JTLS
Version Description Document

April 2014

DEPARTMENT OF DEFENSE
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JOINT THEATER LEVEL SIMULATION
(JTLS 4.1.5.0)

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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 4.1.5.0 delivery of the configuration-managed JTLS software suite.

JTLS 4.1.5.0 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 4.1.5.0 of the configuration managed Joint Theater Level Simulation (JTLS®) software suite. JTLS 4.1.5.0 is a Maintenance delivery for the JTLS 4.1 series of releases. JTLS 4.1.5.0 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. Database modifications that were accomplished to upgrade the previous JTLS Standard Database to this current version are summarized in this chapter, as well as APPENDIX B. Detailed descriptions of Engineering Change Proposals (ECPs) and minor model enhancements implemented for this release are provided in Chapter 2.0. Chapter 3.0 summaries all of the bug fixes fixed since the previous official release of JTLS.

Finally Chapter 4.0 REMAINING ERRORS lists all known bugs that have not been fixed. In previous versions, In the past, not enough effort has been allocated to maintaining Chapter 4.0, and the information was not of much use to the typical JTLS user. A new Configuration Management procedure has been implemented at the JTLS development site and as of this version and in all subsequent releases, this VDD chapter will list all of the known issues that have been reported by the end user community and our internal JTLS test team. Each known issue will describe the impact on how a user should either avoid the issue or work-around the issue to reduce the impact on the operational use of JTLS.

JTLS 4.1.5.0 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 4.1.5.0)
- *JTLS ATOT User Guide* (JTLS Document 03, Version 4.1.5.0)
- *JTLS Controller Guide* (JTLS Document 04, Version 4.1.5.0)

- *JTLS Data Requirements Manual* (JTLS Document 05, Version 4.1.5.0)

- *JTLS DDS User Guide* (JTLS Document 06, Version 4.1.5.0)

- *JTLS Director Guide* (JTLS Document 07, Version 4.1.5.0)

- *JTLS Executive Overview* (JTLS Document 08, Version 4.1.5.0)

- *JTLS Installation Manual* (JTLS Document 09, Version 4.1.5.0)

- *JTLS WHIP Training Manual* (JTLS Document 10, Version 4.1.5.0)

- *JTLS Player Guide* (JTLS Document 12, Version 4.1.5.0)

- *JTLS PPS User Guide* (JTLS Document 13, Version 4.1.5.0)

- *JTLS Standard Database Description* (JTLS Document 14, Version 4.1.5.0)

- *JTLS Software Maintenance Manual* (JTLS Document 15, Version 4.1.5.0)

- *JTLS Technical Coordinator Guide* (JTLS Document 16, Version 4.1.5.0)

- *JTLS Entity Level Server User Guide* (JTLS Document 19, Version 4.1.5.0)

- *JTLS Federation User Guide* (JTLS Document 20, Version 4.1.5.0)

- *JTLS C4I Interface Manual* (JTLS Document 21, Version 4.1.5.0)

1.2.3 Updated Documents

- *JTLS Version Description Document* (JTLS Document 17, Version 4.1.5.0)

1.2.4 Delivered Software Components

JTLS 4.1.5.0 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:

- 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:

    Apache Server, version 2.4.7 (APACHE)

    The Apache Server version used in this version of JTLS has been upgraded from 2.4.4 to 2.4.7. This will affect JTLS installation - please refer to Chapter 3 of the *JTLS Installation Manual* for updated installation instructions.

    JTLS XML Serial Repository (JXSR)

    Order Management Authority (OMA)

    Synchronized Authentication and Preferences Service (SYNAPSE)

    XML Message Service (XMS)

    Total Recall Interactive Playback Program (TRIPP)

- Entity Level Server (ELS)

- JTLS Operational Interface (JOI)

- KML Operational Interface (KOI)

- TBMCS/ICC Interface Program (JTOI)

- JTLS Interface Network Navigator (JINN)

- JTLS Order of Battle Editor (JOBE)

- Database Configuration Program (DCP)

- DDS User Interface (DDS)

- Technical Control Tool (TechTool)

Instructions for installing JTLS 4.1.5.0 are provided in the *JTLS Installation Manual*. Installing a previous version of JTLS prior to installing JTLS 4.1.5.0 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 4.1.4.0 for this release.

- The scenario blank40 is the SDBKOR41 database, with all force structure data removed, can be used as a framework for building your customized database.

1.3 INTERFACE COMPATIBILITY

1.3.1 Support Software

JTLS 4.1.5.0 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.

- There are no restrictions on the operating system for client workstations, except that the operating system must have a Java-enabled web browser enabled. JTLS 4.1.5.0 has been tested on the following operating systems:

    Red Hat Linux Enterprise Edition Version 5 and 6

    CentOS Linux Version 5 and 6

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

- Java Version 1.7.0 Update 55 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 55, which expires on 15 July 2014. A new version of JTLS will be released prior to that expiration date.

This version of Java suitable for use on 64-bit Linux systems is part of this delivery. For optimal performance, a user must obtain this 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 4.1.5.0 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 4.1.5.0 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 4.1.5.0 and any previous 4.1 series database, but some errors were discovered in the internally-held database procedures. For this reason, after installing JTLS 4.1.5.0, you must unload and reload any JTLS 4.1 series scenarios that you may have.

