such as when starting with a fresh database, the situation prevents all of the AAR Reports from executing properly.

Both the views and the sequences were moved into their own control files to allow better control on their creation and destruction. The import procedure was modified to explicitly delete the views before the import, and to create them after the completion of the import.

3.75 JTLS-2019-14091 MISREP Missing Package Departure

A mission left the package it had joined after completing its package responsibilities. The mission detail section of the MISREP indicated the mission had been canceled. The MISREP was somewhat misleading because the mission had expended all its weapons as tasked, before being canceled. The MISREP does indicate when the mission first joins a package, but doesn't show the name of the package.

A package departure was added to both the interim and final MISREPs. The new submessage indicates the departure time and that package responsibilities have ended for the mission. The submessage is generated when a mission is removed from a package because it has executed (or attempted to execute) all of its Fire Weapon tasks, or runs out of weapons, or runs low on fuel, or the package itself is disbanded when the last OAS mission leaves the package. The package name was also added to the submessage generated when the mission first joins the package.

3.76 JTLS-2019-14093 Order Vocabulary Items AAR Reports

When AAR Reports are generated, the results all contain data about the original order. This is printed with the report. For order vocabulary fields, the vocabulary name, rather than the index send on the order, should be displayed. This was not happening for Controller-submitted orders, because the order was sent with a Force Side of CONTROLLER but the vocabulary translation was expecting a Force Side of CONT. The error did not affect the validity of the report, only the display of the order data.

The code was modified to switch the vocabulary Force Side from CONTROLLER to CONT.

3.77 JTLS-2019-14094 ATOT No Egress Route Utility Order

The ATOT creates air mission orders that include ingress and egress routes, corresponding to each mission defined in the ATO. However, when an ATO mission includes a task to orbit a polygon area, the ATOT enables the Egress "Specific Route" option in the order but does not provide a route utility for the egress.

The ATOT independently creates the mission order and each of the utilities for the order. The egress utility for the order was being created before all the egress route points were included. In this case, the mission started with no egress route points, and with no egress points the egress utility was not being written. Later, the ATOT would add a point to the egress route and then write the associated order. The order was configured to include an egress route but the egress route had not been written. This caused an error during the group order checking.

The ATOT code was changed to write the order before the associated order utilities. This ensures any egress route points added later in the process are included in the egress utility.

3.78 JTLS-2019-14095 AAR Order Field Checks CEP Order Format

The Order Verification Program is responsible for checking CEP orders, AAR orders, and DDS orders to verify the correct formatting of the order XML file. One of the restrictions is that, if a field is an object field, any equality checks within the field should use the field name and the attribute that is to be checked (for instance UNIT.side equals WHIP_SIDE).

In the AAR, orders use the table name followed by the attribute (AAR_UNIT.side). This allows the AAR to easily determine the mode of the field from the database, but causes the OVP to flag it as an error.

It was decided that the OVP rules should be followed, but the report code still requires the table and column name to determine the field type. Therefore, the code was modified to strip off the field name and replace it with the table name to get this information. This aligns the format of the AAR and DDS orders with the format used by the CEP orders, allowing the OVP check to remain. All orders that used the table.attribute format were modified to use the field.attribute format.

3.79 JTLS-2019-14096 Naval Minefield Exploration Missing Message

A Sweep Naval Mines order was submitted to a naval vessel. The search area did not, in fact, contain any minefield targets. The vessel completed its Exploration task, but no message was generated to inform the player. Players felt it would be beneficial to have a message stating that no minefields were found.

There was no such Player message present in the CEP. A new Player notification submessage was implemented, which is now generated if no minefields are detected at the conclusion of the Exploration task. If minefields are detected during Exploration, the vessel immediately transitions to the Reconnoiter task to begin mapping the mine locations before beginning to clear them.

At the same time, Player notifications generated by mine-clearing operations, conducted by air missions and land units, were reviewed for adequacy. Air mission MISREPs include a total count of the number of mines cleared from all minefields found. If no mines were found in the search area, the MISREP indicates none were cleared. Land units that do not find a minefield target at the search location generate a task cancellation message informing the player. For air and land units, no further model changes were deemed necessary.

3.80 JTLS-2019-14098 Ground Unit Directed Resupply Order

When JTLS-GO moved away from the Mandatory Transfer Order to a single Directed Resupply order, with the option of using the Normal or Mandatory supply options, the model lost the ability to tell a Ground Unit to send supplies via an implicit convoy to another unit.

The Sending Unit field was limited only to Support Units, Airbases, and Forward Arm and Refuel Point units (FARPs). The field constraint was expanded to also include Ground Units, Squadrons, and Naval Units. If any of these last three unit types are placed in the Sending unit field, the Order Management Authority (OMA) ensures that the user submit the order with a Requisition Type of Mandatory.

3.81 JTLS-2019-14102 Stationary Target TW DETECTION REQUIRED

If a user orders an air mission to fire a Targetable Weapon that requires a detection (TW DETECTION REQUIRED of Yes) at a location, the weapon is fired. No detection requirement is imposed. If the same weapon is fired at a stationary target and a detection of the target is not made, the weapon is not fired. This was inconsistent. There is no difference between firing on a location and firing on a known location of a stationary target.

The firing logic was changed and even if there is no detection of the stationary target, the missile is allowed to fire.

3.82 JTLS-2019-14104 Convoy Pickup Location With No Pickup Unit

If the user enters an order telling a convoy to pick up supplies from a location and does not specify a unit, the model will crash when the pickup occurs.

The model did not properly account for picking up from any unit in the area. All of the code to accomplish this was in place for air missions, but the code that started the convoy pickup location did not consider this possibility. Changes were made to consider this possibility.

3.83 JTLS-2019-14107 WHIP Slide Graphics Not Working

When editing graphics on a slide using the WHIP drawing tool, the context sensitive menu options to change the order of the graphics were not working, and the selected ordering action appeared to have no effect.

The problem was caused by a save, followed by an immediate reload, of the saved slide graphic objects that occurred while editing. After the reload, the graphic objects on the slide were recreated, making them a new instance that no longer matched the selected graphic with the ordering selected action. This was corrected by performing the save after the current graphic editing is complete and/or the drawing tool is exited. This maintains the graphic instances on the slide while editing and that allows their ordering to be changed.

3.84 JTLS-2019-14109 SDR Tables Not Using Consistent Object IDS

In JTLS-GO 5.0 and earlier, the AARC would insert an object's JEDI index as the unique ID for the object. The full JEDI is composed of the object's index plus the object type. The SDC would break the object's JEDI into its two components (index and object type) and insert this information into separate columns in the SDC tables. There was a direct correspondence between the AAR tables object's unique ID and the SDC tables object index.

In JTLS-GO 5.1, the AARC was modified to insert the entire JEDI as the unique ID so that applications could determine the type of object they were dealing with from the ID. This broke the direct link between the object representation in the two sets of tables.

While it is possible to still make the link, either a programmatic link or via an SQL query, between the unique ID in the AAR tables and the object index in the SDC tables, the decision has been made to reestablish the direct link. The SDC was modified to store the entire JEDI as the object index. Though the index now represents both the object index and the object type, the object type is also stored separately. This required the object index columns in the SDC tables to be switched from a 10-digit integer to a 20-digit integer. This may affect programmers interfacing with the database and require them to store their results in a long int versus an int.

