JTLS

Version Description Document

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DEPARTMENT OF DEFENSE
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JOINT THEATER LEVEL SIMULATION
(JTLS 4.1.9.0)

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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 4.1.9.0 delivery of the configuration-managed JTLS software suite.

JTLS 4.1.9.0 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 4.1.9.0 of the configuration managed Joint Theater Level Simulation (JTLS®) software suite. JTLS 4.1.9.0 is a Maintenance delivery for the JTLS 4.1 series of releases. JTLS 4.1.9.0 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 bug fixes made since the previous official release of JTLS. Finally Chapter 4.0 lists all known bugs 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 has not changed since the release of JTLS 4.1.8.0, but improvements to the suggested default data, as contained the SDBKOR41 scenario, have been made. These database improvements are summarized in this chapter, as well as APPENDIX B.

JTLS 4.1.9.0 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 4.1.9.0)
- *JTLS ATOT User Guide* (JTLS Document 03, Version 4.1.9.0)
- *JTLS Controller Guide* (JTLS Document 04, Version 4.1.9.0)
- *JTLS Data Requirements Manual* (JTLS Document 05, Version 4.1.9.0)

- *JTLS DDS User Guide* (JTLS Document 06, Version 4.1.9.0)
- *JTLS Director Guide* (JTLS Document 07, Version 4.1.9.0)
- *JTLS Executive Overview* (JTLS Document 08, Version 4.1.9.0)
- *JTLS Installation Manual* (JTLS Document 09, Version 4.1.9.0)
- *JTLS WHIP Training Manual* (JTLS Document 10, Version 4.1.9.0)
- *JTLS Player Guide* (JTLS Document 12, Version 4.1.9.0)
- *JTLS Standard Database Description* (JTLS Document 14, Version 4.1.9.0)
- *JTLS Software Maintenance Manual* (JTLS Document 15, Version 4.1.9.0)
- *JTLS Technical Coordinator Guide* (JTLS Document 16, Version 4.1.9.0)
- *JTLS Entity Level Server User Guide* (JTLS Document 19, Version 4.1.9.0)
- *JTLS Federation User Guide* (JTLS Document 20, Version 4.1.9.0)
- *JTLS C4I Interface Manual* (JTLS Document 21, Version 4.1.9.0)
- *JTLS DDS Training Manual* (JTLS Document 23, Version 4.1.9.0)

1.2.3 Updated Documents

- *JTLS Version Description Document* (JTLS Document 17, Version 4.1.9.0)

1.2.4 Delivered Software Components

JTLS 4.1.9.0 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 2.4.7 (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 4.1.9.0 are provided in the *JTLS Installation Manual*. Installing a previous version of JTLS prior to installing JTLS 4.1.9.0 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 been updated from JTLS 4.1.5.0 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 4.1.9.0 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 5 or 6 (ES), 64-bit architecture.

  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 this restriction is not 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 4.1.9.0 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 4.1.9.0 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 Version 1.7.0 Update 80 is required for all platforms and must be used to support all workstations.

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

  One of the DoD IA requirements is that the software must implement a methodology that ensures that the end user keep the software up-to-date and all security patches are properly installed. Java 7 has fulfilled this mandate by implementing an expiration date for its software. After a certain date, all Java related programs will stop working, whether you are connected to an open network or not.

  JTLS has decided to meet this requirement by linking our JTLS software releases to the Java 7 security updates. This version of JTLS is released using Java 7 Update 80, which expires on 14 July 2015 and becomes non-operative on 14 August 2015. After this time, it will be necessary for users to upgrade to Java 8.

  Java 7 Update 80, suitable for use on 64-bit Linux systems, is part of this delivery. For optimal performance, a user must obtain this same version of Java for any non-Linux clients systems that they plan on using.

  JTLS has completed the IA program mandates and the JTLS 4.1 series of releases has been granted an Authority To Operate (ATO) on DoD systems.

- 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 *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 4.1.9.0 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 4.1.9.0 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 4.1.9.0 and any previous 4.1 series database.

There are no changes between the database structure in JTLS 4.1.8.0 and JTLS 4.1.9.0. There are no special requirements to upgrade your database for JTLS 4.1.9.0.

To upgrade your previously installed and modified JTLS 4.1.5.0 scenario or earlier for JTLS 4.1.9.0, 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, intranets 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.