> To upgrade your previously installed and modified JTLS 4.1.X.0 scenario for JTLS 4.1.5.0, 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.

> To upgrade your previously installed and modified JTLS 4.1.X.0 scenario for JTLS 4.1.5.0, you must delete the DDS GlassFish directory and recreate it:
>
> - Delete all reports in the DDSC or TRIPP report browser. Select all reports in the report browser. Right-click and select "Delete" from the menu.
>
> - Exit the DDS or the TRIPP.
>
> - For the DDS, enter "cd $JGAME/web_active/dds_as". For the TRIPP AAR, enter "cd $JGAME/web_active/aar_as".
>
> - Delete ("rm –rf <scenario_name>") the desired scenario.
>
> - For DDS start the DCP for the scenario. For TRIPP AAR start the ICP for the scenario.
>
> - Change the Glassfish execution host, and then change it back to the desired host and select save. For AAR in the ICP make sure the "active" checkbox is checked.

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.

1.4.3 Standard Database Changes

Additional Standard Database data improvements made since the last JTLS release are described in APPENDIX B.

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 new 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.
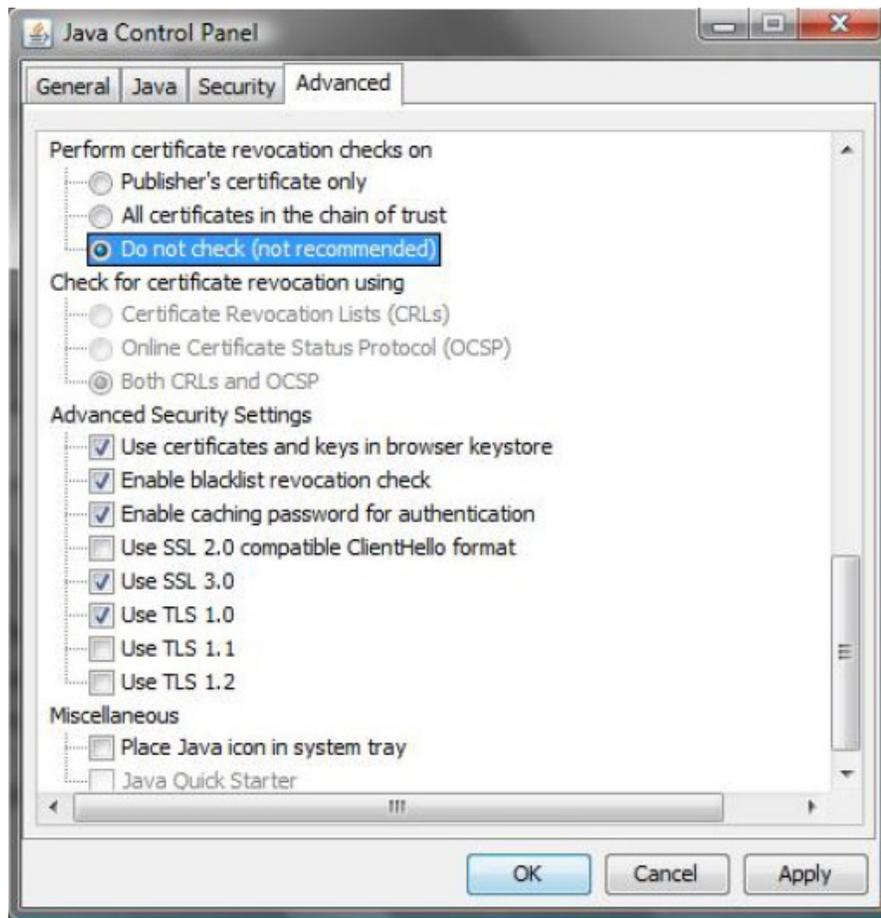
Figure 1.1   Control Panel

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.

2.0 MINOR MODEL ENHANCEMENTS

This chapter summarizes model capabilities added to JTLS 4.1.5.0 as a result of implementing authorized Engineering Change Proposals (ECPs) and minor model enhancements.

2.1 JTLS-2013-11745 Label National Boundaries On Map

Summary of Model Change Request

It was difficult to designate between National Boundaries (NBs) that were being viewed on the WHIP Map, especially when there were a large number of them.

Design Summary

The WHIP National Boundaries filter panel has been updated to highlight a NB and display its name on the map when the cursor is hovering over the NB's entry in the table. Right-clicking the NB's entry in the table will generate a pop-up, allowing the user to center on the NB's start, middle, or end point.

2.2 JTLS-2014-11937 Access Aircraft Loads From Load Assignment Table

Summary of Model Change Request

When a database builder brought up the Load Assignment Table within the DDS, they did not have an easy method to bring up Aircraft Loads to view the contents. This made checking the Load Assignment Array table difficult.

Design Summary

Five new Quick buttons were added to the Load Assignment Table. These buttons, labeled "Load 1" through "Load 5", allow the user to quickly access the desired load for a highlighted row of the Load Assignment Array.

