JTLS

Version Description Document

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DEPARTMENT OF DEFENSE
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JOINT THEATER LEVEL SIMULATION
(JTLS 4.1.12.0)

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ABSTRACT

The Joint Theater Level Simulation (JTLS®) 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 Version Description Document (VDD)* describes specific features of the Version 4.1.12.0 delivery of the configuration-managed JTLS software suite.

JTLS 4.1.12.0 is a maintenance release of the JTLS 4.1 series that includes code modifications that represent corrections to known Software Trouble Reports (STRs), which 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 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 Version Description Document* (VDD) describes Version 4.1.12.0 of the configuration managed Joint Theater Level Simulation (JTLS®) software suite. JTLS 4.1.12.0 is a Maintenance delivery for the JTLS 4.1 series of releases. JTLS 4.1.12.0 includes the entire JTLS suite of software and the SDBKOR41 Standard Database that supports a realistic scenario based on the current Korean Peninsula theater of operations.

Detailed descriptions of Engineering Change Proposals (ECPs) and minor model enhancements implemented for this release are provided in Chapter 2.0. Chapter 3.0 summarizes all of the problem corrections made since the previous official release of JTLS. Finally Chapter 4.0 lists all known problems that have not been fixed. Each of these known issues includes a description of the problem's impact on execution of JTLS and suggestions for avoiding or working around the issue to reduce the impact on the operational use of JTLS.

The format of the database, as well as the suggested default data, as contained the SDBKOR41 scenario, has not changed since the release of JTLS 4.1.11.0.

JTLS 4.1.12.0 executes on the Red Hat Enterprise Linux Version 5 or 6 64-bit operating systems. The Web-Hosted Interface Program (WHIP®) user workstation interface can be executed from any Java-compatible Web browser available on any operating system.

1.2 INVENTORY OF MATERIALS

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

1.2.1 Obsolete/Outdated Documents

No documents have been removed from the JTLS documentation suite for this release.

1.2.2 Unchanged Documents

The following documentation is provided for this release:

- *JTLS Analyst Guide* (JTLS Document 01, Version 4.1.12.0)
- *JTLS ATOT User Guide* (JTLS Document 03, Version 4.1.12.0)
- *JTLS Controller Guide* (JTLS Document 04, Version 4.1.12.0)
- *JTLS Data Requirements Manual* (JTLS Document 05, Version 4.1.12.0)

- *JTLS DDS User Guide* (JTLS Document 06, Version 4.1.12.0)
- *JTLS Director Guide* (JTLS Document 07, Version 4.1.12.0)
- *JTLS Executive Overview* (JTLS Document 08, Version 4.1.12.0)
- *JTLS Installation Manual* (JTLS Document 09, Version 4.1.12.0)
- *JTLS WHIP Training Manual* (JTLS Document 10, Version 4.1.12.0)
- *JTLS Player Guide* (JTLS Document 12, Version 4.1.12.0)
- *JTLS Standard Database Description* (JTLS Document 14, Version 4.1.12.0)
- *JTLS Software Maintenance Manual* (JTLS Document 15, Version 4.1.12.0)
- *JTLS Technical Coordinator Guide* (JTLS Document 16, Version 4.1.12.0)
- *JTLS Entity Level Server User Guide* (JTLS Document 19, Version 4.1.12.0)
- *JTLS Federation User Guide* (JTLS Document 20, Version 4.1.12.0)
- *JTLS C4I Interface Manual* (JTLS Document 21, Version 4.1.12.0)
- *JTLS DDS Training Manual* (JTLS Document 23, Version 4.1.12.0)

1.2.3 Updated Documents

- *JTLS Version Description Document* (JTLS Document 17, Version 4.1.12.0)

1.2.4 Delivered Software Components

JTLS 4.1.12.0 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. These software components are included with this release:

- Database Configuration Program (DCP)
- DDS User Interface (DDS)

In order to use the DDSC, the GlassFish domain must be re-saved as follows:

1. In the DCP, stop the GlassFish server.
2. Change the execution host and then change it back.
3. Save (After the save, the server will be left running).

- Combat Events Program (CEP)
- Scenario Initialization Program (SIP)
- Interface Configuration Program (ICP)
- Reformat Spreadsheet Program (RSP)
- Database Development System (DDS)
- Terrain Modification Utility (TMU)
- JTLS Symbols Application (JSYMS)
- Lanchester Development Tool (LDT)
- ATO Translator Program (ATOT)
- ATO Retrieval Program (ATORET)
- Convert Location Program (XCONVERT)
- 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:
    a. Apache Server, version 2.4.12 (APACHE)
    b. JTLS XML Serial Repository (JXSR)
    c. Order Management Authority (OMA)
    d. Synchronized Authentication and Preferences Service (SYNAPSE)
    e. XML Message Service (XMS)

f. Total Recall Interactive Playback Program (TRIPP)

In order to use After Action Reports in the TRIPP the GlassFish domain must be re-saved as follows:

1. In the WSM, stop the AAR GlassFish server.
2. In the ICP, on the GlassFish tab, deselect, and then reselect GlassFish.
3. In the ICP, save.
4. Restart the AAR GlassFish server.

- Entity Level Server (ELS)
- JTLS Operational Interface (JOI)
- KML Operational Interface (KOI)
- TBMCS/ICC Interface Program (JTOI)
- JTLS Interface Network Navigator (JINN)
- JTLS Order of Battle Editor (JOBE)
- Technical Control Tool (TechTool)

Instructions for installing JTLS 4.1.12.0 are provided in the *JTLS Installation Manual*. Installing a previous version of JTLS prior to installing JTLS 4.1.12.0 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.

1.2.5 Released Databases

This release includes these sample unclassified databases:

- The scenario developed as the Korea Standard Database and named SDBKOR41 is a large-scale, seven-sided scenario database reflecting the approximate starting positions of units involved in the Korea Peninsula theater of operations. This example scenario was developed using unclassified data sources and is consequently not completely accurate. Discrepancies among actual units and their locations are not detrimental to the intended purpose of this database, which is to provide a recognizable and realistic scenario that demonstrates the simulation capabilities and supports JTLS training.

- The scenario DEMSDBKOR41, which is a reduced version of SDBKOR41, has **not** been updated from JTLS 4.1.11.0 for this release and contains the most current engineering level data from the SDBKOR41 scenario.

- The scenario blank40 is the SDBKOR41 database, with all force structure data removed, can be used as a framework for building your customized database. This database has been updated and contains the most current engineering level data from the SDBKOR41 scenario.

1.3 INTERFACE COMPATIBILITY

1.3.1 Support Software

JTLS 4.1.12.0 requires the following versions of support software, including operating systems, compilers, scripting utilities, database tools, transfer protocols, and display managers.

- Operating systems for the model:

  Red Hat Linux Enterprise Edition Version 5 or 6 (ES), 64-bit architecture.

  CentOS Linux Version 5 and 6

  Security Enabled (SE) Linux must not be enabled on systems used to execute JTLS 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 is currently not authorized.

  When running JTLS on any Version 6 Red Hat Linux Enterprise Edition system, do not run the SYNAPSE and APACHE services on the same machine. This is a known issue, and the development team is continuing to find a solution, so that this restriction will not be necessary.

  The Development Team has started to investigate the impact of Version 7 Red Hat Linux on JTLS. This testing is not complete; therefore, JTLS 4.1.12.0 is not approved for use with Version 7 of Red Hat Linux.

- There are no restrictions on the operating system for client workstations, except that the operating system must have a Java-enabled web browser. JTLS 4.1.12.0 client software has been tested on the following operating systems:

  Red Hat Linux Enterprise Edition Version 5 and 6

  CentOS Linux Version 5 and 6

Windows Vista, Windows 7, or Windows 8 can be used only if the workstation is an external HTTP client of the simulation network.