3.85 JTLS-2019-14111 Message Stylesheet Generator Error Message

The error message when the static_voc entry and message title were inconsistent stated that the static_voc did not match the title. The requirement is that the static_voc is the same as the message title with the spaces replaced by underscores.

The error message was updated for clarity.

3.86 JTLS-2019-14113 Faction Has Same Barge Assets Twice Crash

The database allows the same Transportation Class to be listed as available on the same network twice, once with no transponders and once with transponders. Working with a database with this situation for barge assets the model crashed when ordering identifying which Transportation Classes were available. The first set of assets were identified and that Transportation Class was filed in a set. When the second set of assets, with the same Transportation Class, was identified the model attempted to file it in the set again resulting in the crash.

The code was changed to properly allow the same Transportation Class to be listed multiple times on a barge or rail network. Other places in the code expecting a Transportation Class to appear only once in available assets were also modified to handle multiple occurrences of the Transportation Class.

3.87 JTLS-2019-14114 Synapse Side Number Instead Of Defined Value

An instance of the side number was being used for the Controller side as the number 11 since the move to 21 sides.

The solution is to use the defined values for side instead of the literal side number. This was corrected in the Synapse.

3.88 JTLS-2019-14115 WHIP Slide Manager Table Entry Permissions

When changing slide permissions from Player to side or vice versa, the shared slide manager would not update its entry to reflect the change.

The update did not set the change for the slide permission change, and the table update now does.

3.89 JTLS-2019-14117 JHIP Not Updated For Main Version Change

The JTLS-GO HLA Interface Program (JHIP) was never upgraded to function properly in JTLS-GO 5.1.

Major JHIP code changes were made to upgrade to JTLS-GO 5.1. The majority of these changes were associated with the increase in the maximum number of sides in the game from 10 to 20. Additional modifications were made to reflect changes in the structure and required fields of some orders. Controller orders were used to pass information from the JHIP to the CEP during execution.

3.90 JTLS-2019-14120 TTG For Package Attack Missions Against Units

The Attack Package Mission order did not allow the user to specify a Target Type Group when an OAS package mission is told to attack a unit or an HRU. It was possible when the mission was told to attack a location.

A new optional field was added to the order panel. The user now has the option of entering a Target Type Group (TTG) List when the mission is told to attack a Unit or an HRU.

3.91 JTLS-2019-14122 WHIP Slide Rename Deletes Slide

Changing the name of a slide in the Slide Manager appeared to cause the slide to be deleted.

On a slide rename action, the original slide was simply copied into a new slide with the new name. The old slide was not being deleted from the slide map editing layer, causing the layer to continue to look for the old slide by name, and not showing the new slide with the new name. This was corrected by removing the old slide from the editing layer.

3.92 JTLS-2019-14125 DDSC Classification Banner Did Not Update

When the user changed the Classification in the Global_Values table using the DDS, the map component's Classification banner text did not update to the newest value.

DDSC code was changed so that the map's classification layer receives updates from the Global_Values table. When the Classification is changed, the banner text will be updated.

3.93 JTLS-2019-14127 DCP Online Help Updated

The DCP help has not been updated since 2009. The contents are out of date and newer option description are missing.

New DCP help html files were created and the contents updated. Setup Destination Domains and Delete DDS Histories were added.

3.94 JTLS-2019-14129 Order Checker Oec Name Uniqueness

The order panel in the WHIP did not create unique fields, because the "oec-name" attribute in the fields had non-unique names in the utility xml file. The Order Validation Program did not catch it, because the "oec-name" uniqueness within the scope of fields did not check utility order files.

The utility xml file was fixed. Code in the Order Validation Program was modified and a 'oec-name' uniqueness check was added to the utility orders.

3.95 JTLS-2019-14131 DDS Cannot Move Squadron To Homebase

The SVP indicated that a squadron was too far from its homebase. One of the corrective actions was to move the squadron to the location of its homebase. When the action was executed, an error was received from the DDS Glassfish and the move failed.

The SQL update within the SVP Template was poorly formatted, resulting in a nonsensical command. First the new latitude and longitude were included within quotes like they were text. Second, the unit name was using the wrong output argument so the matching record would never be found. Both the errors were fixed.

3.96 JTLS-2019-14133 ATO Spreadsheet Parser Bad Input Data

The Force Sides that the ATO is for is passed to the ATO Spreadsheet Parser as a comma-separated list of indices. The primary side is assumed to be the first of these indices. The program would retrieve it by taking the first character from the list, but this gives you side 1 if the first side is side 10.

Additionally, the user had misspelled the Force Side name in the ATO and the ACO. This was not flagged as an error, but prevents the ATO Period order from ever being written.

The ACO spreadsheet expects values of LINE and POINT, among others, for the ACO Shape. The Parser was then converting these into GEOLINE and APOINT before writing them to the XML output. These might be correct terminology for a USMTF message, but the ATOT expects the wording LINE or POINT.

The first error was fixed by parsing the side list up to the first comma if it exists. To fix the second problem, the ATOT now checks if the Force Side name is valid and produces an error if it is not. The third error was fixed by removing the conversion of LINE and POINT to GEOLINE and APOINT.

3.97 JTLS-2019-14134 Data Repository Right-Click Popup Menu

When a user selected rows from any table on the NON-ORBAT Migration component when using the Data Repository Tool on Windows, the context sensitive menu did not display.

Windows opens right-click pop-up menus when the right mouse button is released, by default. However, Java opens right-click pop-up menus when the right mouse button is clicked, by default. The Data Repository code was modified to override the default Windows function.

3.98 JTLS-2019-14135 No Side Targets On WHIP Map

If the WHIP filter panel was set to show only targets without a side, no targets were visible. When the filter was set to show all targets, the targets without a side were visible.

The Unowned/No Side column in the WHIP filter panel must be treated as a special case to set the visibility of side 0. It was setting the visibility of a non-existent side, since it was treated like

the other side columns. This issue was introduced when increasing the number of sides in 5.1. The No Side column is now treated as a special case.

3.99 JTLS-2019-14136 Coalition Support HRU Flagged Arriving In Water

An HRU is specified in the database as arriving at the same location as a foreign naval unit and is marked to be in coalition support of that unit. The HRU's prototype does not have a small boat type specified. The SVP throws an error which says the unit is arriving in water, even though the CEP will recognize the coalition support and place the HRU on board the foreign naval unit.

The SVP code was modified to permit the HRU to arrive at a water location event if it has no prototype small boat, as long as the HRU is supposed to be in coalition support. A corrective action was added to the SVP Reader to permit the user to access the HRU's initial coalition support unit and assign it. The documentation was updated to indicate an arrival location in water is permitted if an initial coalition support unit is specified.

3.100 JTLS-2019-14138 ATO Spreadsheet Parser Time Adjustment

The ATO Parser interface has the capability for the user to specify a time adjustment for an ATO. This helps in situations where the same ATO is being used over multiple days. Instead of editing the ATO and adjusting all the times the parser can be instructed to perform the adjustment. The ATO Spreadsheet Parser performs this time adjustment on all air mission. However, it does not perform the adjustment on the ATO Start and End Times or the ACO Start and End Time, requiring the operator to adjust these values manually.

The code was modified to use the adjustment date to adjust the start and end dates of both the ATO and the ACO data.

3.101 JTLS-2019-14140 Patrol Order Formation Jumps To ON/OE

When a formation is told to patrol a region that it is already inside, the formation ships jump to ON/OE.