2.3 JTLS-2014-11960 Improve Tooltip For OPAREA And NB Vertex

Summary of Model Change Request

Operation Areas (OPAREAs) and National Boundaries (NB) consist of a series of points or vertices. Each vertex has what is called its Order Number, where a vertex with an Order Number of 2 creates a connecting line with the vertex with an Order Number of 1, and a connecting line with a vertex with an Order Number of 3.

In the DDS, hovering the mouse over a vertex renders only the name of the OPAREA or NB, and it is difficult for the user to know which vertex is which order number, which would be useful for the User when editing OPAREAs or NBs.

Design Summary

The DDS code was modified so that the cursor tooltip now displays the Order Number of each OPAREA and NB vertex when the vertices are displayed on the DDS map.

2.4 JTLS-2014-11961 Allow SYNAPSE Shut Down Of All WHIPs

Summary of Model Change Request

On occasion during exercises, when a time jump is implemented, all of the WHIPs must be shut down. The operators are informed to shut down their own WHIPs on these occasions, but invariably several are left up. The Technical Controller can go into the SYNAPSE and send the remaining WHIPs a shutdown signal, one at a time. It is desired that the Technical Controller be able to shut down all the currently connected WHIPs with a single command.

Design Summary

The ability to specify the command 'shutdown all whips' was added to the SYNAPSE console. This complements the existing ability to issue a 'shutdown ' command to shutdown a specific WHIP.

While this was implemented, a 1 second delay was added to the reading of the whip-list.xml file when it is modified by the ICP. This permits the ICP time to finish the writing of the whip-list.xml file before the SYNAPSE attempts to read it. This situation has in the past resulted in the SYNAPSE crashing.

2.5 JTLS-2014-12016 Organization Attribute Added To ELS Objects

Summary of Model Change Request

When JTLS is used in the GlobalSim federation, the GESI model has a requirement to know the hierarchy structure of JTLS units. GESI discovered the JTLS hierarchy dynamically while the federation was running, since they do not initialize their scenario from a static input file. As a result, the ELS needed to include an attribute on all of the ELS objects which signifies the hierarchy structure of units in the JTLS scenario.

Design Summary

An attribute called "Organization" was added to the ELS and to the EODA data structures. This is a text field which contained integer values, such as "1_3_3_2_4". The first number in that string was always the side number in the JTLS database. Each successive number was a unique value which identifies the subordinate unit. The full unit hierarchy can be deduced by parsing this attribute into the component values. Each unit or ELS object had a unique value for its organization.

Code changes were made in the ELS to generate the organization attributes for all units, objects, and dynamically created objects. When air missions were launched, convoys dispatched, or HRUs and targets created, a new organization value is assigned.

2.6 JTLS-2014-12021 DDS Invalidly Running SVP After Download

Summary of Model Change Request

The "Scenario Download" option in the DDS Tool Menu downloads the scenario and then subsequently runs the SVP. By running the SVP after the download, the process was lengthened considerably.

Design Summary

The "Scenario Download" option in the DDS Tool Menu no longer runs the SVP after a download is executed. The user may still download the scenario and run the SVP by opening a SVPR window (under the DDS "New" menu) and selecting "Run SVP" from the SVPR's Tools menu.

2.7 JTLS-2014-12023 Allow Special Characters In OTH-Gold Track Name Field

Summary of Model Change Request

For an exercise, an US command and control system (CPOF) will be connected with French C2 systems to share their common operational picture. This requires a common way of naming for all entities to be understandable by all systems.

Most of the naming constraints are linked to their SIR (Système d'information Régimentaire, or battalion information system). Their required naming format is 14 digits maximum plus a dot: [XXXXXXXXXXXXXX.], where X should be a character, a number, or a dot. The JOI was used to generate OTH-Gold messages and converts special characters to blank spaces for track names. This conversion was non-compliant with the French system.

Design Summary

An additional setup parameter was added to the JOI Setup Window to allow or disallow special characters in track name fields. Based on the exercise requirement, the operator can set the checkbox to allow special characters in name fields. This setting indicates no special character conversion to take place when the JOI generates the track names. If unchecked (default setting), the JOI will convert any special characters to blank spaces as before.

Since the CLASS-NAME field in CTC message format allows only one hyphen to separate the class and the track name, any hyphens in the name field are still removed for naval units.

Due to the changes in the format of the setup file, previous versions of setup files will not work with this release.

2.8 JTLS-2014-12053 WHIP Requests Output

Summary of Model Change Request

During troubleshooting, it would be useful to be able to output the requests being made by the WHIP to the various web services.

Design Summary

The capability to output the requests being made by the WHIP was added, with the types and frequency of the logging controllable by setting user debug preferences. These preferences may be set by choosing "Preferences" from the "Tools" menu, then selecting "Debug Settings". Clicking on each row in the options table provides a description of what output the given option controls. These options will normally be set at the request of JTLS developers or exercise tech control while troubleshooting a software issue.

2.9 JTLS-2014-12083 Additional Checks Needed For Federation With GESI

Summary of Model Change Request

When JTLS was used in a federated mode with the GESI simulation, some additional SVP checks were need to ensure data compatibility.