- Java 1.7.0 Update 80 for model server machines.
- Java 1.8.0 Update 74 for client workstations.

Oracle has announced that Java 1.7.0 Update 80 is the last public update for Java 7. Java 1.7.0 Update 80 has expired as of July 15, 2015 and can no longer run the WHIP, TRIPP and DDSC via a web browser on the model server machines.

Server machines cannot be upgraded to Java 8, because the Glassfish server software will not run under Java 8. To work around this problem, three new scripts have been added to run the WHIP, TRIPP and DDSC from the command line on model server Linux machines. Typing either "whip", "tripp", or "ddsc" in a terminal window will print the usage instructions.

Client machines must be upgraded to Java 8 Update 74 to run the WHIP, TRIPP, and DDSC.

- JTLS 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 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 code. It is not necessary to have a SIMSCRIPT compiler to execute JTLS, because all JTLS 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 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. This compiler is used only by U.S. Government organizations that can obtain source code and intend to re-compile any of the JTLS 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. This compiler is used only by U.S. Government organizations that can obtain source code and intend to re-compile any of the JTLS HLA component programs. The C++ Compiler version delivered with the supported versions of Red Hat Linux ES is sufficient.

- The JTLS DDS (Database Development System) application uses these open source libraries, which are delivered with JTLS:

  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-2.0HLA Compliance

- KML Operational Interface (KOI)

  The Keyhole Markup Language (KML) Operational Interface (KOI) server utility enables the model to feed operational simulation data to any version of Google Earth™. The display capabilities and data transfer features of this terrain viewer are sufficiently robust to be used as a base-level operational interface. Operational Players who may be restricted from using 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 C4I Interface Manual* describes requirements and procedures for using the KOI capabilities.

1.3.2 Special Consideration for the JTLS Air Tasking Order Translator (ATO-T)

The ATO-T executes in two modes:

- In the basic mode, one or more files containing the translated orders is created and the Controller is responsible for submitting an appropriate READ ORDER FILE Order that submits these orders to the model.

- In the advanced mode, the ATO-T connects to the Oracle-based Scenario Database Repository (SDR) and places the translated orders into the appropriate Order Entry Client (OEC) tables. The OEC is responsible for submitting the orders to the model.

The SIMSCRIPT and Oracle libraries needed to support both ATO-T modes are delivered as part of the JTLS software package with the permission of CACI, Inc and Oracle Corporation. The necessary SIMSCRIPT libraries are released in the ~/bin_support/Linux64/simscript directory. The Oracle libraries are released in the ~/bin_support/Linux64/oracle directory.

To run the advanced mode, users must have access to an Oracle server. Users must obtain, install, and configure the most current Oracle Full Client to use the ATO-T in the OEC mode.

1.3.3 JTLS High Level Architecture Compliance

The JTLS 4.1.12.0 release is fully High Level Architecture (HLA) compliant, and includes all the programs required to run JTLS in an HLA mode. JTLS has moved to a new Federation Object Model (FOM) located in the $JGAME/data/hla directory. Federation testing of JTLS is not complete, but some initial tests with CAE's Gefechts-Simulation system (GESI) have been accomplished. Future plans include expanding the capabilities to fully establish the GlobalSim Federation.

The HLA RTI (Run Time Infrastructure) executive program (rtiexec) recommended for use with this release is RTI-NG-Pro-v7.0 or Pitch pRTI Evolved 4.4.2.0. However, these programs are not included in the JTLS 4.1.12.0 delivery. Users may obtain a full installation package of the RTI software from either vendor: Raytheon Company (http://www.raytheon.com) or Pitch Corporation (www.pitch.se). 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

1.4.1 Database Upgrade to JTLS 4.1 Series

No database structure differences exist between JTLS 4.1.12.0 and any previous 4.1 series database.

There are no changes between the database structure in JTLS 4.1.11.0 and JTLS 4.1.12.0. There are no special requirements to upgrade your database for JTLS 4.1.12.0.

To upgrade your previously installed and modified JTLS 4.1.5.0 scenario or earlier for JTLS 4.1.12.0, you must unload and reload your scenario. This will recreate the modified stored procedures, database triggers, etc. Failing to do so will cause issues in DDS operations, such as renaming, copying, and deep copying existing records.

If you are upgrading to JTLS 4.1 from JTLS 4.0 or earlier, you must unload and reload your scenario after the modification is completed.

The JTLS Default Symbol Set has not changed since the initial delivery of JTLS 4.1.0.0, If this version of JTLS is your first JTLS 4.1 series installation, then the Default Symbol set must

propagated to any of your scenarios that originated under JTLS 4.0 or any previous version. Use the procedure that follows. You should not make any modifications to the Default Symbol Set.

Use this procedure to start the JSYMS program to update the Default Symbol Set used by one or more scenarios.

1. Enter the command "jsyms --edit-default" from a command prompt window. Do not use the JTLS Menu > Database Menu for this purpose. This message appears:

   "!!! JSYMS Allows Editing and Saving the Default Symbol Set."

2. Select the Default Symbol Set from the drop-down menu and select OK.

3. Select Symbols from the menu bar, and select Save to update all scenarios that use the Default Symbol Set.

4. Close JSYMS.

5. Use the JTLS Menu Option 1 > 1 > 6 (Load Symbols) to load the current Default Symbol Set to your scenario account in the Oracle database.

1.4.2 Database Upgrade from JTLS 4.0 or Earlier

Users who currently possess a JTLS scenario (ASCII file set) compatible with a version earlier than Version 4.1.0.0 can use this recommended modification procedure after installing this new version of JTLS:

1. Create a new Oracle account for the scenario.

2. From the new JTLS account, load the scenario ASCII files to the newly created Oracle account.

This process creates the JTLS schema that matches the previous JTLS version. After all data are loaded to the database tables, the process modifies the schema to match the current JTLS version. For JTLS 4.1, this process supports JTLS 3.0 (or higher) series scenarios only. If your scenario version is older than 3.0, the scenario must be upgraded to Version 3.4 first, by using the JTLS 3.4 version upgrade process. Consult Section 1.5.2 of the *JTLS 3.4.0.0 Version Description Document* for details and procedures.

JTLS users must consider that the automatic modification program inserts default values to the new database fields. Also, a new JTLS version may use previously existing data fields in a different way. Consult the appropriate *JTLS Version Description Document* to identify data fields that must be updated. The Database Modify program is the first process to use to update your databases to the new JTLS version. Changing the values in new or changed data fields is equally important.

The JTLS scenario/database modification process requires a full Oracle Client version 10.2.0.5.4 or higher installation.

1.5 INSTALLATION

1.5.1 Installation Instructions

The *JTLS Installation Manual* included in the documents compressed TAR file that is part of this JTLS delivery provides detailed instructions for installing a new version of JTLS.

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 JTLS applications. The Oracle Instant Client is not sufficient for JTLS 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. For the 64-bit version of JTLS, a 64-bit Oracle Client installation must be used. The JTLS scenario/database modification process also expects 10.2.0.5.4 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. 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 (10.2.0.5.4 or higher - including 11g XE) running on any Oracle-certified database server platform.

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

Refer to Chapter 5 of the *JTLS Installation Manual* for additional details pertaining to the Oracle installation.

1.5.3 Disabling Certificate Authority

Keeping with high security standards, R&A has opted to sign its web-enabled applications with a certificate from the COMODO Certificate Authority (CA). It uses the Public Key Infrastructure (PKI) to validate the digital signature. The PKI attempts to validate the certification on COMODO's servers via the Internet. Because of security issues and the expiration of versions, it is strongly recommended that Web Start technologies be signed by a CA to validate that an application being run comes from a trusted and registered source under the PKI.

Local area networks, intra-nets and standalone systems that have no outside connection to the Internet must configure their installation to disable certificate revocation checks. If this step is not taken under a closed environment, the JTLS web enabled applications will experience a significant delay in start up.