Naval ships have a couple of attributes that specify the location of their next move. If a ship had never performed a move these values reflect ON/OE, and once the patrol starts to execute the ship is moved to this location. The code was modified to go through every formation ship and assign the next location values to the ship's current location.

Once this was done it was noted that the formation patrol behavior was still not correct. The formation ships would stop at their first position in the patrol region and the formation would continuously repeat a single line path. This was caused by a failure to assign an ordered speed to both the formation and its individual ships. Just like the next location values the code was modified to assign speeds to all the ships and to the formation.

3.102 JTLS-2019-14141 Unneeded SVP Warning 1151

In previous versions of JTLS-GO, every Sustainment Logistics Prototype (SLP) could have its own name for a supply category. In JTLS-GO 5.1, this was removed. The SVP was still attempting to check if there were duplicate supply category names over the different SLPs. This check is no longer needed and could not possibly be generated, given the supply category name is the unique database key in the DDS.

Warning 1151 was removed from the code and the documentation.

3.103 JTLS-2019-14143 Jumping Game Time Documentation

The instructions for jumping game time in a currently running game were incorrect and misleading.

The documentation was corrected.

3.104 JTLS-2019-14146 WHIP Modifies All OPAREAs

The WHIP allows an operator to select any OPAREA in the game to modify, but the CEP will reject the order if the operator's side does not own the OPAREA. The WHIP should filter the list of OPAREAs to allow the operator to only select those which are owned by their side.

The JDSP has an attribute for the owning force side of an OPAREA, but the data was not being filled. The code was modified to fill this additional JDSP field, and the order was modified to only allow the selection of Operations Areas owned by the operator's side, unless the WHIP is a Controller WHIP (in which case all OPAREAs are valid).

3.105 JTLS-2019-14148 Crash Switching Air Mission To Psyop Jammer

The game crashed when a mission had its tasking/role switched to become a Psyops Jammer mission. When the acceptance message was written, it attempted to treat an integer value as a pointer and access restricted memory, resulting in a Segmentation Violation crash. This invalidates any checkpoint attempt at the time of the crash and necessitates a backup and replay of the model.

The use of the integer, which was the type of order, was replaced with the pointer to the order.

3.106 JTLS-2019-14150 Crash Rearming/Refueling During Airlift

The game crashed when a helicopter lift mission landed at the pickup location and attempted to rearm and refuel. The mission was checking for a unit in the vicinity to refuel from. All own side units within the collocated distance were gathered and then accessed. The crash happened during the access of the units by treating them as the wrong object type.

The code was modified to properly access the unit via the set.

3.107 JTLS-2019-14155 Truncated Combat System Names

The CCP density message truncates combat system names.

The field to display the combat system name was programmed for only 15 characters. The new combat system name length is 25 characters. Many other messages were found to have the same problem and were corrected.

3.108 JTLS-2019-14156 Simdebug Changing Shelter Priority

The Combat Events Program entered simdebug when attempting to change the shelter priority for a combat system.

Shelter priority is now established by the combat arms type, rather than for each combat system. The CEP code was correct. The order panel and messages were changed to match the CEP code.

3.109 JTLS-2019-14157 Auto Supply Calc CREW As Persons

The Automatic Supply Calculation in the DDS did not count combat systems with a combat system special capability of "CREW" as persons. It only counted "PERSONNEL". This effected daily consumption, addition consumption for combat and additional consumption for movement.

CREW was added as a cs_special_capability to the queries that count persons.

3.110 JTLS-2019-14159 Task for Civilian Air Traffic Missing Start Time

Civilian Air Traffic missions are not properly filling in their start time field in the tasks panel when the order arrive time is NOW or ASAP.

Civilian Air Traffic code uses separate code from typical air missions. This code was corrected to update the Task Start Time.

3.111 JTLS-2019-14160 WHIP Canceled Naval Formation Route

A naval formation was executing a movement order with multiple move tasks. The WHIP map properly displayed the entire movement route. A Cancel Formation order was sent to disband the formation which also stopped all vessels in the formation as expected. However, the formation movement route remained displayed on the map and could not be removed by reopening the map or restarting the WHIP.

In the routine that inactivates a naval formation, only the currently executing task was canceled. Only the first leg of the route was then removed from the map, leaving the remaining segments displayed. Because the formation no longer existed, all pending tasks should have been deleted. New logic was added to cancel all the formation's pending tasks, which caused the entire route to be removed from the map as well.

3.112 JTLS-2019-14162 Order Panels Sometimes Fail to Display

Order panels would sometimes fail to display when attempting to open. An exception was thrown in code that was trying to determine if the order field panel cache was corrupt.

The code was modified to check that the field the code was searching for was null, to avoid throwing this exception.

3.113 JTLS-2019-14164 ICP Online Help Updated

The ICP Java help was last updated in 2016 and was obsolete.

The ICP Java help was updated.

3.114 JTLS-2019-14165 Controller Read Order File Crash

The CEP crashed while processing a read order file sent by the Controller.

The crash occurred while the model was attempting to determine the Force Side that submitted the order in the file. The side number was correct for the Controller Side, but the associated name was not defined. A small change was made to assign a good name when the Controller submitted the order.

3.115 JTLS-2019-14166 Remove Unneeded Debug Printout

The WHIP contained an unnecessary debug printout for deleted Range Items.

The printout was removed.

3.116 JTLS-2019-14167 Minefield Number Goes Negative Crash

While a ground unit was clearing a minefield, another unit was firing artillery on the minefield to help clear the area. This situation caused the number of minefields to go negative. When the number of mines went negative, the area the minefield covered went negative and the next artillery mission caused the model to crash.

A land unit that is clearing a minefield will stop when it tries to clear the next mine if that will cause the number of mines to go negative.

3.117 JTLS-2019-14170 Attack Unit Moving Logic Error

A recent change in the model keeps a unit in the Attack posture even after it comes into contact with the enemy. When Lanchestrian Combat attrition is computed, the model needs to know whether the unit is currently moving or not. To accomplish this task for an attacking unit, the model attempted to look at the unit's current executing task. If the unit did not have a current executing task, the model generated a logic error.

This is no longer a logic error. It is perfectly normal for a unit in an Attack posture to have no current executing task.

The logic error was removed. The model was not changed in any way. If the unit does not have a currently executing task, the answer is that the Attacking unit is not moving.

3.118 JTLS-2019-14171 TBMCS Air Mission Notification Logic Error

The model generated a logic error when it attempted to notify TBMCS that a mission was delayed. The issue could not be investigated because the logic error had no access to the name of the mission.

The problem was not solved. This STR simply documents that the Logic Error now includes the name of the mission. The next time the logic error is generated, the development team will have the information needed to find the problem.

3.119 JTLS-2019-14173 Deleted Land Unit Tasks Route Not Updated

Several tasks were deleted from a land unit's task list, but the route for the unit was not updated.

The problem was corrected. The route is now changed after any change to a land unit's task list.

3.120 JTLS-2019-14176 Unit Refers To Destroyed Fire Mission Crash

The model crashed when a unit was attempting to adjust the time-weighted totals for Lanchestrian Combat. The unit referred to a destroyed fire mission causing the model to crash.

The situation that caused this problem was fairly complicated. As a result of a player entered order, Unit A scheduled an event to fire an artillery mission. Shortly after the event was scheduled, another player entered an order for Unit B to cancel several of its fire missions. The model inappropriately found and canceled not only Unit B's fire missions, but Unit A's fire mission for which the Fire event had not executed. The next time Unit A looked at its fire missions, it referred to the inappropriately destroyed fire mission, causing the model to crash. The logic error was corrected.