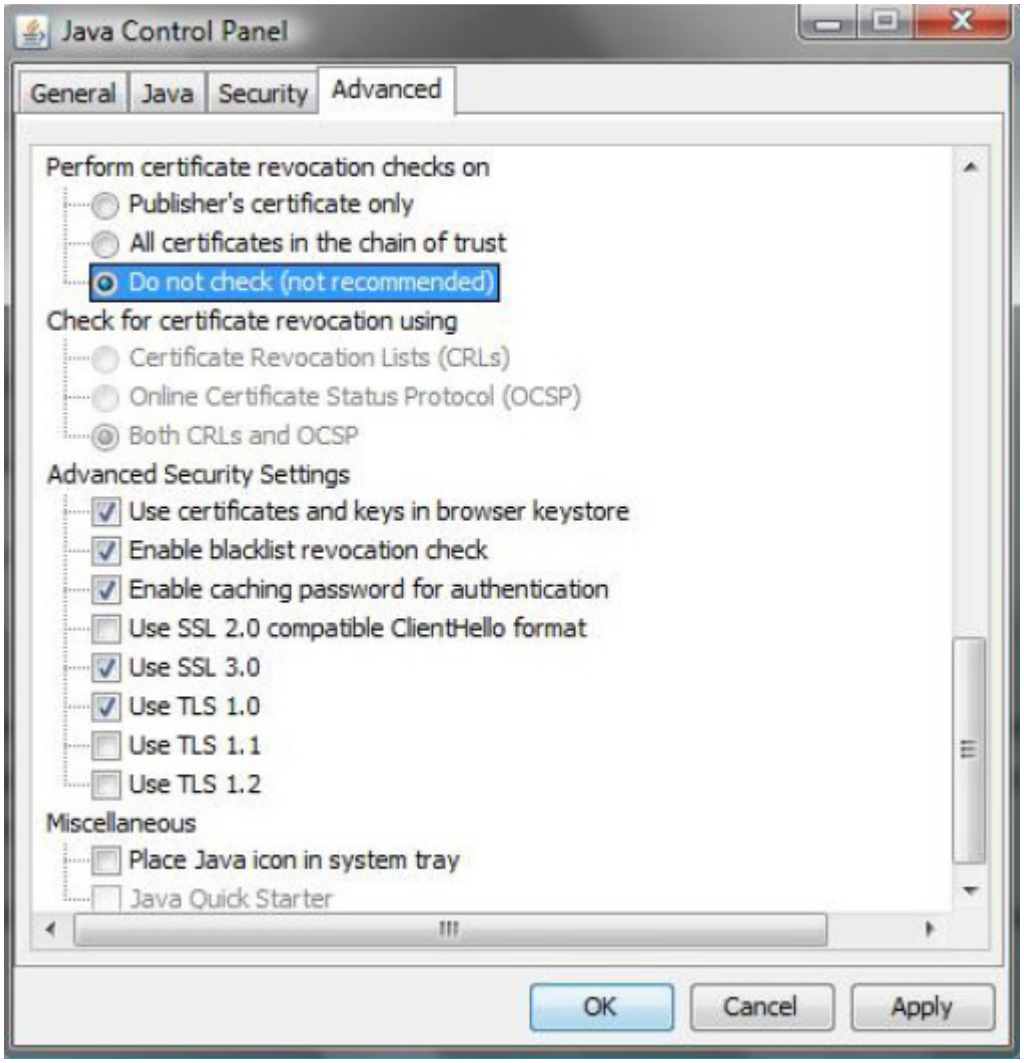

Figure 1.1 Control Panel

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.

1.6 Java 7 End Of Life

Oracle has announced that Java 1.7.0 Update 80 will be the last public update for Java 7. Any further updates would need to be made via a support arrangement with Oracle. Java 1.7.0 Update 80 is scheduled to expire July 14, 2015, after which it may no longer be able to run the WHIP and DDSC via a web browser.

1.6.1 Workaround

Client machines can be upgraded to the latest version of Java 8 to run the WHIP and DDSC.

Server machines cannot be upgraded to Java 8, because the Glassfish server software will not run under Java 8. Two new scripts had been added to run the WHIP and DDSC from the command line. Typing either “whip” or “ddsc” in a terminal window will print the usage instructions.