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

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

Navigate to the ‘Advanced’ tab and scroll down to the ’Perform certificate revocation checks on’ heading. Select the ‘Do not check (not recommended)’ radio button and click ‘OK’. The image below illustrates the corresponding selection in the Control Panel.

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

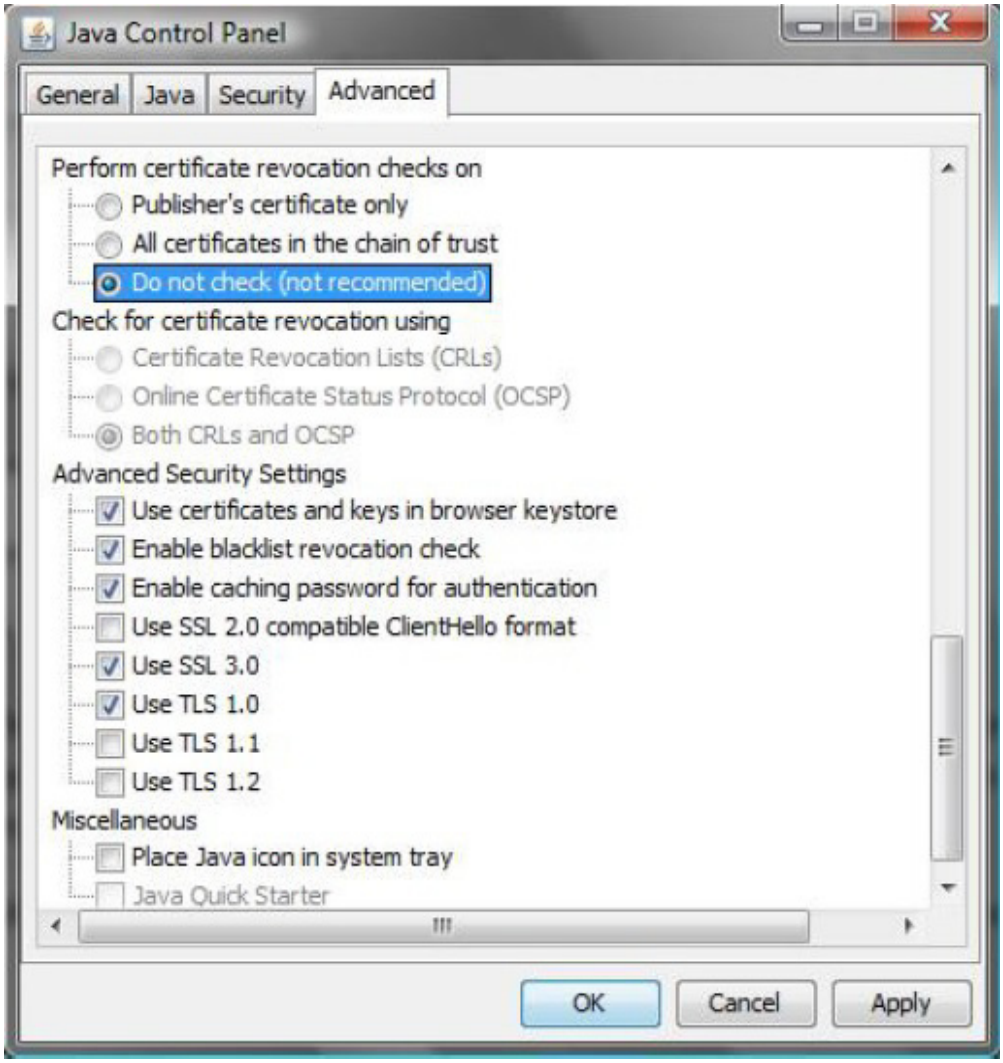

Figure 1.1 Control Panel

2.0 MINOR MODEL ENHANCEMENTS

This chapter summarizes model capabilities added to JTLS 4.1.12.0 as a result of implementing minor Engineering Change Proposals (ECPs). No major design related ECPs are delivered with JTLS 4.1.12.0.

2.1 JTLS-2016-12576 Add Row Coloration to OPM Tables For Easier Readability

Summary of Model Change Request

It can be difficult to examine a single row of data within the OPM tables because there is no easy way to highlight the row of interest as you scroll across the screen.

Design Summary

This same issue existed in the AAR Viewer reports and was solved by setting formats within a stylesheet to alternate the color of rows and to highlight a row when the cursor was over it. This concept was copied and applied to the OPM tables.

3.0 SOFTWARE TROUBLE REPORTS

Software Trouble Reports (STRs) describe software code errors that have been discovered by JTLS users or developers and have been corrected. The following STRs have been identified for this JTLS Maintenance release.

STRs that remain outstanding from previous JTLS versions are listed and described in Chapter 4.0.

3.1 JTLS-2016-12551 Crash While Moving Naval Formation Onto Game Board

The model crashed when a naval formation attempted to move onto the JTLS game box. Prior to the crash, the formation was located off of the designated play box.

The Combat Events Program (CEP) crashed because the code was using the wrong location to access hex information. The code was using the previous location of the center of the naval formation. It should have been using the new location to access the hex information. The crash was a code error, which occurred simply because the formation moved from a non-hex based location to a place which occupied a hex.

3.2 JTLS-2016-12552 OPM Incorrect Time Between Displays

The Online Player Manual (OPM) does not correctly show the database parameter called TIME BETWEEN DISPLAYS.

The program was reading in the database parameter and then converting the value to minutes. This was originally correct, but when the OPM was provided the capability to display all duration fields in any unit of measure decided but the automatic conversion of this parameter into minutes should have been removed. The data is read in using the duration default of decimal days and the OPM now correctly converts this data into the user selected OPM unit of measure.

3.3 JTLS-2016-12554 Warning 1223 For Long.Indirect Weapons

The Scenario Verification Program (SVP) was not producing Warning 1223 for Tactical Unit Prototypes (TUPs) that had combat systems identified with attrition type Long.Indirect. This warning indicates that a unit using the TUP will not be allowed to fire because the TUP had no caliber specified.

The code was modified for both TUPs and Ship Unit Prototypes (SUPs) to include Long.Indirect attrition type weapons in the code for warning 1223.

3.4 JTLS-2016-12555 Apache HTTP Server Latest Version

Apache HTTP Server version 2.4.12 has known security vulnerabilities.

The Apache HTTP Server was upgraded to the latest version, 2.4.18.

3.5 JTLS-2016-12556 TRIPP Can See WHIP Player Orders

In the order group editor in the TRIPP, WHIP player orders were visible.

The TRIPP order group editor code was modified to hide WHIP orders.

3.6 JTLS-2016-12557 IMT Scroll Bar Disappearing

The Information Management Tool (IMT) supports a "frozen" column. This column is the index of the IMT, such as a Unit name. When this column was the only column visible, the scroll bar would disappear from the IMT.

Code was added to the IMT to handle the situation in which the "frozen" index column is the only column visible.

3.7 JTLS-2016-12558 Unit Track Blocks Not Present In OPM

A unit can be assigned a JU Number, a Start and End Target JU Block, and a Start and End Track Block. These are all database items, and can also be modified by the Controller. The only one of these five attributes to appear in the OPM in the JU Number.

The code that generates the OPM pages for individual units was modified to include the Start/End Target JU Block and the Start/End Track Block data. This was added to a table, in which the JU Number also now appears. By moving the JU Number, it helps centralize the Link-16 track data associated with the unit. In order to accomplish the appearance of the table to highlight the difference between the two sets of blocks it was necessary to modify the code that generates tables within the OPM.

3.8 JTLS-2016-12559 TBMCS Errors Not Included In SVP Totals

The SVP breaks out errors and warnings by group type, and it lists the number of errors and warnings in each group type as it finishes processing the group. However, TBMCS errors are not included in any of the existing groups and therefore, though generated, do not appear in the group and total error/warning counts.