Design Summary

GESI has very strict limits on the number of units at each echelon level for each side in the game. These limits were not required in the JTLS data when GESI is not part of a federation. Specifically, GESI data are limited to only one Division (or larger), a maximum of 8 Brigades, 10 Battalions, 6 Companies, and 12 Platoons. Each Platoon is limited to a maximum of 25 combat systems, and each Platoon must be composed of only the same type of combat systems. Since JTLS is not limited by these restrictions, a number of SVP warnings were added to check these data when GESI is federated with JTLS. These limits were added as warnings because JTLS can still run with these data, and GESI will ignore any data which exceed their unit and combat system limits.

2.10 JTLS-2014-12090 Controller Technical Tool Program Developed

Summary of Model Change Request

Investigating issues or problems during an exercise can involve the reconstruction of events that require a lot of digging in the order and message log files. Deciphering the entries in these files can be a time consuming process that often involves correlating the logging data to numerous JTLS data files. In addition, the data from the orders and message logs must then be time sorted to determine which orders were accepted or rejected. The desire is for a program to reduce the amount of time spent on this part of an investigation.

Design Summary

A new program, called the Technical Tool Program or TechTool, has been developed to search the order and message files for keywords. This program can be launched from the command line, the JTLSMenu, or the JavaMenu. A time sorted summary of those messages and orders that contain the keywords are displayed in a GUI. The user can double click on any of the entries to receive the detailed information about the message or order. For messages, the detailed information is the message file combined with its stylesheet to show the English language version of the message. For orders, the group and field names that were submitted are shown with their raw values, and in the case of things such as vocabulary files their equivalent vocabulary name. The details of numerous messages and orders can be viewed simultaneously, and the user has the ability to reduce the list of displayed messages and orders by hiding those they are not interested in.

2.11 JTLS-2014-12091 New Language Management Tool

Summary of Model Change Request

The ability for the WHIP to display text in other languages has existed for numerous JTLS releases. The user has also had the ability to refine the language strings by bundling a package on the Linux JTLS release and moving it to a Windows machine for editing. What has been missing is a way for the end user to perform the initial translation into another language, easily maintain that translation between JTLS releases, and prepare a new system for internationalization (i18n).

Design Summary

A new tool has been developed called the i18n Generation Tool, which permits the generation of some or all of the property files needed for language translation, easy maintenance of these files, configuration of the JTLS environment to use these files, and bundling and unbundling these files for editing on a Windows system. This new tool can be started from a command line with the i18nui command. If initial translation is desired the end user must buy a block of translation credits from Google Translate and place the provided translation key in the $JGAME/data_site/google_translate_key file.

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-2013-11831 Cannot Cancel Airlift Mission Under A Runway Delay

Airlift missions at Home Base, prior to any pickup, could not be canceled when they are experiencing Runway Delay.

The source code logic did not address the cancellation of an Airlift mission in the initial takeoff stage, before any pickup, under the condition of Runway Delay. All similar situations are addressed below.

There are four situations that may occur when canceling an Airlift mission that is under runway delay:

- The Airlift mission is at home base, attempting to fly to an airbase to pickup a portion of the unit that should be moved. No portion of the Airlift load was on board, but it would not cancel even though it was at home. This fix addresses this situation.

- The Airlift mission is at home base, has picked up a portion of the Airlift load at its home base, and cannot take off due to Runway Delay. A possible correction that debarked the Airlift load and returned the aircraft to the hangar was contrary to the current rules of an Airlift: You cannot cancel an Airlift that is carrying a portion of a Unit.

  Any modification or improvement to this rule requires an ECP. This was not done and is not covered by this STR.

- The Airlift mission is at a base other than its home base, and has already dropped off a portion of the Airlift load. The aircraft is not loaded, and it cannot take off because of Runway Delay.

  If this Airlift mission is canceled, it will remain in place until Runway Delay is resolved. Once the Runway Delay is lifted, the mission will cancel by taking off and returning home. This situation is not a part of the STR because it works as designed.

- The Airlift mission is at a base other than its home base, and has picked up a portion of the Airlift load. As stated above, you cannot cancel an Airlift that is carrying a portion of a Unit.

Any modification or improvement to this rule requires an ECP. This was not done and is not covered by this STR.

3.2 JTLS-2014-11917 Warning 1448 Never Generated Due To Data Error

During testing of the new scenario verification tools, a user modified a scenario database to intentionally generate Warning 1448, which is meant to signify that a support unit does not have enough supplies to support all of its units for even a single adjust supply interval. The data were modified accordingly, but the warning was never triggered in the verification program.

Analysis revealed that the normal consumption values for supplies in the unit were all zero. Some of the unit supply attributes were not properly copied. The code was modified to correctly copy these values from the prototype to the unit, and Warning 1448 is now generated properly.

3.3 JTLS-2014-11918 DDS Target/JDPI May Appear Twice On The Map

For small scenarios, regular targets or JDPIs *might appear twice on the DDS map. This would happen when user created a new target/JDPI, and then a new DDS client was launched within two minutes of the creation. The target/*JDPI *would then appear twice, on top of each other, on the new DDS client's map.*

The DDS server updates clients on the objects being displayed in two minute intervals. If a new target/JDPI is created before the DDS client starts its download, the target/JDPI will be added to the map during the initial downloading; but if the scenario is small enough, and the DDS client finishes loading within two minutes, it will receive a notice from the server that a new target/JDPI was inserted in the database. The client then would add that new object on the map, causing the same object to be drawn twice on the map. A check is added when the map display processes a new object: if the object is already on the map, it will not be drawn again.