2.0 MINOR MODEL ENHANCEMENTS

This chapter summarizes model capabilities added to JTLS 4.1.9.0 as a result of implementing minor Engineering Change Proposals (ECPs). No major design related ECPs are delivered with JTLS 4.1.9.0.

2.1 JTLS-2015-12394 JTOI Provide Field For Squadron Role File In Setup

Summary of Model Change Request

ICC users want to identify the role assigned to a squadron that has dual-role capable aircraft. This data is not part of JTLS. To assign ICC roles to squadrons, a text file is hand-created by the operator and the ICC JTOI process was started from the terminal window by providing the file name as an option. The ICC JTOI operator wanted to specify the ICC role file during setup process, so that they can use the javamenu to start the process.

Design Summary

An additional field was added to the setup window, where the operator can enter the name of the file which contains JTLS squadron names with ICC roles.

Note: Due to the format change, previous setup files will not work when starting the JTOI.

2.2 JTLS-2015-12395 Decrease Checkpoint Load Time

Summary of Model Change Request

The methodology used to load the Probability of Hit and Probability of Kill data did not result in a fast read of the data. While working on the ATOG, a better methodology was implemented, and this methodology was also implemented in the CEP and SIP code.

Design Summary

Within the initialization database and checkpoints, the names of entities are used as references to the entities. Within the model, indices are used as references to entities. Therefore during a database or checkpoint load, the names must be matched to an index.

In order to speed this process up the model stores the last name match for each type of permanent entity. This helps because the database and the checkpoints group the data by type. For instance, the Probability of Hit Lethality data is always grouped by the lethality class, then target category, then target subcategory. Once we've done a lookup of a target category name to index there is a good chance that the next record will be the same target category. Therefore the code checks which target category was looked up last to see if a match exists before performing a more complex search.

However, with the Probability Hit Lethality data, the target subcategory data, which is the last dimension, is never grouped. Therefore, every target subcategory lookup must perform a more complex search. By design, the records for each of the three dimensions are alphabetized, as are most of the entities within any class (lethality class, target category, target subcategory).

JTLS took advantage of this fact to expand the name to index methodology to first check for the last match, and then check the entities after the last match. If that fails, the new algorithm checks the entities before the last match. This allows the code to take advantage of the alphabetized nature of the data to greatly reduce the amount of time to start a scenario, or more importantly to recover from a checkpoint.

2.3 JTLS-2015-12396 Provide DSA on IPIR Subject Line

Summary of Model Change Request

The IIR, Non-Theater DSA Collection Report provides no information on the subject line for a user to quickly identify which DSA is involved in the report. The Air and Intel cells have found this cumbersome when attempting to collect and collate data from numerous DSAs.

Design Summary

The DSA name, which already existed as a top level data item within the message, had been added to the end of the subject line. The subject line now reads, "IIR, Non-Theater DSA Collection Report, ", where is replaced with the actual name of the DSA.

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-2014-12269 DDSC - Unit Remained Hidden When Unit On Top Moved

In the DDSC, moving a Unit (A) on top of another Unit (B), and then moving Unit A again, hid Unit B.

This STR is similar to the issue fixed by JTLS-2015-12383, which was fixed by correcting an issue in the unit editor layer that would cause the wrong unit to be re-drawn after the move. It has not been able to be reproduced and both STRs are considered closed.

3.2 JTLS-2014-12271 JOBE: Runway Should Be Excluded In Own Target List

The JOBE creates its own list of allowable owned targets which always included Runway objects. This means that a JOBE user could select a non-airbase object and create a new owned Runway Target. The JOE automatically creates a record for the Airbase Runway Use table (ab_runway) when a new owned runway is added to the JOBE database. However, when the ab_runway table was uploaded into the official DDS table, the record was rejected, causing an Oracle Error, because only airbase units can use an runway.

The JOBE code was modified. The ability to create an owned runway target was removed for all units except airbases.

3.3 JTLS-2015-12381 Target Priority Incorrect On Restart

JTLS has the concept of a Target Type Group (TTG), which groups similar types of targets together. The specific target types within a given group are prioritized, to help an air mission decide what should be attacked. For example, if an air mission is told to look for objects in the ARMORED_TTG, the mission will look for objects that have a specific type of one of the specific types held in the ARMORED_TTG. If it finds more than one object that meets this requirement, it selects the target that has a specific target type with the lowest priority number.