A group was added to the SVP code to track the number of TBMCS errors and warnings, and to display those numbers to the screen when processing the TBMCS checks.

3.9 JTLS-2016-12560 Long HRU Detection Times - Checkpoint Crash

The current methodology for calculating the detection time of an HRU allows every unit that is overlapping the HRU to influence the time by applying a IIP US SOF DETECTION RATE multiplier. For small units this multiplier has a value greater than 1.0 in Standard Database, whereas larger

units have a multiplier generally less than 1.0. Thus a group of small units will take longer to detect an HRU than a single large unit with the same accumulative personnel count.

In addition, when there are a large number of small units covering an HRU, these individual multipliers raise the detection time to an unrealistically large number, over 1+E43. This value is out of the range that Simscript will handle, and as a result if a checkpoint is read with this detection time in it, and another checkpoint taken, the second checkpoint will be corrupted, containing unrecognizable characters in the time value.

The algorithm to detect an HRU has been re-worked so that it is the number of total personnel covering the HRU, vs the number of personnel in each individual unit, that determines a single IIP US SOF DETECTION RATE multiplier value. This should remove any penalty or benefit from breaking down units into smaller units or combining them into larger units when searching for HRUS. If a scenario has a large number of small units this may cause HRU detection times to grow longer or reduce substantially depending on the IIP US SOF DETECTION RATE data.

3.10 JTLS-2016-12561 Determining Overlap Of Polygonal DSAs Not Correct

At the completion of a Reconnaissance mission that has DSAs assigned, the model will generate a report on those DSAs that were covered but for which no objects were detected. This is useful intelligence information since it indicates the possibility that an object may have moved. However, the algorithm that determines whether an air mission overlaps a polygonal DSA is wrong and produces numerous false hits.

The error was that the lines of the polygon were being checked for the closest approach to the orbit point, or orbit path. What should have been checked was the line segments, which don't extend forever.

3.11 JTLS-2016-12562 Self Reporting Ships Being Assigned Track Numbers

A problem existed with Link-16 capable ships detecting and assigning tracks to other friendly Force Side Link-16 capable ships. Since all Link-16 capable sides share their Link-16 detection information this resulted in the JOI receiving the detected ship's self-reporting JU Number, the source JU Number of the ship doing the detection, and the track assigned by the ship doing the detection. Since the JOI had the source and track data, it over-rode the self-reporting JU Number and assigned the track on the COP.

The CEP code was modified to not assign a track if the detected object has a JU number and the force side to which it belongs is marked as being Link-16 capable.

3.12 JTLS-2016-12563 Mission Destroyed While Going For Fuel Causes Crash

An air mission that had been going for Base Fuel was destroyed while still in flight. This left an attribute, which indicates where the mission is going for fuel, still set but changed the posture of the mission to Destroyed. This mission still existed in the game and was associated with a

Remove Mission From Game event. This event permits the mission to be kept around and appear on the WHIP ATO Viewer until a period of time passes.

A JODA Download was then forced to investigate a separate issue. The download code noted that the attribute which indicates where the mission is going for fuel was set, and therefore attempted to access the name of the entity. The code first checked if the mission posture was Base Fuel, and since it wasn't attempted to access the pointer as an air mission. Since the mission was in Base Fuel posture before its destruction this pointer was a unit and not an air mission. Attempting to access a pointer as the wrong type resulted in a CEP crash.

It should be noted that this issue would only arise if a JODA Download was attempted while the mission existed. Recovering from a checkpoint, and getting the subsequent JODA download would not have triggered the problem because the air mission data saved with the Remove Mission From Game event does not include the refuel pointer attribute. The code fix was to zero out the attribute when the air mission was destroyed.

3.13 JTLS-2016-12564 Self-Reporting Link-16 Data Not Received For Ships

Keen Edge was a coalition exercise with both Japanese and US vessels and air missions using Tadil-J reporting. The Link-16 detection information was collected by the JOI and forwarded to the COP. The JOI itself was being run as a US side collection tool. It was not receiving, and therefore could not forward, the information on Japanese self-reporting air missions.

The problem was tracked down to the JODA updates, which were sending the self-reporting information with a delivery mask that only included the Controller and the Japanese side. The code that performed this was modified to send the update for every side with Link-16 capability and the Controller.

3.14 JTLS-2016-12565 OTH-Gold Tracks With Duplicate UID Field Missing Tracks

When the JOI was started with a recovery file option, it did not assign unique track IDs for newly created objects. A recovery file was used for the exercise to provide more descriptive names for ship objects. Though unique track IDs are assigned by the JOI and also saved in the recovery file, the JOI did not assign unused track IDs for newly created objects. Two objects with the same UID results in one of the objects not being displayed on the COP.

A code error was found and modified to correct the problem. When using a recovery file as a start option, it will use the last track ID specified in the file as the starting number and assign sequential numbers as new objects are created.

3.15 JTLS-2016-12566 TBMCS Link SVP Errors

The SVP is not producing errors and warnings when using a tbmcs_int.txt file.

The TBMCS errors and warnings generated in JTLS 4.11.0.0 are only produced using the "alter" database function of the SIP. This was further complicated by the omission of the SVP xml templates for the generated errors.

The code was modified to always produce the desired errors and warnings provided the special file tbmcs_init.txt had been generated and was in the scenario game directory. The error and warning templates were also recovered and the SVP_templated file was updated.

3.16 JTLS-2016-12567 Progressive Unit Deletions From Open IMT Screen

In a WHIP with an open IMT screen showing all units known to a side, several of the units will be deleted as game time progresses. As long as this IMT screen is not closed, more and more units get deleted as the game keeps going and updates are received.

A routine included in the JXSR code, which handles unit updates from the CEP, was incorrectly applying a side parameter to update filtering. This routine was comparing the update unit by using all side perceptions of the update. This was incorrect. The update unit should only be compared with the known set of units by using the perception side of the WHIP that made the original request. For a "delete" update that matches any of the sides of the update, this error would cause the JXSR to remove the object in the data transferred back to the IMT.

The JXSR routine was modified to include only the perception side of the requesting WHIP when applying the request filters for updates.

3.17 JTLS-2016-12568 CEP Crash - NONE Resupply Category Setting

The CEP crashed while running the routine UPDATE.PERSONNEL.COMBAT.SYSTEMS, when personnel are not drawn from a Supply Category. This is legal and the CEP should not crash in this situation

The routine assumed that the unit had personnel supplies which also needed to be updated. This assumption was removed from the routine. If personnel are not drawn from a Supply Category, the logic to update the unit’s corresponding supplies is skipped.

3.18 JTLS-2016-12569 ELS Crash For Transfer And Civilian Air Missions

When a Transfer mission was flown, the ELS crashed while allocating entities for the aircraft in the mission. The same crash also occurred for Civilian Air Traffic missions which transfer aircraft from one location to another.

The crash occurred because no appropriate aircraft were available to assign to the mission. The problem traced back to the sequence of events performed in the CEP. In the aggregate model, transfer missions are resourced and take off from an initial squadron. The aircraft were then reassigned to belong to a different squadron, located at their destination.

This squadron reassignment was occurring before the ELS had created the entity-level air mission. As a result, the ELS crashed because no appropriate aircraft entities were ready to fly from the initial squadron. Changes were made to ensure that the ELS creates the new air missions before any squadron reassignment was performed. These changes allowed the ELS to successfully perform missions that transfer aircraft to new locations.

3.19 JTLS-2016-12570 Duration Fields Not Displayed In Order Utility Table

Duration fields were not displaying in the utility panels table.

The formatting for the renderer of the utility panels table was not set. This problem was corrected.

3.20 JTLS-2016-12571 Closing Confirmation Dialogs Behaves Like "Yes" Or "Ok"

Closing some WHIP and DDSC confirmation dialogs with the window's Close button (the "X" button generally displayed in the top right corner) behaves as if "Yes" or "Ok" was selected.