3.121 JTLS-2019-14180 ICP/DCP Copy Execution Host To URL Host

The ICP and DCP should be able to copy the execution host to the URL host field.

Modified code and added a menu-item that has ability to copy the Execution Host to URL Host.

3.122 JTLS-2019-14181 AAR Orders On Multi-Sided TRIPP

A Multi-sided TRIPP would attempt to send AAR orders through the OMA, which did not recognize the AAR order numbers as valid. TRIPP AAR orders should be sent to the aaras_report servlet running in the AAR Glassfish server.

An error that would reinitialize the URL to point to the OMA service, while setting the side for the order being sent for a multi-sided TRIPP, was corrected.

3.123 JTLS-2019-14182 Manage Attack Package Egress Route

The Egress Route selection button on the Manage Attack Package order defaults to reverse Ingress Route. Reverse ingress route is a legal option, but this is rare and should not be a default setting for packages.

The default option for Egress Route was changed to "No Egress Route".

3.124 JTLS-2019-14184 Divide By Zero Interpolating For Prob Hit

The model attempted to divide by zero when computing the probability of hit for a SAM Site against an air mission that was out of range.

The problem was caused because the database used had the optimal firing fraction for the SAM Site set to 1.0. There is nothing wrong with this value but no other databases to date have included this value. The divide by zero occurred because the code did not check that the air mission was within range of the SAM site before attempting to compute the Ph through interpolation. The code was changed to check whether the mission was out of range prior calling the interpolation routine.

3.125 JTLS-2019-14185 Completing Load Of Unit On Air Mission Crash

The model crashed while attempting to move extra supplies that were loaded from the mission's load task to the mission. The mission did not have a location to put the supplies.

The code now checks whether the mission is properly prepared to accept the extra loaded supplies. If not, the mission is properly prepared before moving the supplies from the completed task to the mission.

3.126 JTLS-2019-14186 Grid Reports No Longer Reports Shelters

The Grid Report was no longer reported the equipment shelters in a grid along with their contents. This oversight happened when moving from the JTLS 4.1 hex-based terrain to the grid system.

The code required to report equipment shelters was properly implemented.

3.127 JTLS-2019-14190 OTH-Gold Message Service Fails To Start

The OTH-Gold Message Service (othgms) would terminate prematurely on startup with an error that it failed to read the Country Code file and there was possible heap corruption.

The code that reads the Country Codes must first read the scenario's global values file to determine the default Country Code format for the scenario. This read was still expecting a single non-whitespace string for the game classification, when in fact the game classification can now be a longer string that includes spaces. The code was modified appropriately to handle the new game classification format. The library that includes the code is used by a number of JTLS-GO programs, but only those that actually read the Country Code data would be affected by this error.

3.128 JTLS-2019-14191 Cancel Supply Run Quick Menu Items

The player_cop, player_fed, and super_whip menus referenced the Manage Supply Run Tasks (MSRT) order for the Cancel Supply Run quick menu item. The correct order is the Cancel Supply Run (QCSR) order.

The erroneous menus were corrected.

3.129 JTLS-2019-14193 Negative Elevation Dual-Capable Terrain Grids

Grids treated as dual-capable may have negative average elevation but no average depth.

The code that handles terrain grid elevation and depth calculations for dual-capable grids correctly treated negative elevation values as depths, but a return statement was missing at the end of that block of code. Without that return statement, the code proceeded into a code block that assumed the grid was a land grid. This overwrote the average depth and set it to 0. It also re-sampled the grid for elevation and added any negative elevation values to the average elevation calculation, resulting in the negative elevations that were reported.

The missing return statement was added to correct the problem.

3.130 JTLS-2019-14195 XML File Read Not Assigning Flag

The SIP has the ability to parse XML files into structures which can then be used to extract required information. One attribute on the structure is used to indicate if the data is an XML node, with or without children, or an XML attribute. This structure attribute was not being set, making it impossible to step through the structure and identify attributes. This was not an issue until the implementation of a LOGFAS initialization file that required the SIP to load and store Country Code translations.

The code was modified to properly assign the structure attribute which indicates whether it is an XML node or an XML attribute. Though this error was uncovered in the SIP, the same code error existed in the Reformat Spreadsheet Program (RSP), and the Count Critical Orders (CCO) program. The code error in these additional programs was also fixed.

3.131 JTLS-2019-14196 Network Node Delays Not Working

Every node on river, road, and rail networks can be given a delay within the database. This capability was not working.

The code to stop an object on a network when it passes through a node with a delay was implemented.

3.132 JTLS-2019-14197 SIP Incorrect Active Sonar Warning

Active Sonars, which have a power attribute, were generating a warning indicating that it did not have an Electronic Intelligence Notation (ELNOT) value. Active Sonars cannot be picked up by JTLS-GO ELINT and therefore the warning should not be generated.

The warning no longer is generated for Active Sonar sensors.

3.133 JTLS-2019-14198 Unit Withdrew Toward Enemy Units

A unit entered withdraw posture after suffering losses in ground combat, but began moving toward the enemy units it had been fighting, instead of retreating away from them.

The model correctly computed the directions the withdrawing unit should move to escape the longest direct fire range of each engaged enemy unit. The logic then computed a simple arithmetic mean of all the directions to determine the best direction of escape. Depending on the locations of the enemy units in relation to the withdrawing unit, this methodology did not always result in a valid answer.

In this particular situation, the withdrawing unit was being attrited by two enemy units. Escape direction A was 330 degrees and direction B was 10 degrees. The arithmetic mean was 170. The correct direction was half-way between 330 and 10, which is 350 degrees. The arithmetic mean methodology was replaced with a trigonometric solution that now provides the correct retreat direction in all situations.

In addition, the algorithm was erroneously including friendly (same Side) units when considering the withdrawal direction. The code was corrected to consider only units that have permissive Rules of Engagement against the perceived Force Side of the withdrawing unit.

3.134 JTLS-2019-14200 DDS Order Text Corrected

There were grammatical and spelling errors in the DDS order help text, and some of the text was confusing.

The DDS order help text was rewritten or corrected for clarity and accuracy.

3.135 JTLS-2019-14203 GIS Tool: Lake Grids Have Zero Depth

Terrain grids that are classified by the GIS Tool as inland water (lakes and reservoirs) are handled as Ocean grids and must have an average depth value less than zero, but these grids had zero depth.

A grid classified as inland water was treated as an Ocean grid and received negative depth. A terrain grid classified as inland water covering an area that has no depth information is given a depth of -1 feet. Internally, the GIS Tool holds all elevations and depths in meters. It was verified that the -1 foot depth was converted correctly to meters.

It was discovered, however, that this information was lost when the terrain layers and grids were saved. The terrain grid depth is stored in meters, but the format for the depth field was incorrect and, if the grid had a depth of -0.3048 meters (= -1 feet), the depth was truncated and written out as 0.0. The error was eliminated by replacing the bad format with one with the proper precision.

3.136 JTLS-2019-14205 Aircraft Real World IDs Deleted

Aircraft Real World IDs and Ship Real World IDs are being deleted, even though they are referenced by Aircraft Class and Ship Unit Prototype records, respectively. This should not happen.