The algorithm that accomplishes this task assumes that the specific target types in the group are sorted by low priority number. On an ASCII restart this was not true. The result is that the mission may select a target that has a higher priority number (meaning a lower hit priority).

On an ASCII restart, the algorithm to load the Target Type Group list of specific target types was corrected. The result is that this list is now properly ordered by low priority number.

3.4 JTLS-2015-12386 Incorrect Error When Database Built In Liters

If a user builds their database using a default Unit Of Measure (UOM) in other than the normal JTLS UOMs, Gallons, Tons, and Kilometers, the Verification Process would generate an error indicating that the conversion values for the normal UOMs were incorrect.

The SVP errors was fixed and the routine to check for UOM consistency was changed.

There are now only two error conditions that need to be checked. The database must contain a default record for each UOM category. For example, the database must include WET_WEIGHT record that has a multiplicative value of 1.0 and an additive value of 0.0. The old SVP insisted that this record be labeled as Gallons. That was incorrect. If the user builds their database in Liters than the record for Liters should have the 1.0 and 0.0 values.

The second check is that the mandatory UOM records exists in the database. The order panel definitions include the preferred UOM for a given field. The preferred UOMs in the order panels must exist in the database. If it is not there, the order panels referring to the non-existing UOMs will have problems. A good example of this situation, is some Naval Orders and Air Orders have a preferred UOM of Knots (KTS). This means the UOM conversion data for KTS must be in the database.

3.5 JTLS-2015-12387 Message Subject Lines Cannot Contain Newline

A new message was created which had a newline character at the end of the subject. When this was translated into the subject stylesheet the newline was replaced with a variable that is not defined for the subject stylesheets. The end result was that when the XMS received notification of the message and attempted to create the subject line, the stylesheet parser failed and the subject "Stylesheet error" became the subject line which was then displayed on the WHIP Message Browsers.

An error check was added to the Message File Parser (MFP), which verifies message templates and translates them into stylesheets, to check if a newline character is used in the subject line. If it is, an error is displayed and the stylesheet is not generated.

3.6 JTLS-2015-12388 Removal Of Default UOM File

A default unit of measure file (order_input.uc) existed that contained the definitions of UOMs that could be used as defaults in orders. This prevented users from changing the baseline unit of measure for a scenario. For example, this file contained a definition for gallons with a multiplier of one and increment of zero, which did not allow the user to define liters as the baseline unit of measure in the database.

Processing of the default UOMs was removed. All UOMs must appear in the scenario unit of measure file and table. Checks were added to the SIP to make sure that the values allowed for order default UOMs are present.

3.7 JTLS-2015-12389 SIP Aircraft Class Weather And Firing Position Links

Links to an aircraft class' Weather Class and Probability of Attaining a Firing Position exist at the top of the aircraft class' OPM page. However, these links do not work and do not take the user to the relevant data.

The link reference tags were not being printed with the Aircraft Class data. The addition of these reference tags allowed the browser to determine where in the page the links should take the user.

3.8 JTLS-2015-12390 DETACH Order Help Field And Algorithm Mismatch

There is a mismatch between the DAYS.OF.SUPPLY help field, which states that one Day of Supply includes sufficient POL to move 100km, and the algorithm that calculates DAYS.OF.SUPPLY, which does not use 100km, but instead calculates the distance as the TUP average distance/day multiplied by TUP hours movement/day. In addition, the algorithm uses CSP.CS.NONCOMBAT.FUEL.USAGE (per day).

Any user attempting to calculate DAYS.OF.SUPPLY would reach different supply quantities for POL than those actually issued in JTLS.

Changes were made both to the DAYS.OF.SUPPLY help field text in the DETACH order and to the algorithm that calculates DAYS.OF.SUPPLY: The algorithm was changed to use CSP.CS.COMBAT.FUEL.USAGE (per day) rather than CSP.CS.NONCOMBAT.FUEL.USAGE to match the help field

3.9 JTLS-2015-12391 Improper Constraint In Ground Attack Order

A ground attack order that did not specify a "Unit to Attack" or a "Location to Attack" was issued. The CEP was unable to find a route to the attack location because that location was not specified.