3.4 JTLS-2014-11919 DDS: LogTree Failed To Send Data To Add Table

When the DDS unit supply category table content number was zero, the Logistic Hierarchy did not add data to the table.

The code that checks for null values in the unit supply category table before adding records to the Logistic Hierarchy was removed.

3.5 JTLS-2014-11920 DDS: LogTree No Support Unit Did Not Delete Record

When a specific supply category is selected in the Logistic Hierarchy, the menu item "No Support Unit" tells the DDS to delete the matching record for the receiving Unit and supply category from the unit supply category table. However, the record was deleted from the Unit's SC Support Unit.

The code was modified to delete the record correctly from the unit supply category table.

3.6 JTLS-2014-11921 DDS: JDPI Did Not Display Subcategory In Sitrep

When a Joint Desired Point of Impact (JDPI) symbol was selected on the map, the subcategory field failed to display in the Sitrep.

Added code to retrieve the subcategory for the Sitrep.

3.7 JTLS-2014-11922 Air Missions Stationary In CEP But Moving In ELS

In the Combat Events Program (CEP), air missions often stopped moving as part of normal operations. For example, this occurred when a unit is picked up or dropped off. During the loading/offloading process, the mission has a speed of zero. The Entity Level Simulation (ELS) was not properly reflecting this stationary condition.

When an air mission stopped moving in the CEP, the ELS was setting the internal attributes to reflect this status. The problem was that the ELS was never publishing this change to a speed of zero on the EODA data server. Code was added to properly report the zero speed and now the ELS speeds agree with those given by the CEP.

3.8 JTLS-2014-11923 DDS Reports Not Displaying

When a Database Development System (DDS) report was selected from the report browser in the DDS Client (DDSC), no report was displayed.

When a user generates a DDS report, the GlassFish J2EE Servlet generates an XML file with the requested data. This XML data is displayed using a Stylesheet delivered as part of the JTLS software. The needed stylesheets could not be accessed by the DDSC because the delivery process corrupted the system soft file links to the needed language stylesheets. The delivery procedure was changed to correct the problem and the soft links have been added to the delivery.

3.9 JTLS-2014-11924 IIP Change Message Shows HUMINT Teams Instead Of HRU

The message received when changing the High Resolution Unit (HRU) parameters on the Intelligence Information Prototype lists the term HUMINT (Human Intelligence) teams instead of currently correct HRU terminology. HUMINT teams were replaced by HRUs several major versions ago and should be removed for consistency.

The file containing the message content was modified to substitute "HRU" where "HUMINT" appeared. This affected English message number 1605. There is no MTF equivalent for this message.

3.10 JTLS-2014-11925 Crash Moving HRU Close To Game Board Edge

Every HRU can now detect things that are located in its general vicinity. The sensors owned by the HRU determine how far it can see. If an HRU was close to the game board edge, the model crashed.

The model was putting down what are called Lookouts in each hex covered by the HRU's owned sensors. If this coverage went off the game board, the model crashed attempting to access a non-existent hex.

A check was added to the model before a Lookout is placed. If it would be placed off the game board, the Lookout is not created.

3.11 JTLS-2014-11926 Completed Mission Not Displayed In Home Hex

When an air mission completes normally and the user shows the mission on the WHIP, the mission location is one hex before its home hex. It should be displayed in its home hex.

When an air mission is completed, the mission location was not being updated. The mission location update can occur after the removal of the mission from the game. There were four specific situations addressed:

- If a mission arrives at its home location and the mission cannot land on that runway, it is possible that the mission may attempt to land anyway. In this circumstance, the mission may crash-land. The model was altered to place the mission at the same location as the runway. This will be the location at which the mission will be displayed on the WHIP.

- If as mission stops at an airbase for any reason, such as dropping off or picking up supplies, the location of the mission is updated to reflect the location of the base, FARP, or Naval Unit at which it landed.

- If an air mission jumped off the game board, the mission location was never updated until the mission moved. For this minute or so of game time, the mission appeared to be on the game board even though it had already jumped off the game board.

- Whenever a mission is destroyed, the location of the mission is sent one last time to the JODA so the mission will be displayed at the correct location.

3.12 JTLS-2014-11927 DDS: Rearranged Preferences Tree

Previously, the DDS Preferences Tool had "Unit-Of-Measure", "Map", "Orders" and "Table" sub-menus. The Unit-Of-Measure sub-menu contained the "Format" option, which has nothing do with Units of Measure.

The code was modified and the "Format" options were removed from the "Unit-Of-Measure" sub-menu. A new sub-menu was created, called "Format", which combines the previous "Format" and "Table" font size and type options.

3.13 JTLS-2014-11928 Can Submit Magic Air Ops Order For Dead Mission

The Magic Air Ops order is only applicable to active missions, but the order could be sent to a mission that was completed or destroyed.