The related foreign key constraints for both the Aircraft Real World ID and Ship Real World ID fields included the "ON DELETE SET NULL" specification. This allows a user to delete either a Aircraft Real World ID record or a Ship Real World ID record, by nullifying the related child data in Aircraft Class or Ship Unit Prototype records.

Recreating the related foreign key constraints without the "ON DELETE SET NULL" fixes the issue. The users can simply reload their scenarios back into Oracle to include the fix in their database schemas.

3.137 JTLS-2019-14206 WHIP Drawing Tool Polygons To Polylines

If a polygon in the WHIP drawing tool is formatted with no fill, the polygon was turned into a polyline, which caused the last side to disappear.

Openmap automatically set the isPolygon attribute to false if no fill was applied to the polygon. The opacity of the fill is now set to the lowest non-zero value (1 out of 255) if no fill is applied.

3.138 JTLS-2019-14208 SVP Warning Correction Multiple Lines

SVP Warning 1453 has three corrections with exactly the same name. This invalidates the first two corrections - even if you select correction 1, correction 3 is implemented.

A duplicated name attribute value check was added to the stylesheet code for finding the duplicated correction names in the SVP-Template.xml file. All errors found as a result of this new error check were corrected.

3.139 JTLS-2019-14209 Rounding Error Occurs In DDS SVP Corrections

The automatic set parameter solutions for the Supply Categories of SUPs, TUPs and HUPs did not solve the SVP Warnings correctly. The corrective Supply Category amounts were set only to 4 significant fraction figures. Any residual amount of needed supplies beyond 5 significant fraction figures were not accounted for.

The rounding error in calculating the Set the prototype Supply Category amounts was corrected.

3.140 JTLS-2019-14212 Alert Displayed Far From Target

A supply target was attacked and damaged by artillery. The target had an associated unit that was over 100 km away. The alert displayed on the WHIP map indicated incoming artillery fire had occurred. However, the alert was displayed at the associated unit's location and not at the target's location. This situation was confusing because the attack actually occurred over 100 km away from the displayed alert.

The logic that generates the alert symbol when a target is the object of an attack always displayed the symbol at the location of the target's owning or associated unit. New logic was added to display the alert symbol at the target's location when the target is explicitly attacked and damaged. As before, if a unit is the object of an attack, the alert symbol displays at the unit's location. The damage report message must originate from the attacked unit or from the attacked target's owning or associated unit and still does so.

3.141 JTLS-2019-14214 Link16 Callsign Column Title

The title of the Callsign column in the Link16 Module's track summary table did not have an entry in the internationalization file, so it was not displayed correctly.

An entry has been created for the Callsign column in the WHIP's internationalization file.

3.142 JTLS-2019-14215 AAR/DDS Report Orders Fail OVP Check

Several AAR/DDS report orders failed the OVP check, because certain fields did not match the values a default order would have.

An OVP check was added for AAR/DDS orders, and the "side_selector" attribute, which is not needed for AAR/DDS orders, is now skipped.

3.143 JTLS-2019-14216 Mission Report BDA Section Error

A Mission Report (MISREP) for a completed OAS mission contained an error in the section that lists killed or damaged combat systems. The model attempted to display the Combat System Prototype system name for the combat system, but that attribute is no longer used in JTLS-GO.

The MISREP reports the killed/damaged items detected by mission sensors. In the JTLS-GO 5.0 series, killed/damaged items were listed by specific combat system names or by Combat System Prototype (CSP) - Combat System (CS) names, based on the probability of accuracy of the sensors carried on the mission. In the JTLS-GO 5.1 series, the CSP-CS name attribute was abolished in favor of actual (non-generic) combat systems. However, the BDA section in the MISREP still referred to the obsolete CSP-CS name.

To bring the model up to date, the code was corrected to refer to the CS Combat Arms Equivalent name or the specific combat system name, depending on the accuracy of the mission sensors. The Combat Arms Equivalent name is now displayed when the combat system is not specifically identified by the mission.

While correcting this problem, the logic that determines whether the specific combat system name or combat arms type is reported was discovered to be reversed. When the random number draw was less than the probability of accuracy, the combat arms equivalent name was reported when it should have been the specific combat system name. The code was corrected to report the specific combat system name when the random number is less than the probability of accuracy.

3.144 JTLS-2019-14217 Ships Without Auto Fire Capability

There are 3 database criteria that a ship must have in order to auto-engage with an enemy vessel: the SUP must permit auto-engagement (SUP Max Auto Engage), the victim ship must be a viable auto-engage target (SUP Max Auto Incoming), and the ship must have an SSM target capable of shooting a valid auto engage weapon (TW Auto Fire OK). Within the running model there are other criteria that matter, such as supplies, number of targets already being engaged, etc.

The model considered the first two database criteria early in the auto-engage logic and would then check the ROE against an enemy ship before considering the third database criterion. The process of checking the ROE involves first checking the ship's ROE, then checking if the enemy ship is in an OpArea and therefore the OpArea ROE, and lastly checking if the ship has an Enhance ROE criterion against the enemy ship.

Many ships that did not have an SSM capable of shooting a permitted weapon were going through numerous OpAreas to determine an ROE that would not matter, and that most of the OpAreas did not have a relevant ROE anyway. Both of these steps were considered inefficient.

The code was modified to check that a ship with an auto-fire capability (SUP Max Auto Engage) has an SSM capable of firing a valid weapon (TW Auto Fire OK) early in the auto-fire logic. In addition, if the ship passes the check when evaluating the ROE for a potential target the code now checks the ROE on any OpArea to determine if they are relevant before checking if the ship is in the OpArea.

3.145 JTLS-2019-14218 HLA Data File Missing Attribute

The HLA Interface Program reads a data file which is produced by the SIP and the CEP as part of its initialization process. The CEP version of the file was correct, but the SIP version did not contain the DIS enumerations for the Targetable Weapon and Aircraft Class data.

The SIP source code was modified to include the missing DIS enumerations.

3.146 JTLS-2019-14219 IMT Target Category Not Alphabetical

The Equipment Shelter target category does not appear alphabetically in IMT screens with Target Category Data Filter option.

When Aircraft Shelters were renamed to Equipment Shelters, the static_voc file was not updated to reposition the field alphabetically. This is only a cosmetic change and had not affect on data retrieval.

3.147 JTLS-2019-14221 Destroying Support Unit Crash

The model crashed when a unit with Air Defense sites, but which never had supplies for the Air Defense site, was destroyed. The model passed the Air Defense site target to another unit and attempted to determine who should support the site, based on who was providing the supplies to the destroyed unit. The destroyed unit never had supplies for the Air Defense site, and therefore could not determine who was previously supporting it, resulting in the crash.

The code was modified to handle the situation that a unit may not have been given supplies to support its air defense site, in which case the Air Defense site will not be assigned an explicit support unit but will draw supplies from its new owning unit.

3.148 JTLS-2019-14222 Controller Alter Max Allowable Sensor Speed

The database builder can set the maximum speed at which a sensor is allowed to detect to tens of thousands of KM/Day in the DDS. However, the Controller cannot alter this database parameter to any value over 2400 KM/Day.

The Controller order panel was changed to allow the Controller to set the maximum allowable Sensor speed up to 240,000 KM/Day.