An order constraint to check the attack location or unit to attack was not included in the ground ATTACK order panel. The CEP attempted to find a route to the attack location, and since it was not set in the order, the CEP used a location at (0,0). A proper constraint was included with the ATTACK order and now this routing problem does not occur.

3.10 JTLS-2015-12392 DCP/ICP - Incorrect Scenario Will Not Change

If a non-existent scenario is entered when running the DCP or ICP script, though the user is given a list of valid scenarios and asked to select a valid scenario, the script still attempts to run with the incorrect scenario first entered.

The ICP and DCP scripts had a logic error, which was corrected.

3.11 JTLS-2015-12393 Incorrect Time-Late Object Counts Shown On JOI

When the Time-Late Cutoff Use flag was enabled during JOI setup, incorrect Time-Late object counts were displayed on the JOI main window.

The JOI code was modified to correct the error.

3.12 JTLS-2015-12397 Run WHIP/DDSC Without Java Web Start

The last public version of Java 1.7 will expire in July 2015. This may prevent users from running the WHIP and DDSC using Java Web Start through a browser.

Added a WHIP and DDSC script which will allow the WHIP and DDSC to be run from a terminal prompt on a Linux system with a JTLS installation. The WHIP and DDSC can be run on other platforms by installing the latest version of Java 1.8. Note that the Glassfish servers will not run in JTLS 4.1.x when using a version of Java other than 1.7.

3.13 JTLS-2015-12398 SIP Crash When Automatically Creating UICs

The SIP crashed when trying to automatically create Unit Identification Codes (UICs) for their scenario. Also, the user was unable to locate the expected output file from this routine.

The crash occurred due to an absence of specific code in the routine which created UICs. That routine was attempting to assign a letter in the UIC which designated the service type (e.g. Army, Navy, Air Force, and so on) of the unit. There were some extra service types which were not being handled by this routine - specifically, letter assignments to represent the Coast Guard, Composite, or Unknown services were not provided. New code was added to represent these additional services.

This program normally writes output which can be used as an SQL script to change the current UIC values for units in the scenario. In this case, the output was written to an unusual file name called SIMU22. Since the user is not expected to recognize this file name, code was added to write the data into a file with a more descriptive name. The output is now written to the more easily recognized file name: $JDATA/scenario/name/alterdata/name_Auto_UIC.sql

3.14 JTLS-2015-12399 Crash When Removing Object From Shelter

A CEP crash occurred when the model was attempting to remove an object from its shelter.

This crash occurred because some general shelter attributes were not properly reset when the last object was removed and the shelter was made empty. Checks were being done to manage objects which were sheltered in tunnels. A reset of the required attributes is now done for equipment shelters to eliminate this crash condition.

3.15 JTLS-2015-12400 Error When Generating NATO Enemy SITREP Report

The model entered an infinite loop while generating a NATO Enemy SITREP report. This occurs when the enemy command hierarchy structure was extremely flat in which a unit had over 300 subordinates.

Real-world C4I systems, which process and consume the NATO Enemy SITREP message, have a maximum message size limitation. To ensure the JTLS-generated Enemy SITREP message is not too large, the code ensures that no more than 350 units are in any one message. Furthermore, in order for these messages to be properly consumed by the real-world systems, the message cannot break the listing of any individual unit's subordinates across two messages. These two requirements negate each other if the scenario database unrealistically holds a single unit which has more than 350 subordinate units.

This is the situation that caused the infinite loop. The model was attempting to generate a report that meets each requirement. This was impossible and caused the model to continue trying. The model now recognizes this situation and stops trying to meet both requirements. Instead, the model now generates a suitable portion of the report and then generates a message indicating that the generation process was aborted because of the issue.

3.16 JTLS-2015-12401 Saving C2PC And Shape Files

The ability to save map graphics as C2PC and Shape files was inadvertently removed.

The ability to save map graphics as C2PC and Shape files has been restored.

3.17 JTLS-2015-12402 Missing Order Keyword

The Order Verification Tool (OVT) identified a missing keyword for a Air-Ground Attack mission when verifying ATO-T orders

The ATO-T was not writing the group name for the second target location on an Air-Ground Attack mission. It had been omitted completely. The code was updated with the proper key word.

3.18 JTLS-2015-12403 Mission Unable To Carry Load

The ATO-T was producing a a error message, stating that the Electronic Combat mission jammer had no range or could not find a enemy unit in range for jamming.