All confirmation dialogs were corrected so that they behave as though the user selected "No' or "Cancel" when using the Close ("X") button.

3.21 JTLS-2016-12572 Unable To Display Object Detection Report In TRIPP

The TRIPP report browser would not display an Object Detection Report due to an error in a style sheet used to format the report. Three functions were added to a formatting utility style sheet that depended on Java methods that were not in the Java XMS library.

The three required functions were added to the Java XMS library.

3.22 JTLS-2016-12573 Object Detection Report Displayed All Detections

The TRIPP's Object Detection Report retrieved and displayed all detections when detections for only a single air mission were requested.

The servlet responsible for created the report was corrected to return only detections for the air mission detected.

3.23 JTLS-2016-12574 IMT In Combat Status Not Retrieved

A quick retrieval button exists on the IMT Unit Info screen that should pop up all units that have an In Combat flag of YES. This button did not retrieve anything, even when there were units that were listed as being In Combat on the Unit Info screen.

The problem was tracked down to a bad attribute retrieval and comparison in the data file that defines the Unit Info screen. This problem was corrected.

The verification stylesheet, which is used to verify the IMT screen files when changes are made, should have caught at least the first part of this error. The stylesheet was therefore enhanced to perform this additional check, which revealed a similar error in the Naval Squadron IMT screen when retrieving aircraft maintenance events.

3.24 JTLS-2016-12577 Units Showing As In Combat When No Longer In Combat

Units that had been withdrawn from combat and had an ROE of Hold Fire were showing up as In Combat on the IMT screens. A check of the actual status of the units within the CEP showed that the In Combat flag was correctly set to NO, but that the JODA had not been informed of the change and was still displaying YES.

Setting the In Combat and In Contact flags is designed to occur in a centralized routine, which also updated the JODA. When a Lanchester Battle was being evaluated, all units in the battle had their flags switched to No, and then back to Yes if they were still involved in combat. The initial No setting was not going through the centralized routine and was not performing an update to the JODA. The code has been modified to ensure the centralized setting routine is called whenever the In Combat or In Contact flag is set within the CEP.

3.25 JTLS-2016-12578 Missing Messages After Restarting

The XML Message Service (XMS) service provides a list of messages sorted by ID number to a requesting Message Browser client. Following a restart of the CEP, the list of messages in the XMS reply is missing a few of the messages contained in one of the in-between checkpoints.

The XMS uses a routine to compile a list of all messages available from both the current messages and any messages from the included checkpoints. This routine stopped compiling messages when the ending message ID was reached. Occasionally a few messages, having higher message ID numbers would be located in the in-between checkpoints and were not being compiled as part of the list. These messages would be left out of the compiled list of messages sent back to the requesting Message Browser.

This XMS routine was modified to continue searching past the ending message ID to ensure all messages in the range of IDs would be compiled.

3.26 JTLS-2016-12579 Duplicate Track Names For Civilian Air Traffic In JOI

The Civilian Air Traffic order creates squadrons as needed at the departing and arriving ICAO/ airbase of the various missions. The naming convention used for these new squadrons is the prefix "CIV_" followed by a unique number. Thus squadrons CIV_1, CIV_2, CIV_3,... are created within the CEP and sent to the JOI.

However, the JOI is designed to strip off any text following an underscore when assigning track names. This permits the database builder to add a country code to all unit names, such as 1ADBN_US, knowing that the country code will be stripped before being sent to the C4I systems.

However, for the Civilian Air Traffic squadrons this results in all the tracks being assigned the same name, "CIV". This causes conflicts within the C4I systems.

The Civilian Air Traffic squadron naming convention was changed from CIV_# to CIV.#.

3.27 JTLS-2016-12580 Crash Positioning Formation Ship On Game Board Edge

A large set of straight line Naval Formations was moving on and off the game board to simulate commercial shipping convoys. As a straight line, all the ships were stationed along the same bearing from the formation center, producing a line of ships. The vast majority of the formations entered and exited the game board without issues. However, one formation entering the game board and one exiting resulted in game crashes.

The cause was determined to be because ships of the formation were moving along the edge of the game board and so were moving on and off the game board. The CEP crashed as a result, because one ship in the formation that had been on the game board (in a hex) had been updated to move off the game board (outside of a hex) and the CEP assumed the new, off-board location was a hex.

It should be noted that this is an extremely hard to reproduce situation since it relies on the speed and timing of the formation moves, as much as the angle that the formation enters or exits the playbox.

The code was modified so that if a ship is moving to a station location, and a formation move determines a new station location, the ship's destination is only updated if the on/off board status of its original destination matches that of its new destination, thus forbidding a ship to move on and off the game board as a result of a formation move.

3.28 JTLS-2016-12581 Inform Developer Of Message Creation Legal Locales

The developer created a Malaysian message locale for Message Browsers, but when running create_message to transform the message definition files into message stylesheets, the newly created locale was not visible, and therefore it was felt a mistake had been made in setting up the locale. This was tracked down to the create_message script, which used to default to, and thus list, all known locales, but was changed to default to only the Configuration Managed locales.

The user had not made a mistake in setting up the locale, but to prevent confusion, two changes were made: inform the user when the Configuration Managed default is being used, and include a list of all valid locales in the help text.

3.29 JTLS-2016-12582 Message Browser Shows Filtered Broadcast Messages

It was possible for a broadcast message domain that was not selected to be delivered.

The message domain names were being stored in a Java List which allows duplicates. Therefore a domain could get added twice, once by the "all" checkbox and once by the specific check box. Then if the message was deselected it was only removed once, leaving it in the List. The container was changed to a Set which ignores duplicate adds.

3.30 JTLS-2016-12583 DDS Unable To Create IADS Link In IADS Edit Mode

In the IADS Edit Mode of the DDS, when the user right-clicked on a target and selected the "Create Link" option, the DDS could crash with exceptions thrown to prevent further actions, and thus was unable to create an IADS link.

This problem was introduced when attempting to limit the available targets for the IADS link to be on the same side as the source target. The crash occurred when the source target is a prototype owned (POT) target instead of a regular target. The code now properly handles the source target being a POT target.

3.31 JTLS-2016-12584 OMA Using Too Much CPU And Falling Behind

When running with a large scenario at high speeds, such as 100 to 1, the OMA starts using excessive CPU capacity (100% on its processor) and does not keep up with the CEP/JODA feed, falling behind in time and causing the JODA to create a large queue for backlogged updates.

An analysis of the situation found that the majority of the CPU was being spent searching for items when an object update was received from the JODA. The OMA was set up with a series of 100 hash lists per object type, where an object's receiver number determined which list the object was in. Unfortunately, in a large scenario, these lists could still be quite large, causing the OMA to expend CPU capacity and time searching the required list for the item.

To solve the problem, the number of hash lists was increased to 499, requiring more memory but decreasing the number of items in each list, thus reducing CPU capacity consumption. This increase in list size put the OMA's CPU consumption on par with the JXSR and allowed the OMA to keep up with the CEP/JODA feed.

3.32 JTLS-2016-12585 Entities Not Stopping When Aggregate Unit Stops

The detailed movement of entities was studied while testing the connection between JTLS and MUSE. An aggregate unit was ordered to move and the corresponding movement of entities was properly reflected. However, when the aggregate unit stopped moving, the entities would not immediately stop their movement. This extraneous movement sometimes continued for several minutes.

The entity movement was being computed entirely by the ELS. When the aggregate unit stopped moving, the speed was correctly set to zero and the ELS posture correctly changed from move to defend. The ELS continued to move the entities because the internal speed and dead-reckoning algorithm was not properly reset when the unit stopped moving. Changes were made to track the

change in movement and signal a stop for the entities when the aggregate unit stopped. This correction also affected the movement of entities in HRUs, convoys, and air missions.