3.149 JTLS-2019-14223 Air Mission Visual Sensor Inconsistency

There were several inconsistencies when visual sensors detect aircraft:

- *UAVs are assumed to have visual sensors.*
- *The mission's Intelligence Protocol Visual Sensor results in a perfect Identification Friend or Foe (IFF) result, but a visual sensor in the mission's default load does not.*
- *If the mission has a visual sensor in its load, the visual sensor gets two attempts at making a detection.*

Each of these issues was corrected.

- The database developer must ensure that UAVs are not given visual sensors as part of the specified aircraft load. All non-UAVs should be given Visual Sensors if appropriate. For example, a nuclear load may want to remove the Visual Sensors to represent the user of blackout screens. The JTLS-GO 5.1 repository was checked and no issues were found.
- Under all circumstances, Visual Sensor detections are automatically given perfect IFF results.
- The model no longer allows the IIP Visual Sensor to make detections. Again, the database builder should put Visual Sensors on the load that they want.

3.150 JTLS-2019-14224 SVP Missing Appropriate Corrections

Some SVP Errors and Warnings are missing Correction Options.

Correction Options were added to achieve consistency with other Error/Warning options.

3.151 JTLS-2019-14225 WHIP Reporting Missing --cac Switch

If the Apache host was unreachable, the WHIP would report to the user that the --cac command line switch was missing.

Exception processing was changed so the fact that the host is unreachable is correctly reported.

3.152 JTLS-2019-14227 Duplicate Values In WHIP Order Fields

The JXSR returned duplicate entries in some order fields, which are then displayed in the order panel.

The processing of JXSR order fill returns was modified to discard duplicate entries. This was particularly important for the Manage Link16 Structure order in which several Link-16 structure will have the same Network name but different Feed names.

3.153 JTLS-2019-14228 JCONVERT Tools And Help Menus Missing

The Tools and Help menus do not appear until a scenario is selected or the frame is resized.

The instance of Framework that calls setSize, setLocation and setVisible needed to change calling order. This was done.

3.154 JTLS-2019-14230 Transfer Target Issues

Several issues were discovered with the new Transfer Target order:

- *The capability to transfer extra supplies was limited to only Unit-to-Unit target transfers. Targets could be transferred between Units and HRUs, but only Units could request extra supplies in the transfer.*
- *When a Unit/HRU attempted to take a target from another Unit/HRU that did not own the target or attempted to give a target it did not own to another Unit/HRU, the Player task cancellation message was too generic.*
- *Bridge targets were not excluded from being relinquished or accepted. The Bridge Operations order, not the Transfer Target order, should be used to emplace or retrieve bridge targets.*

The capability to request extra supplies was expanded to include HRUs when giving or taking targets to/from another HRU or Unit. The unowned target task cancellation message was enhanced to include the names of the Units/HRUs taking, giving, or relinquishing a target. Bridge targets were removed from the valid target types list in the Transfer Target order panel and target list utility.

3.155 JTLS-2019-14231 Managing Link16 Networks Issues

The MANAGE LINK16 NETWORKS order did not have an option to show the properties of an existing network, as used for the other "Manage" orders. This order allowed the user to submit the order for a non-existent combination of network and feed name. Finally, object data in the OPM did not list their assigned Link16 network and feed names.

The model was changed to correct these reported issues. A show option was added, which lists the units and targets which were assigned to a specified Link16 network and feed. Order checks were added to prevent the user from making bad assignments. The Link16 network and feed assignments were added to the OPM.

3.156 JTLS-2019-14233 CEP Execution Screen Unexpected Characters

While the CEP was executing, unexpected characters were printed to the screen. They appeared during the event used to move a formation.

The unexpected characters were those used to format messages from the model. In this case, no message was being generated, but the code was still attempting to close out the message. A change was made to prevent the printing of these characters to the screen.

3.157 JTLS-2019-14235 SVP Null Values Display

The SVPR displayed null values for date and time when it ran the SVP for the first time, because the \$SCENARIO/<scenario>/verify file was empty and had not created a current error file yet.

The SVP code was changed to check the date and time variables. If they are null, they do not display on the title.

3.158 JTLS-2019-14236 Mine Laying Air Mission Wrong Location

A mine laying mission was ordered to perform multiple tasks, including a task to refuel and rearm at a specific location. The Refuel Unit field was left blank. When the mission performed this task, it tried to move to the location at zero latitude and zero longitude instead of the specified location.

While processing the multiple tasks in the order, the model was obtaining the refuel location from a different set of order fields than was used by this order panel. The order definition was changed to use the correct fields and missions were now sent to the correct location for that task.

3.159 JTLS-2019-14238 OTH-Gold Ship Types Updated

The list of available OTH Gold Ship Types was outdated, missing items, and inconsistent with the current OTH Gold specification.

The list of OTH-Gold Ship Types was updated within JTLS-GO to match the most recent specification. Data lists across the CEP, database, and files used by other programs were affected. Because a lookup table in the database has been changed, an SQL script has been included to modify that table with the new values.

3.160 JTLS-2019-14239 Detach Targets By Elements

The Detach Unit order allowed target types to be specified for inclusion in the newly detached unit. The implementation allowed only whole target entities to be specified, instead of elements (portions) from within targets (where applicable). The Player should be allowed to request the number of elements by specified target type.

The Detach Unit order was modified to permit the Player to specify the number of elements (minimum and/or desired) for each target category/subcategory requested from the parent Unit. The processing was changed to process portions of targets, splitting targets as needed, to meet the minimum/desired number of elements requested for the new detached unit.

3.161 JTLS-2019-14242 Speed Up Mission Effects Movement

Each time an air mission moves, the sensors and jammers that it owns compute the terrain grids that are covered. This is time-consuming, and improvements are needed to speed up the process.

The old logic computed the covered grids for each sensor or jammer. The new logic computes the covered grids for the largest range sensor or jammer. Then only this limited set of grids is considered when tagging the grids for each individual sensor or radar. This tagging process is accomplished from the largest range asset to the shortest range asset - each time reducing the limited set of grids being considered.

This change resulted in about a 15% increase in speed over a full day's example ATO cycle.

3.162 JTLS-2019-14243 Improve Gather Circular Grids

The process of determining which terrain grids are covered by a circle was inefficient.

The routine that determines whether a specific grid is covered by a circle only returned an answer of "Yes" or "No". The routine was changed to return an answer of "Yes" when completely covered, "Not.Complete" when partially covered, and "No" when not covered at all.

The grid collection algorithm can use this additional information to make smart decisions about higher layer coverage. If a grid is completely covered by the circle, then all higher layer grids which overlay the completely covered grid are also covered. In this specific case, no additional computation is required, resulting in a faster algorithm.

3.163 JTLS-2019-14244 Reformat Spreadsheet Controller Orders

The Reformat Spreadsheet Program (RSP) will not create Controller orders from a spreadsheet of Controller order fields.

The RSP was not properly processing Controller orders because the code was defined with the wrong Controller index value. It was changed to the correct value and now "sees" fields properly for a Controller order from an order spreadsheet.

3.164 JTLS-2019-14245 DSAs Associated With Air Missions

The Change Mission Parameters order allowed the user to change which Directed Search Areas (DSAs) were associated with an air mission. With this order, the user could add and delete the same DSA from a mission. This resulted in a confusing message listing the same DSA as being added and deleted from the mission.

The Change Mission Parameter order panel was modified to process the adds and deletes for DSAs in a single utility panel. In the old version, the additions were in one utility panel, whereas

the deletions were in a separate panel. By combining these two utilities, the user can no longer add and delete the same DSA from an air mission.