The ATO-T is designed to use database-defined loads when the ATO omits or specifically calls for the BEST AVAILABLE load to be assigned. In the past this was always done using three specific formats in the load field of the record: the word BEST, a dash character " - " or a null field. The ICC-produced ATO now uses the load name "BA" for Best Available. The routine to determine the appropriate load and subject jammer was not recognizing this as BEST AVAILABLE and therefore determined that the load had no jammers on it.

The logic was modified to check for any type of load that might be considered BEST AVAILABLE by first determining if the load was database-defined and, if not, whether the load was defined internally in the ATO-T. If both cases are no, then the load is considered BEST AVAILABLE and the default jammer load for the mission is then considered.

3.19 JTLS-2015-12404 Crash Trying To Split Convoy

If a Detach Order is submitted to a Support Unit, and this results in having to split an existing convoy between the original support unit and newly detached support unit, the model could crash.

This situation seldom happens; therefore, the code had an obvious variable naming error. The variable naming error was corrected and the problem was fixed.

3.20 JTLS-2015-12405 Pushing Orders Crashed

If the user sets up a shadow game and has not defined all of the original games WHIPs, and the orders to be pushed were sent from an unrecognized WHIP, the push order sequence crashes.

This problem was introduced as a result of the order panel redefinition that was part of the original JTLS 4.1 release. The old code used the following logic:

1. If the original sending WHIP is not known in the shadow game, tell the model the order was sent from the WHIP that is assigned as the primary controlling WHIP for the unit to which the order is going.

2. If the unit to which the order is going is unknown, tell the model the order is coming from the primary WHIP for the side that sent the order.

The problem is 4.1 is that if the WHIP does not exist, the model needs the order to exist to know the unit to which the order is being sent, but the order cannot be created until the model knows the WHIP that sent the order. This results in a "Catch-22". The model cannot create the pushed order until it knows the interface program and the interface program cannot be established until the order is created.

To solve this problem, we removed Rule 1 from above. This leave only Rule 2 active. If the WHIP that originally sent an order does not exist in the game that is pushing the order, the sending WHIP is changed to the primary WHIP on the sending side.

That being said, we can only remind users that in order for a Push to accurately replay an order stream, the original scenario and shadow scenario need to match, including the WHIPs that are defined in the game.

3.21 JTLS-2015-12406 Implicit Resupply Crash

The Event Implicit Resupply Done crashed, attempting to access a memory location that the model expected to refer to a High Resolution Unit. Instead, the memory location pointed to a 1-dimensional array.

The problem was that the High Resolution Unit had been killed and removed from the game between the time the Implicit Resupply Event was scheduled and when it was executed. The following sequence of events led up to this problem:

1. An enemy air mission was tasked to attack the HRU.
2. The HRU owned an Air Defense Site and the site fired on the enemy air mission, missing its target.
3. The HRU was scheduled to reload the Air Defense Site using the Implicit Resupply Event.
4. The enemy air mission got close enough to the HRU, fired its weapons and killed the HRU.

The error occurs because when the HRU was destroyed and removed from memory, all of its related Implicit Resupply Events were not canceled. The memory relocation, formerly used by the HRU, was reused for a needed array, and the crash occurred.

When an HRU is destroyed, any Implicit Resupply Events scheduled by the HRU are now canceled.

3.22 JTLS-2015-12407 Logic Error Damaging Targets In Shelter

The model generated a Logic Error when attempting to destroy a target inside a shelter.

The Logic Error was caused by the model incorrectly accessing the target category of the shelter, which could be an Equipment Shelter or a Tunnel, instead of the target category of the targets within the shelter. The proper target category was accessed and a test to damage all targets that can be placed in a shelter was accomplished.

3.23 JTLS-2015-12408 Inappropriate Targets Changed When Sub Changes Depth

When a submarine surfaces to either snorkel depth or surface depth, the model a automatically implements the following target changes:

1. All surface search, air search, and counter-battery radars that have a default status of Turned On, are turned on.

2. All passive radars that have a default status of Turned On, are turned off.

3. All air defense targets that have a default status of Turned On, are turned on.

4. All jammer targets that have a default status of Turned On, are turned on.

When a surfaced or snorkeling submarine executes the submerge order, the model automatically implements the following target changes.