3.33 JTLS-2016-12586 National Boundary Filter Hover Highlights OPAREA

If an OPAREA and National Boundary have the same name, then hovering over the National Boundary filter highlights the OPAREA.

National Boundaries and OPAREAs use the same graphic definition class to render on the map. The action of hovering over the National Boundary filter obtained the graphic rendering elements by using the name of the graphic. If an OPAREA was created with the same name as an existing National Boundary, the OPAREA became the graphic associated with the name, and not the National Boundary.

This was corrected by using both a unique identifier for the graphic and the graphic type associated with the National Boundary to obtain the corresponding graphic to highlight.

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.

Correction of the remaining STRs, however, must be postponed to a later version due to time and resource constraints. These problems may be corrected prior to the next release of JTLS. If an immediate need arises for code corrections to remedy any of these outstanding STRs, such as an exercise planned to occur before the next release, contact the JTLS Development Team Leader. Refer to the Abstract of this document for the current address.

Code errors described in this chapter should be noted specifically because they affect the basic functionality of JTLS. Information is provided regarding the extent of the error, as well as suggestions to avoid or minimize the effects of the problem.

4.1 JTLS-0942 CEP: Air Transport Cannot Combine Wet And Dry Supplies

When both wet and dry supply categories are included in the same Transport Instructions List for an Air Transport mission, they will not be transported at the same time. The first supply category shipment type will be loaded, but the second will not. If both are included in the same Supply List, the wet category is preferred. The aircraft go through the motions as if loading and delivering the denied category, including MISREP confirmation. No pickup or delivery is made, although an empty storage area may be created. There is no documentation to support this situation, and the user is not notified of the problem.

4.2 JTLS-0956 CEP: MPP Messages For Canceled Missions In Error

If an airbase is magic moved with several squadrons on active missions that need to be canceled or with squadrons in the middle of a self lift, the subsequent message generated for the situation has several errors. The changes required are too risky during the exercise. The problem will not cause a crash, but will cause the MPP to incorrectly display the message contents.

4.3 JTLS-0961 CEP: Group Ground Move Delayed To Lead Unit

There is a problem when a group ground move is sent. The directive is delayed to the lead unit. When the lead unit learns about the move, it immediately tells the units in the follow-on group. This could lead to directives being received out of order. Assume the user sends a directive at 0100 and the CEP determines the lead unit should receive the message at 0200. The lead unit cannot receive any other directives until after 0200. The CEP ensures that directive receipt is in the same order as the user sent the directives. This is not true for the follow-on units. If the user sent an order at 0115 directly to one of the follow-on units, the follow-on unit could receive the 0115 directive prior to the order sent at 0100. If this error is causing problems for upcoming exercises, the Configuration Manager should be contacted for a code fix to solve this problem.

4.4 JTLS-0968 CEP: Inconsistency Between Regular Run And Pusher

There is a major inconsistency between a regular run and a run created using pusher. When an order with ASAP is sent, the READ KEYWORD routine sets the data parameter to TIME.V. When pusher reads in the order, TIME.V is much earlier than it was when the order arrived in the first place. For orbiting missions and alert missions, this alters when they will go off alert by a great deal. This must be fixed and made consistent. It appears that both TIME.V and order receipt time must be saved to the ci1 file to accomplish this task.

4.5 JTLS-0973 CEP: Periodic Report Air Supplies And Fuel Not Correct

The arrays which hold air supply usage are not being maintained correctly given the new MISSION RESOURCE ALLOCATION event.

4.6 JTLS-0974 CEP: Submarine Detection By Ground Sensors

A moving submarine does not get full credit for coverage time by sonars on board other ships or submarines. It gets full coverage time for airborne sensors but not ground based sensors.

4.7 JTLS-1384 Documentation: Area, Target, And Unit Report Documentation

Some users have indicated that the documentation of Area Report, Unit Report, and Target Report similarities and differences are incomplete or inaccurate. A review of this documentation is needed.

4.8 JTLS-2014-12093 CEP - HRU Reports Do Not Include Detected HRUs

Periodically, an HRU will report what it has seen. It reports units moving into and out of the area. The data is collected when it detects HRUs moving into and out of the area, but this information is not included in the generated report. This should be done in the routine GENERATE HRU REPORT.

4.9 JTLS-2014-12094 DDS/SVPR - UOM Flicker

It appears that the UOM periodically changes and then changes back in the SVPR, but it doesn't stay changed long enough to see what it changes to.

4.10 JTLS-2014-12096 APACHE/SYNAPSE Cannot Run On Same CentOS 6 Machine

When the Synapse and Apache are run on the same instance of CentOS 6 or Red Hat 6 on the same machine, the Synapse will back up. Running the Synapse and Apache on separate virtual machines or two difference physical machine works correctly. The JTLS Development Team have continue to consider this a high priority item.

4.11 JTLS-2014-12098 CEP - Moved Units Do Not Remove CS From Shelters

Units moved out of a hex do not remove combat systems from shelters.

4.12 JTLS-2014-12099 SVPR - Ensure DDS Sending SVP Info To Debug

The SVP crashed while running the SVP from the SVPR, but the only sign there was a problem was that nothing was happening. The output of what was being read by the SIP was hung, without any information in the debug console or other information.

4.13 JTLS-2014-12101 SVPR - Auto-Fix Not Selecting Affected Supply Category

When auto-selecting a TUP/SUP supply category to fix, the SVPR always opens the corresponding column in the first supply category, rather than the affected supply category.

4.14 JTLS-2014-12102 DDS - SVPR Warning 1223 Empty Table

When clicking on the solution for Warning 1223 in the SVPR to bring up the CSP_CS table, an empty table is brought up instead.

4.15 JTLS-2014-12103 DDS - No Change For Default UOM For Basic Categories

Since the CEP is coded to expect a default UOM of the raw data for each basic category. The user should not be able to delete or edit these UOM.

4.16 JTLS-2014-12104 WHIP - Issues On 32 Bit Machines

WHIPs being run on a 32 bit Windows machine were using over 1 gigabyte of memory each. In addition, the WHIPs would often lock up or the Map would not respond to Sitreps, route requests, and so on. This problem will be corrected with the release of JTLS 5.0.

4.17 JTLS-2014-12106 AAR - Exception When Translating Report

When a report is rendered in the TRIPP, the report is rendered in English even if another language is selected. Two FileNotFoundExceptions are found in the GlassFish log, indicating that the language properties and default language properties are not found.

4.18 JTLS-2014-12107 WSM - Apache Status Fails When Firewall Blocks HTTP

The WSM always uses HTTP to get the Apache status even when running with HTTPS. Both ports are open on the server, so this fails when the firewall blocks HTTP.

4.19 JTLS-2014-12108 CEP - BDA Reports Inaccurate On Sheltered CS Kills

When air missions attacked airbase targets sheltered in barracks shelters and killed combat systems, the BDA Report for the attacking side showed grossly inflated numbers of combat

systems killed. The BDA report is much more accurate when killing systems by attacking the unit or a location. The false numbers only happen when killing an occupied shelter.

4.20 JTLS-2014-12110 DDS - Printing Multiple DDS Reports Needs Correction

One can print multiple DDS Reports with one print command. This is done by selecting the reports individually. With more than one highlighted, a single print command can be used. However, in the resulting print, the reports run together - the second report starts on the next line after the previous report ended. Also, it adds a line of text that looks like the last line of the first report. This added line is actually the title of the second report, left justified and inserted in a smaller font. You see the title of the second report twice, and it looks unprofessional.

4.21 JTLS-2014-12112 DDS - Oracle Error Display Dialog

A dialog currently exists in the DDS that pops up when an error condition happens. This dialog should be used to display Oracle errors as well, given that the user sees nothing happening when a command is executed and it fails for one reason or another and is confusing them. When no action is displayed, the interpretation is that the DDS is failing and not the database layer.