When the Air Tasking Order - Viewer was implemented, a change was made to the model to keep air missions in the game until the end of their ATO period, so the WHIP user could view some historical information concerning a given ATO. When this change was implemented, the model team reviewed all orders that could be given to air missions to determine if the order could or could not be sent to missions that have completed or were destroyed. The Magic Air Ops order was missed as part of this evaluation. The order panel was changed so only active missions are listed.

3.14 JTLS-2014-11929 DDS - Logistic Hierarchy Hanged The DDS

The Logistic Hierarchy can not be brought up while Map object data are downloading. In addition, this action hanged the entire DDS.

When the user opens a Logistic Hierarchy before the Map object data download is complete, the DDS now shows a message to let the User know the download is processing. In addition, the Logistics Hierarchy will wait to open until the download is complete.

3.15 JTLS-2014-11930 Spurious SVP Warning 1444

Scenario Verification Program (SVP) warning message 1444 appeared when a TUP had background consumption and non-zero On-Hand supplies.

Warning 1444 is generated for any Unit that has a non-zero background consumption for some Supply Category (daily consumption, per kilometer usage, etc.), but has no Basic Load, no Stockage Objective, and also no On Hand values for that category. An error in the SVP code caused the Warning to be generated for units with background usage and no Basic Load or Stockage Objective for a category, but that did in fact have a non-zero initial On Hand quantity. The Warning is only appropriate when all three quantities are zero. This error was corrected.

3.16 JTLS-2014-11931 TACELINT Message Field Length Corrected

When the JOI was used to generate TACELINT messages, several data entries in the message fields became longer than the maximum permitted length.

The code was modified to limit the data length to the maximum permitted field length based on the TACELINT message specification.

3.17 JTLS-2014-11932 Inform DDS User When SVP Verification Is Complete

When the SVP is run from the DDS, the output gives the DDS user no indication that the verification is complete.

A print of the word "Done" was added to the SVP output so that the DDS user is properly notified when verification if complete.

3.18 JTLS-2014-11933 Crash Overwatching An HRU

The CEP crashed when an HRU was overwatching another HRU. The code attempted to send an update for an overwatched Target, instead of the overwatched HRU.

The code was modified to send the update for the proper type of object.

3.19 JTLS-2014-11934 DDS: Empty Name Check In The Input Dialog

When a new network or node is created on the DDS map, if the user leaves the name field empty, Oracle throws an exception attempting to add the record to the database.

A check for an empty name field was added, and the DDS now shows an error message that indicates the user must enter a name.

3.20 JTLS-2014-11935 UOM Values Missing In DDS Tables

Some Unit of Measure selection drop-down lists are missing from columns in the DDS tables. This prevents the user from viewing the data within the table in different UOMs and will only display the data in the baseline UOM.

The GUI operates from a series of XML data files located in the $JGAME/data/dds directory. The development team extensively reviewed these files to insure that all appropriate data fields had the correct UOM specification. If a user believes that a column on a specific table is missing the UOM specification, this is considered an error and the problem should be reported so it can be properly fixed.

3.21 JTLS-2014-11936 Consistency In Help Menus And Icon Representation

While performing system checking with CentOS 6.5, it was noted that not all of the applications inform the user which operating system, date/time, and JTLS version they were compiled under. There was also inconsistency in the contents and placement of the Help menu.

All JTLS applications now provide compilation information to the user and have properly located and accessible Help menus.

3.22 JTLS-2014-11938 Restrict Remote Access To Directory Listings

Users were able to access directory listings of the webroot and other game directories using a web browser.

The Apache configuration was modified to disallow directory listings, and the error message shown when attempting to access directory listings was corrected.

3.23 JTLS-2014-11939 SIP JOI Initialization File Not Consistent With CEP

Both the Scenario Initialization Program (SIP) and the CEP write out initialization files for external interface programs and other federates. These files are meant to be consistent. However, the JOI initialization file written by the SIP did not contain all of the data that is written out by the CEP.

The SIP generation code was updated to output the same data as the CEP version.

3.24 JTLS-2014-11940 IFF Mode Type Link Does Not Work On A/C Page

The Aircraft IFF Mode Type link on the OPM Aircraft Class page does not work.

The link existed, but the anchor point for the link did not exist. The code was modified to add the anchor point.

3.25 JTLS-2014-11941 Torpedoes Reporting An Altitude Of 33 Feet

When a side fires torpedoes they can appear on the side's WHIP. It is possible to click on these objects and get a WHIP Sitrep on them. Within that Sitrep, torpedoes were reporting the maximum altitude for their TW.FLIGHT.ZONE. Since this parameter is only used by Cruise Missiles and is meaningless for torpedoes it often contains a nonsensical value for Targetable Weapons that represent torpedoes. However, this value was being printed and was causing confusion to the operator since a torpedo should obviously not have an associated altitude.

The CEP code was modified to check the TW.SUBMERGED.FLIGHT parameter of the missile. If that parameter is set to Yes then the missile represents a torpedo and the code explicitly set its altitude to zero instead of the maximum altitude for the TW.FLIGHT.ZONE database parameter.