1. All surface search, air search, and counter-battery radars that are Turned On, are turned off.

2. All passive radars that are Turned Off, are turned on.

3. All air defense targets that are turned on, are turned off.

4. All jammer targets that are turned on, are turned off.

The Interface Controller responsible for managing submarines strongly objected to rules 2 and 3.

The problem with Rule 2 is that passive sonar collects do not stop simply because the submarine is surfaced.

The problem with Rule 3 is that some Air Defense targets are not active firing targets, but represent chaff or decoys. This is one of the primary defense capabilities that submarines have against incoming torpedoes. This was thoroughly tested and worked as designed and intended. A torpedo headed for a submarine can be "killed" by a Air Defense Target on board a submarine. When the model automatically turns off the Air Defense Targets when a submarine submerges, the model is taking away one of its primary defensive capabilities. Since the model also decides when the submarine needs to surface based on battery capability, this situation makes it difficult for the IC to properly manage the submarine task.

Fixing Rule 2 is very simple. Passive Sonars are not automatically changed as a result of a submarine surfacing and submerging.

Fixing Rule 3 was more complicated. No changes were made for Rule 3 when the submarine surfaces. The model still turns on all Air Defense Sites when the submarine surfaces. When the submarine submerges, an extra check was added. If the Air Defense Site has Probability of Hit data against torpedoes, then the status of the target is not changed.

3.24 JTLS-2015-12409 Not All SAM Lethality Data Saved

Surface-to-Air Lethality data is assumed to be zero unless a data record from the DDS is read in by the model. When the model saved this data as part of an ASCII checkpoint, only those records that had a positive Probability of Kill value were saved. This means that an original DDS data record that had probability of hit data but no probability of kill data was not being saved as part of the checkpoint. On a checkpoint restart, the probability of hit data would be zero.

The model checks the probability of hit data to determine if an ADA site should fire. The end result of this error was that an Air Defense Site which would fire when the game was started, would no longer fire on a restart if the probability of kill was zero. There was no difference with respect to killing the object. On both the start and restart the object would not be killed because the probability of kill was zero.

The ASCII checkpoint procedure was changed. The Surface-to-Air Lethality record is saved as long as one of its attributes is greater than zero.

3.25 JTLS-2015-12410 Missing Internationalization Strings In WHIP

Some labels on the Message Browser showed a String indicating missing internationalization data when the language was set to Chinese. If the internationalization data is missing, the label should default to English.

Corrected an issue that caused the internationalization to return the error string instead of English when data was missing from the chosen language.

3.26 JTLS-2015-12411 Mission Detections Impossible After Checkpoint Restart

When restarting from a checkpoint, any air missions that had either their Swath Sensors or Jammers turned on were not effective.

The tags indicating that these sensors covered a hex were not being properly created on a checkpoint restart. This means that active missions would show on the JODA that their sensors were turned on, but since the hex tags did not exist, the detection capability of the sensor was not being represented. This only affected actively flying air missions at the time of the checkpoint.

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-2014-12127 DDS - In IADS Edit Mode, Link Targets On Different Sides

In the DDS IADS Edit Mode, a user is able to link a target (comm site, sensor site, or SAM/AAA) to a target on a different side. Linkage should be allowed only between targets on the same side. SVP Error 628 catches this problem, but the DDS should be able to catch the situation.

4.32 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.

4.33 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.

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

DDS report orders help text needs improvement.

4.35 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.

4.36 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.

4.37 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.

4.38 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.

4.39 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.

4.40 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.

4.41 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.

4.42 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.

4.43 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.

4.44 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.

4.45 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.

4.46 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.

4.47 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.

4.48 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.

4.49 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.

4.50 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.

4.51 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.

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

The JTLSConsole needs a library for managing command history.

4.53 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.

4.54 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.

4.55 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.

4.56 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.

4.57 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.

4.58 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.

4.59 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.

4.60 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 this release.

4.61 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.

4.62 JTLS-2014-12291 AAR - Add AAR Documentation

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

4.63 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.

4.64 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.

4.65 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.

4.66 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.

4.67 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.

4.68 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.

4.69 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.

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

The SVPR was unable to auto-fix mismatched barriers.

4.71 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.

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

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

4.73 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.

4.74 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.

4.75 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
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