4.22 JTLS-2014-12114 DDS - Add New Validator To Check For "NotOffspring"

Current validators for fields like "HHQ" cannot verify that the assigned unit is not an "offspring" of the unit that is being modified. Even though this type of mistake can be caught by SVP eventually, it still can have ill effect to components like Command Hierarchy once the data committed to the database. It needs to be caught and prevented.

4.23 JTLS-2014-12116 DDS - Railroad Name Remains On Map After Deletion

If a user deletes a Railroad Network from the Map, the Name remains displayed. It stays even if Railroad Edit Mode is exited and reentered. Stopping and restarting the DDS is necessary to remove the Railroad Network Name from the Map.

4.24 JTLS-2014-12117 DDS - Map Create Railroad Network Works Deceptively

When you select the "New Railroad" button in the DDS, the cursor becomes a "pointing finger," allowing you to select a location on the map to place the first Railroad node. However, after you place the first node, the cursor reverts to its default appearance. One expects that selecting a new location will place the next node there, but no matter what location you select, the second node is always created on the hex due east of the first node.

4.25 JTLS-2014-12119 DDS - Columns Data From Another Table Not Updated

Some tables have columns whose data is retrieved using a "Select" statement that queries data from another database table (e.g. the formation column in the naval unit screen). For these columns, when DDS does a flashback version query for the updates, Oracle does not report any

update if the actual update occurs in the other table. Therefore, these columns' data are not updated in the DDS.

4.26 JTLS-2014-12121 DDS - Drag/Drop Problems Modifying Rail Networks

When clicking and dragging a Node or an Arc, one has to be careful to make sure the correct item is selected. One can, for example, drag an arc completely away from its endpoint nodes. In addition, Java exceptions can occur when the correct item is not selected.

4.27 JTLS-2014-12122 DDS - No Spaces in Long Name After Hierarchy DeepCopy

A user cannot enter spaces in the long name replacement string after a Hierarchy Deep Copy, although spaces are allowed in long names.

4.28 JTLS-2014-12123 DDS - Add UIC Replacement Option In Hierarchy DeepCopy

The short name replacement string should be added to the UIC, so that hand-editing UICs after a Hierarchy DeepCopy is not necessary.

4.29 JTLS-2014-12125 DDS - Editing Location Fields XX-60-60.0N Can Be Entered

It is possible to enter a location such as 10-60-60.0N in a location field in the DDS, The location field text formating functions needs to be improved.

4.30 JTLS-2014-12126 AAR - Aircraft Kill Summary Report Time Format

AAR reports can contain times, but these are currently being generated using the url time format, which is difficult to read by the end user. These times need to be output in a more user friendly format.

4.31 JTLS-2014-12131 DDS - Add Report Title To Report

All DDS Reports should have titles. If a user prints out several reports, it is difficult to know what each report contains. The title should help with this.

4.32 JTLS-2014-12132 DDS - Confusing Report Popup Menu Item

The bottom of the report browser popup menu has part of the stylesheet name (e.g., 01-dcr). This is confusing.

4.33 JTLS-2014-12133 DDS - Reports Order Help Text Needs Improvement

DDS report orders help text needs improvement.

4.34 JTLS-2014-12136 DDS - TMU Different Algorithms For Polygons, Areas

The DDS TMU Map Polygon algorithm is different from the TMU Area algorithm. In other words, drawing a rectangular Polygon does not result in the same area having its attributes changed as does drawing a rectangular Area of exactly the same size.

4.35 JTLS-2014-12140 DDS - Flight Paths Difficult To See

Flight Paths are difficult to see because the default color is white. The color should be changed to Cyan. Cyan is currently the color used to display OPAREAs, so the default OPAREA color should be changed to Orange. This change should be made in both the DDS and the WHIP for consistency.

4.36 JTLS-2014-12143 DDS - REPORTS - Rename the MUSE report to DIS.

The MUSE Report should be renamed to the DIS (Distributed Interactive Simulation) Report. The report is no longer just used for MUSE. There are several other models that need to know the current set of DIS codes in a specific scenario.

4.37 JTLS-2014-12144 DDS - Exception While Opening TUP From SVPR

An exception occurs when opening a TUP from the SVPR. The exact circumstances have still not been identified, and so a correction could not be implemented.

4.38 JTLS-2014-12145 DDS - Exception Logged With No Stack Trace

A ClassCastException in the DDS was logged, but no Stack Trace was saved. The exact circumstances have still not been identified, and so a correction could not be implemented.

4.39 JTLS-2014-12146 DDS - Cannot Delete Illogical Pipeline Arc From Map

You cannot delete an illogical Pipeline arc from the Map. An illogical Arc is one that would create an illogical flow. An example of an illogical flow would be one connecting nodes: A to B to C to A. The Map will not let you create Arc C to A. But you can create that illogical arc in the Pipeline Arc table. IF you do so, the arc will show up on the Map and exist in the arc table, and you cannot delete it from the Map. You must use the table to delete it.

4.40 JTLS-2014-12147 DDS - Flight Path With Min Altitude Higher Than Max

When you create a Flight Path between two Nodes, you are asked to assign a Minimum and a Maximum altitude along the path. You can assign a Minimum that is greater than the Maximum. You cannot do this in the Table, but the Map allows it.

4.41 JTLS-2014-12148 DDS History Table Missing Record Identifier

The DDS keeps track of when data is changed in a table history table. If an attribute of a child table is changed, the history table does not list exactly what is changed. For example, assume

you change the quantity of a CL.V supply category with which an SSA Target. This supply information is in a child table for the SSA target type table. The problem is that this one change generates a single history record which properly indicates the old value and the new value, but does not list what SSA SC category record was changed.

4.42 JTLS-2014-12264 CEP - Naval Mine Damage Documentation Obsolete

The discussion of Naval Mine Damage in the Analyst Guide is obsolete. It does not address the use of lanes nor the current variables used in the determination of encounter and damage.

4.43 JTLS-2014-12265 DDS - Need "Not In" Validator For Composite Unique Key

Currently, the "not in" validator has limited capability, meaning it can only check for single column. But many database tables have composite unique keys, which can take up to N number of columns. Therefore to check their uniqueness, the current "notin" validator is not sufficient. It needs to be expanded or a new validator needs to be introduced that can check uniqueness for multiple columns. This problem will be corrected in JTLS 5.0.

4.44 JTLS-2014-12266 WSM - Reloading Database While Starting Service Lockup

If the ICP database is reloaded while a service is starting, the WSM appears to freeze for a period of time.

4.45 JTLS-2014-12270 WHIP - Message Browser Moves With New Message

If the user selects a message and then scrolls down, the Message Browser jumps to the selected message when the next message arrives.

4.46 JTLS-2014-12272 WHIP - Incorrect Behavior Selecting Multiple Messages

If a number of messages are selected using the shift key in the WHIP Message Browser, and an attempt is made to select more, the second batch begins with the last message selected in the first batch, thus excluding many messages from the first batch.

4.47 JTLS-2014-12275 DDS - Mouse Panning Documentation Needed

New documentation on how to use the Mouse Panning map mode needs to be added to the DDS User Guide.

4.48 JTLS-2014-12277 DDS - NB Map Filter Does Not Turn NB On/Off

National Boundaries and hex barriers are not displayed on the DDS map.

4.49 JTLS-2014-12278 DDS - Targets Gone When Parent Unit's Name Changed

On the DDS Command Tree, when a Unit name changed on the 'Reset Tree' mode, all or a part of Targets under the Unit disappeared.

4.50 JTLS-2014-12279 DDS - Remove Reference Field From Report Orders

The reference field for report orders appears to be unused, but is required to be filled in. It should be removed.

4.51 JTLS-2014-12280 JTLSConsole - Needs Recall Command Similar To Xterm

The JTLSConsole needs a library for managing command history.