3.26 JTLS-2014-11942 DDS: Faction Country Has No Leader Caused DDS Crash

When a new faction is created on the faction country table, the user did not enter a leader, which caused the DDS Command Hierarchy to crash and the DDS to hang.

Added a null check for map objects in the command tree processing the faction country update.

3.27 JTLS-2014-11943 CEP Posture Not Available On IMT Screen

It was noted that the IMT Unit Information Screen has a filter for postures but that the posture INACTIVE does not appear on the filters. This is because the posture INACTIVE and OUT.OF.GAME are equivalent. However, this was causing confusion and after evaluating the use of the posture INACTIVE it was discovered that it was only used in two places within the model, and both those places also checked for the OUT.OF.GAME posture.

In order to reduce confusion the INACTIVE posture was removed from the model and anywhere it was used was replaced with OUT.OF.GAME if necessary. At the same time we noticed the same equivalence with the HRU postures HRU.INACTIVE and HRU.OUT.OF.GAME and reduced them to a single posture.

3.28 JTLS-2014-11944 Route Following TLAMS Not Being Auto Selected

A user filled out a Fire Missile order for a naval ship to fire a TLAM with a specific route to follow. The actual choice of weapon was left up to the model. The naval ship had TLAM-C, TLAM-D, and Tactical TLAMS on boards and was capable of firing all three. The only one of these capable of following a route, as specified in the database, was the Tactical TLAM. However, the model selected to fire a TLAM-C and then informed the user that the route would be ignored. Given that the user had specified a route, and did have weapons capable of following that route, the model should have chosen a weapon that could accomplish the entire order.

The algorithm for selecting a weapon was modified to give a higher priority to route following weapons when a route is specified on the order. Additionally, when a route following weapon is desired and is selected we now keep track of that information on the Fire Mission entity. Thus, when the time arrives to perform the actual firing event if the chosen weapon is not available then a suitable replacement, which accomplishes the same mission as the chosen weapon, can be selected.

3.29 JTLS-2014-11945 Scenario blank41 Not Delivered With JTLS 4.1.4.0

The scenario labeled blank41 was not delivered with JTLS 4.1.4.0.

The scenario blank41 should be updated and delivered with every version of JTLS. The delivery script had been inadvertently changed and did not include the scenario in the delivery archive files. The delivery script has been corrected.

3.30 JTLS-2014-11946 Federation Owning Model Should Not Have GESI Record

The DDS scenario modification SQL script in JTLS 4.1.4.0 was delivered to insert a default record to the federation_owning_model table for GESI federation when the users modify their scenarios from 4.0 or earlier versions to 4.1.4.0 format. The model was not ready to handle this record. It should be taken out from the modification SQL script with 4.1.5.0 release.

The default GESI record was taken out from the DDS scenario modification SQL script in 4.1.5 release. When the users modify their scenarios which was in 4.0 or earlier format to 4.1.5, they will not have the default GESI related record in their federation_owning_model (FAM) table.

The model has been modified such that it now accepts GESI as a valid federation_owning_model. A default record for GESI is not included in the standard databases which were released with version 4.1.5.0. An entry for GESI may be manually added to the FAM table using the DDS as needed. Related model changes to support a link to GESI were also documented in JTLS-2014-11965 Changes To JDS Protocol Needed For GESI Connection, Section 3.46.

3.31 JTLS-2014-11947 SUP Entity Templates Were Not Realistic

Default Ship Unit Prototype (SUP) Default Entity Templates, used by the Entity Template Builder, are created by the Alter Database Program. The SUP Templates were not very rectangular in nature and looked unrealistic.

The Alter Database Program was changed to take the database parameter SUP Radius and compute the equivalent circular area. The area was then used to compute an equivalent rectangular area in which the rectangle was four times as long as it was wide. This rectangular length to width ratio was selected by looking at the ratio of several US naval combatants, especially the US carriers. The default template builder then placed all combat systems within this rectangular area.

The reader should remember that this applies only to the building of default templates. The ELS Template Builder can be used to modify the defaults to match exact specification of particular ships.

3.32 JTLS-2014-11948 DDS Show Icon Exception From Security Manager

After turning on the DDS Show Icons flag, attempts to add a new record to tables demonstrating icons within their table editors caused exceptions that would circumvent the add action from being completed.

Permission attributes are set within the DCP to designate the accessibility allowed by the Java Security Manager for certain jar files. Permissions were changed to allow access to the icon directory, resolving the issue.

3.33 JTLS-2014-11949 CEP Crash During Controller Set Unit Strength

The Controller Order SET UNIT STRENGTH caused the CEP to crash when order fields were completed as follows:

- Unit was an Airbase with squadrons

- Unit Strength was set to zero

A Controller Order that sets an Airbase strength to zero effectively begins the process to remove the Airbase from the game. A similar situation would occur if an Airbase was attrited to zero strength under normal game conditions.

The model acts on an Airbase at zero strength by scrambling aircraft, if possible, from squadrons using the Airbase. This is normal and desirable behavior for the model. However, during the scramble algorithm the CEP crashed due to missing information about the receiving squadron.

Corrections were made to the CEP to include the information needed to automatically create scramble missions with Transfer Aircraft orders.