3.165 JTLS-2019-14246 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 major release (JTLS-GO 5.1.0.0).

The JTLS-GO documentation suite has been updated.

3.166 JTLS-2019-14249 Error Determining Network Object Class

The Scenario Data Client (SDC) crashed during the initialization of data from the JODA. The error message indicated that it was attempting to determine the specifics for a network object which was associated with a target.

When this crash occurred, the SDC was attempting to find the network object associated with a bridge target. This object should have been part of a road network. The error was tracked back to the place in the CEP where the bridge target was initialized on the JODA. Here, the initialization data had an invalid object type, so the subsequent data was corrupted. A change was made to properly initialize the object class and the problem was resolved.

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.

APPENDIX A. ABBREVIATIONS AND ACRONYMS

Terms are included in this Appendix to define their usage in JTLS-GO design, functionality, and documentation.

AAA	Anti-Aircraft Artillery
AADC	Area Air Defense Commander
AAL	Air-to-Air Lethality
A/C	Aircraft
ACP	Air Control Prototype
ADA	Air Defense Artillery
AEW	Airborne Early Warning
AFB	Air Force Base
AG	Air-Ground (Air-to-Ground)
AI	Air Interdiction
AIM	Air Intercept Missile
AIREF	Air Refueling
AKL	Area Kill Lethality
AMMO	Ammunition
AO	Area of Operations
AOC	Air Operations Center
APC	Armored Personnel Carrier
ARECCE	Armed Reconnaissance
ARTE	Air Route
ARTY	Artillery
ASC	Automatic Supply Calculation
ASCII	American Standard Code for Information Interchange
ASW	Anti-Submarine Warfare
ATC	Aircraft Target Category
ATGM	Anti-Tank Guided Missile
ATK	Attack
ATO	Air Tasking Order
ATORET	Air Tasking Order Retrieve Program
ATOT	Air Tasking Order Translator
AWACS	Airborne Warning And Control System
AZ	Altitude Zone

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

DPICM	Dual Purpose Improved Conventional Munitions
DS	Direct Support
DSA	Directed Search Area
DTG	Date Time Group
EC	Electronic Combat
ECM	Electronic Counter Measure
ECP	Engineering Change Proposal
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

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

LOGIN	Logistics Input
LOGREP	Logistics Report
LONG	Longitude
LOTS	Logistics Over The Shore
LR	Long Range
M&S	Modeling and Simulation
MAPP	Modern Aids to Planning Program
MB	Megabyte
MCP	Mobility Counter-mobility Prototype
MCR	Model Change Request
MG	Machine Gun
MHE	Material Handling Equipment
MIP	Model Interface Program
MOGAS	Motor Gasoline
MOPP	Mission-Oriented Protective Posture
MOSAIC	NCSA user interface software
MOTIF	X Window System graphical interface
MP	Maneuver Prototype
MPP	Message Processor Program
MSC	Major Subordinate Command
MSG	Message
MTF	Message Text Formats
MUREP	Munitions Report
MUSE	Multiple Unified Simulation Environment
NCSA	National Center for Supercomputing Applications (University of Illinois)
NEO	Noncombatant Evacuation Operations
NFS	Network File Server
NGO	Non-Governmental Organization
NIS	Network Information Service or Network Information System
NM	Nautical Mile
NTSC	Naval Telecommunications System Center
OAS	Offensive Air Support
OBS	Order of Battle Service (formerly UGU: Unit Generation Utility)
OCA	Offensive Counter-Air

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

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

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

APPENDIX B. Version 5.1.1.0 DATABASE CHANGES

STR [JTLS-2019-14238 OTH-Gold Ship Types Updated, Section 3.159](#) affected the list of OTH-Gold Ship Types within JTLS-GO. Because a lookup table in the database has been changed, an SQL script has been included to modify that table with the new values. Please see the procedure in Chapter 1, [Page 10](#), for instructions on how to correct your database for this change.

No other database changes were made for JTLS-GO 5.1.1.0.

APPENDIX C. Version 5.1.1.0 REPOSITORY CHANGES

The following changes were made to the JTLS-GO 5.1 repository.

C.1 Force Sides Added

- IRAN
- GCC

C.2 Combat Systems Added

- PRIMUS.155M_ART.(SP).MHVT
- ROBOT.PILOT_EQUIP-SP
- SHIP-BOMB_EQUIP-TO

C.3 Combat Systems Changed

- M1.240MM Changed Ammunition; it can fire from 203MM ammunition to 240MM ammunition

C.4 Sensors Changed

- APG63V1_AAD Range changed from 135km to 185km

C.5 AK Added

- BRIMSTONE_AK
- ZT6_AK

C.6 Jammers Added

- ALR66.ESM
- RED.COM.JAM
- SPS160.RDR.JAM

C.7 PH Added

- HRU_SHIP_PH
- ZT6_PH

C.8 PK Added

- HRU_SHIP_PK
- ZT6_PK

C.9 Sensors Added

- 101KSV.IRST_AAD
- AAQ32.FLIR_AGK
- APG63_AAD
- APS149.LSRS_AGR
- ASQ508.MAD_ASU
- CAE.MAD_ASU
- EORD31.FLIR_AAA
- EORD31.FLIR_AGK
- EOTS-86_AGK
- ES05_AAD
- ES05_AGK
- HAQ2.FLIR_AGK
- HF_AEC
- HL2_AGK
- HPS106_AGS
- KJ500_AAA
- KJ500_AEE
- KJ500_AGN
- KLJ-7A_AAD
- N036.AESA_AAA

- N036.AESA_AGK
- OLS50.IRST_AAD
- SKY-G.IRST_AAD
- SKY-G.IRST_AGK
- TYPE-1475_AAD
- VHF-UHF_AEC

C.10 SKL Added

- HRU_SHIP.BOMB
- ZT6_SKL

C.11 Aircraft Classes Added

- A29.SUP.TUCANO
- AH2.ROOIVALK
- AN30.CLANK
- AT6B.WOLVERINE
- C130R.HERCU.JP
- C2.KAWASAKI
- E6B.TACAMO.II
- EC225.SPR.PUMA
- EF.TYPHOON_AU
- EF.TYPHOON_DE
- EF.TYPHOON_ES
- EF.TYPHOON_GB
- EF.TYPHOON_IT
- EF.TYPHOON_SA

- F15DJ(2-SEAT)
- F15J.KAI
- F15SJ.EAGLE
- F27.ENFORCER
- G550.CAEW
- H6G.EW
- H6H.BADGER
- H6J.BADGER
- H6K.BADGER
- H6L.BADGER
- H6M.BADGER
- IL18B.COOT
- J11BH(NAVAL)
- J11BSH(NAVAL)
- J20.M.DRAGON
- J7D.FISHBED
- JAS39.GRIPEN-E
- KC390.EMBRAER
- KJ200.AWACS
- L159.ALCA
- M28.BRYZA
- MD11
- MH-60M.BLACKHAWK
- MI28N.HAVOC

- MI28UB.HAVOC
- MQ1C-ER
- MQ25A.STINGRAY
- P1.MPA_JP
- P3C.LSRS.ORION
- SAAB340B
- SU30M2
- SU30SM
- T1A.JAYHAWK
- T400.RAYTHEON
- TU142MR.BEAR-J
- TU95MS6.BEAR-H
- U125.HAWKER
- U4.GULFSTRM.IV
- UP1.MPA_JP
- UP3C.ORION_JP
- UP3D.ORION_JP
- UP3E.ORION_JP
- USH60K.SEAHAWK
- Y8.MASK
- Y8.MOTH(KJ200)
- Y9G.GX11.EW
- Y9JZ.ELINT
- Y9W_KJ500