4.52 JTLS-2014-12281 SVPR - Error Corrective Action Finds Target, not JDPI

The corrective action for Error 634 centers the map on a target of the same name as the JDPI, rather than the intended JDPI.

4.53 JTLS-2014-12282 WHIP - On Demand Range Ring Remained After Deletion

An on-demand weapon range ring was added and then deleted, but remained visible until the next screen update.

4.54 JTLS-2014-12284 SVPR - Various Error/Warning Issues

A number of issues have been noted in the format of the SVPR Errors and Warnings, including Warnings 2000-2008 being documented but not implemented anywhere, a number of Error and Warning numbers not currently being used, and many Errors and Warnings requiring a minor correction or clarification.

4.55 JTLS-2014-12285 AAR/DDS Reports - User Added Reports Documentation

New documentation on how to create custom AAR and DDS reports needs to be added.

4.56 JTLS-2014-12286 CEP - Improper Calculation Manifest Processing Time

The routine MANIFEST.PROCESSING.TIME specifies that all manifests take one hour to load or offload. This routine needs to be made more robust, and examine the contents of the manifest, the A/C load/offload time, and the possibility of using MHE. Additionally, the 4th argument within the calls to this routine, which specifies whether it is a loading or offloading event, need to be standardized.

4.57 JTLS-2014-12287 DDS - Oracle Error Windows When DDS Reconnects

With DDS sessions up at two separate workstations, the primary DDS user shut down and restarted GlassFish for the scenario. The DDS at the second workstation lost, and then attempted to re-establish connection (as it should have). However, at the DDS that was up during the GlassFish stop and restart, a pop-up "Oracle Error" window was displayed.

The problem was that NUMEROUS versions of this error window are present, and clicking to close each window simply reveals more error windows, even though the DDS is by now reconnected. The error window probably came up every time the DDS tried to update some table. This error window should, if possible, only be displayed once.

4.58 JTLS-2014-12288 AAR - Target Damage History Report Missing Table

The Target Damage History detailed report outputs the data as a block quote, rather than the expected table.

4.59 JTLS-2014-12289 CEP - Amphibious Assault Crash

When two ground units, magic moved onto a naval formation, were ordered to conduct an amphibious assault using vehicles and helicopters (which were magic moved onto the formation after having their Naval Qualified flag changed to YES), the CEP crashed. This problem is related to but separate from JTLS-2014-12154, which has been fixed in release 4.1.9.0.

4.60 JTLS-2014-12290 CEP - Amphibious Assault Not Completing

Out of two ground units, magic moved onto a naval formation, and ordered to conduct an amphibious assault using vehicles and helicopters (which were magic moved onto the formation after having their Naval Qualified flag changed to YES), one ground unit completed the assault, while the other (which arrived onto the game board through a port) never assaulted. This problem is related to but separate from JTLS-2014-12154, which has been fixed in this release.

4.61 JTLS-2014-12291 AAR - Add AAR Documentation

New documentation on how to run AAR reports needed to be added to the WHIP Training Manual.

4.62 JTLS-2014-12292 ICP - Saving Caused Connect Request to CEP

The JXSR execution host was changed while the JXSR is running, and then changed back. When the ICP was saved and the WSM was refreshed, the CEP crashed. It appears the JXSR sent a new connection request.

4.63 JTLS-2014-12293 WSM - Add Web Services Documentation

New GlassFish documentation, adding instructions for modifying a game in progress (such as adding new WHIPs or moving web services to a different host) needs to be added to the Technical Controller's Guide.

4.64 JTLS-2014-12295 DDS - SQLException With Copied TUP

When copying a TUP and attempting to fill in the number of location transponders on the copy, an error message pops up, saying that "this feature is still in development. This is an error expected by the development team. It is not necessary to report this error." This error is caused by attempting to insert a null value in a field that cannot hold a null character.

4.65 JTLS-2014-12296 SVPR - Warning To Find CEP Crash, Never Generated

Warning 1137 states: Database Entity ENTITY.NAME, index INDEX, should have at least one record. The absence of at least one record for a permanent entities causes a CEP Crash during start. It happens, for example, when the CEP tries to reserve certain arrays using a zero length. There is SIP code to generate this Warning, but the Warning will never be generated. The SIP first crashes during Read, for the same reason the CEP would crash during its Read.

The resolution to this problem involves four actions:

- The DDS should prevent removal of the last remaining record for selected tables holding Permanent Entity data.
- The DDS should perform checks for selected tables being empty whenever a Download is generated from the DDS. Tables could have been emptied by direct sql statements.
- The SIP read code should, when reading the record count file, cease execution if any zeros are found. It will generate a message to the execution window saying why.
- Warning 1137 should be removed.

4.66 JTLS-2014-12297 WHIP - Coordinate Converter Cannot Find Lat/Lon

As with the WHIP IMT windows, the Coordinate Converter tool should allow users to locate a Lat/Log point on the Map, but it currently does not.

4.67 JTLS-2014-12298 DDS - History Table Field Not Updated For POT Targets

The DDS History Table "Record Identifier" field was not updated for SUP/TUP POT targets.

4.68 JTLS-2014-12299 DDS - Strange Behavior In Hierarchy DeepCopy

A ground unit had 10 ground subordinates and 1 depot subordinate (Hierarchy A). When Hierarchy Copy was performed (from the Command Hierarchy window) it only copied the top unit and the subordinate depot. After using this copy as Hierarchy B, and just copying the individual subordinate units and re-parenting them under Hierarchy B, a successful Hierarchy Copy of Hierarchy B in its entirety was able to be performed.

4.69 JTLS-2014-12300 SVPR - Auto-Fix Terrain Problems Nonfunctional

The SVPR was unable to auto-fix mismatched barriers.

4.70 JTLS-2014-12301 CEP - No Divert When Friendly Air Refuel Flag Changes

Commented out code exists in the routine CHANGE.REFUEL.FLAG when the Friendly Refuel Flag for a tanker mission is switched to NO. The code appears to have been commented out because it was causing an infinite loop, but there may be a problem with foreign missions that are heading for the tanker when the flag changes not diverting elsewhere.

4.71 JTLS-2014-12303 WHIP - TRIPP Running With Shut Down Web Services Lock

The TRIPP will sometimes freeze when running with web services shut down.

4.72 JTLS-2014-12304 WHIP - New WHIP Pushed When Running Security Exception

A security exception is thrown when a WHIP component is used for the first time after a new WHIP is pushed while the WHIP is running.

4.73 JTLS-2014-12305 WHIP - Route Deselected Using Context Menu Stays

A route that was deselected using the context-sensitive menu stayed on the map. The route could be removed using the routes filter panel for demand routes.

4.74 JTLS-2014-12306 WHIP - Deadlock While Saving Map Filters

The WHIP froze while trying to save map filters.

APPENDIX A. ABBREVIATIONS AND ACRONYMS

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

ICPLogin	Interface Login Program
ID	Identifier
IFF	Identification Friend or Foe
IIP	Intelligence Information Prototype
IMT	Information Management Tool
INFO	Information
INTEL	Intelligence
JCATS	Joint Conflict And Tactical Simulation
JDA	Japan Defense Agency
JDPI	Joint Desired Point of Impact (formerly DMPI: Desired Mean Point of Impact)
JDS	JTLS Data System
JDSP	JTLS Data System Protocol
JEDI	JODA Entity Data Identifier
JMCIS	Joint Maritime Combat Information System
JMEM	Joint Munitions Effectiveness Manuals
JODA	JTLS Object Distribution Authority
JOI	JTLS Operational Interface
JPL	Jet Propulsion Laboratory
JRSG	Joint Rapid Scenario Generation (formerly JIDPS: Joint Integrated Database Preparation System)
JSDF	Japanese Self-Defense Force
JTLS	Joint Theater Level Simulation
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
MDP	Message Delivery Program
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

OEC	Order Entry Client
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
OVT	Order Verification Tool
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