- Y9XZ.GX10

C.12 Aircraft Loads Added

- 16ZT6
- 2PL15x2YJ91
- 2PL17x2YJ91
- 4AAMB4X4AAM3X3
- 4AAMB4X4AAM5X3
- 4CJ20
- 4PL15
- 4PL15X2PL12
- 4PL17
- 4YJ63
- 6CJ20
- 7YJ12
- 8ZT6
- 8ZT6X4MISTRAL-ATAM
- F15.KAI.DEF
- F27.ENFORCER.DEF
- G550.CAEW.DEF
- H6G.EW.DEF
- H6J.BADGER.DEF
- H6K.BADGER.DEF
- H6L.BADGER.DEF
- H6M.BADGER.DEF

- J11BH(NAVAL).DEF
- J20.M.DRAGON.DEF
- J7E.FISHBED.DEF
- JAS39.GRIPEN-E.DEF
- L159.ALCA.DEF
- MH60M.DEF
- MI28N.HAVOC.DEF
- P1.MPA.DEF
- P3C.LSRS.ORION.DEF
- SU30M2.DEF
- SU30SM.DEF
- TU142MR.DEF
- UP1.MPA.DEF
- UP3C.DEF
- UP3D.DEF
- UP3E.DEF
- Y8.MASK.DEF
- Y8.MOTH(KL200).DEF
- Y9G.GX11.EW.DEF
- Y9JZ.ELINT.DEF
- Y9W.KJ500.DEF
- Y9XZ.GX10.DEF
- A29.SUPER.TUCANO.DEF
- AH2.ROOIVALK.DEF

- AT6B.WOLVERINE.DEF
- E6B.TACAMO.II.DEF
- EC225.SUPER.PUMA.DEF

C.13 Aircraft Loads Deleted

- A10.CONF1
- A10.CONF2
- B2.CONF1
- B2.CONF2
- EA6B.CONF
- EF-18G.CONF
- EF2000.CONF1
- EF2000S.CONF1
- EF2000S.CONF2
- EF2000S.DEF
- F15C.CONF1
- F15E.CONF1
- F15E.CONF2
- F16C.CONF1
- F16CJ.CONF1
- F16CJ.CONF2
- JAS39.CONF1
- M2000-5.CONF1
- MIRAGEF1CR.CONF
- RAFALEC.CONF1

- SU24MP.CONF1
- SU24MP.CONF2
- SU27.CONF1
- SU34.CONF1
- SU34.CONF2
- SU35.CONF1
- SU39.CONF1
- SU39.CONF2
- TOGR4.CONF

C.14 Aircraft Loads Renamed

- T50.PAK.FA.DEF TO SU57.DEF

C.15 HUPs Added

- FLEET.EW.USV
- FLEET.M2.USV
- FLEET.MK19.USV
- FLEET.SEN.USV
- HARBOR.EW.USV
- HARBOR.M2.USV
- HARBOR.MK19.USV
- HARBOR.SEN.USV
- SEA.HUNTER.USV
- SNORKELER.BOMB
- SNORKELER.EW
- SNORKELER.SEN

- SNORKELER.WPN
- ULV.BOMB
- ULV.EW
- ULV.M2
- ULV.MK19
- ULV.SEN

C.16 Naval Units Added

- BLACK_US (BURKE.2A_M4_US CLASS)
- HAMILTON_US (LEGEND_US CLASS)
- HUDNER_US (BURKE.2A_M4_US CLASS)
- JAMES_US (LEGEND_US CLASS)
- KIMBALL_US (LEGEND_US CLASS)
- MANCHESTER_US (INDEPENDENCE CLASS)
- MIDGETT(WMSL757)_US (LEGEND_US CLASS)
- MONSOOR_US (ZUMWALT_US CLASS)
- OMAHA_US (INDEPENDENCE CLASS)
- SOUTH.DAKOTA_US (VIRGINIA CLASS)
- TRIPOLI_US (AMERICA CLASS)
- WILLIAMS.ESB4_US (MONTFORD.ESD_US CLASS)

C.17 Naval Units Deleted

- BUFFALO_US (L.ANGELES_NV_US CLASS)
- HOUSTON_US (L.ANGELES_NV_US CLASS)
- JACKSONVILLE_US (L.ANGELES_NV_US CLASS)
- PONCE_US (AUSTIN CLASS)

C.18 Small Boats Added

- FLEET_USV
- HARBOR_USV
- SEA.HUNTER_USV
- SNORKELER_USV

C.19 Supply Categories Added

- CL.V.AS-BRIMSTONE
- CL.V.AS-ZT6.MOKOPA

C.20 TUPs Added

- AMPHI.REC.HQ_CN
- AMPHIB.BN.HQ_CN
- AMPHIB.CO_CN
- ASB.CAB.HSC_US
- ASB.DISTR.CO_US
- ASB.FSC.AH64_US
- ASB.FSC.ARS_US
- ASB.FSC.ASLT_US
- ASB.FSC.GSAB_US
- BSB.FA.HSC_US
- BSB.FSC.155T_US
- BSB.FSC.MLRS_US
- CSSB.HHC_US
- CSSB.SMC_US
- CSSB.SPLY.CO_US

- FA.BNH.PLZ07_CN
- FA.BTY.PLZ07_CN
- FSC.155SP_US
- FSC.HIMARS_US
- HN5B(MP).BTY_CN
- MC.ATGM.BTRY_CN
- MC.CHEM.CO_CN
- MC.ENG.BN_CN
- MC.INF BN_CN
- MC.MAINT.BN_CN
- MC.SIG.CO_CN
- MEB.DISTRO.CO_US
- MEB.FMC_US
- MEB.FSC.ENG_US
- MEB.HHC_US
- MED.CO.MAR_CN
- MISL.BN.HQ_CN
- PLAMC.BDE.HQ_CN
- SCUBA.SQDN_CN
- STB.HHC_US
- TACRON.DET_US
- TACRON.HQ_US
- ZTD05.TKBNHQ_CN
- ZTD05.TNK.CO_CN

C.21 TUPs Deleted

- ARFOR.SPT_US
- ARSOFSPPTBN_US
- ARSOFSPPTBNHQ_US
- COSCOM_US
- HDDISCOM_US
- HDDISCOMAD_US
- HDDISCOMHQ_US
- HDMAINSPTBNAD_US
- HDMAINSPTBN_US
- HDMBFSB_US
- HDMBFSBAD_US
- HDTBFSB_US
- HDTBFSBAD_US
- SFSPTBNSVCCO_US
- SUPT.GRP.HQ_US

C.22 Targetable Weapons Added

- HRU.SHIP.BOMB
- ZT6.MOKOPA

C.23 Units of Measure Added

- ZT6.MOKOPA

C.24 Aircraft Renamed

- T1A.HAWKER400 to HAWKER400
- T50.PAK-FA to SU57(T50PAKFA)

C.25 Verified Status

- Verified that AIR_VISUAL_AAA and AIR_VISUAL_AGR Sensors is in all Aircraft Default Loads for FW and RW Aircraft
- Verified that AIR_VISUAL_AAA and AIR_VISUAL_AGR Sensors were not in any UAV Aircraft