3.34 JTLS-2014-11950 Query Amphibious Status During Sealift Operation

The model crashed when a formation with units onboard was enroute to perform a sealift load pickup and the operator sent a Amphibious Query to find out the amphibious status of all formations.

The problem was caused because the code saw that the formation was enroute for a pickup but did not distinguish from an amphibious pickup and a sealift pickup. The code was modified to check the primary mission of the formation (Sealift, Amphib Pickup, Moving, etc) before examining the current sub-posture (which can be enroute pickup, enroute assault, etc).

During the course of investigating the problem it was noted that a few formation routines were passing text arguments to transfer data when integers would have been more appropriate. These were also modified. A thorough review of the code found several other locations in which the same problem occurred. One other major routine had an identical situation which could result in a multiple formation conducting a Sealift simply stopping in the middle of the Sealift. This problem was also corrected.

3.35 JTLS-2014-11951 SVP Warnings Appeared When Turned-Off

In the SVP, Warning 1448 appeared even after moving it to the "Warnings to Ignore" list in the SVP Setup panel.

The underlying subroutine that checks that units have adequate supply levels for their supported units did not include the ignore warning array that determines whether a specific warning message should be generated. In this case, warnings 1448, 1449, and 1450 had the same situation and could not be ignored when specified in the SVP Setup panel. The missing logic was added to the routine to correct the problem.

3.36 JTLS-2014-11953 Crash Firing Artillery At Amphibious Assault

An enemy artillery unit was placed adjacent to an amphibious assault location and given a Fire ROE. When damage was assessed against a landing operation, and losses were incurred, the model crashed.

The problem occurred in the logic used to report the resulting damage. A local array, which should have been loaded with the damaged object records so they could be prioritized, was not loaded. However, the code did attempt to get pointers from the array resulting in the crash. The code was modified to properly load the array with the pointers before attempting to retrieve them later in the code.

3.37 JTLS-2014-11954 ELS Showing No Icons For SUP/HUP Tabs

Tabs under the ELS Template Builder (ETB) had icons for TUPs, but lacked them for SUPs and HUPs.

Code to obtain and display symbols for TUPs was present, but did not exist for displaying the symbols for SUPs and HUPs. In addition to these ELS Template Builder (ETB) changes, ELS code changes were also necessary. These code changes were due to the modifications in the supported data files.

3.38 JTLS-2014-11955 ACP MT Record With Missing Fields Crashes OPM

When an Air Control Prototype (ACP) Mission Type (MT) record is created in the DDS without using deep copy, or if an ACP MT record is specifically deleted from the DDS table, the Online Players Manual (OPM) will crash during creation.

The ACP MT record contains the graphics symbol, acceptable launch fraction, launch delay, and default route optimization type for each ACP and mission type. If a record in this table is missing, the OPM crashes because it is attempting to access the non-existent data.

Both the SIP and the CEP now pre-fill the ACP MT DEFAULT OPTIMIZATION attribute to OPTIMAL PATH, and the ACP MT ICON SYMBOL attribute with ICON UNKNOWN AIR MISSION. When the ACP MT table is read, this default data is overwritten with the data from the database. On the other hand, if the ACP MT table data is missing a record, the default data exists and the OPM generation will not crash.

3.39 JTLS-2014-11956 External Updates And Messages Formatted Incorrectly

Several errors were found with the High-Level Architecture (HLA) connection to an external model (GESI), pertaining to the firing object named in weapon detonations and the posture, course, and speed of moving objects which were owned by GESI.

Small changes were made to the code to properly specify the firing object. Similarly minor changes were made to confirm validity of the values for course, speed, and posture for external units.

3.40 JTLS-2014-11957 Minor ELS Errors Found While Federated With GESI

The ELS was used in an integration test to connect with the model GESI. A number of small errors were found and fixed during this federated test.

Corrections were made to address the following issues:

- A unit echelon unexpectedly changed from Company to Division.

- The ELS send external update orders to the CEP when an externally controlled unit changed. Some of these orders were missing the required keywords.

- If the controller set the ELS to run in debug mode, the log file would be opened. If the Controller then tried to open the log file again, the ELS would crash rather than continue.

- Updates to unit speeds were done in the wrong units of kilometer per hour instead of kilometer per day.

- When a convoy returned to its home support unit, the cleanup of entities in the ELS was not properly handled.

Several code changes were made to correct the problems described above. In all cases, these errors were not visible when the ELS was run in a stand-alone mode. Finding these errors was only possible when unit ownership to an external model was performed. All issues were corrected and re-tested with the GESI federate.

3.41 JTLS-2014-11958 Amphib Cumulative Losses Not Updated

During an amphibious assault, the landing craft experienced losses from on-shore artillery bombardment. After the assaulting Unit landed, the attrition was apparent in the Combat System IMT in the reduced Available column, but no losses were shown in the Cumulative KIA column.

As the small boats were destroyed by the artillery weapons, the embarked combat systems that were also destroyed were properly decremented from the Wave array that tracked those systems to the shore. However, the Unit's Cumulative KIA totals were not updated during the process. As each Wave landed, the receiving Unit's Available, Manned, TOE, and Maintenance totals were correctly updated, reflecting the combat system losses during the assault. New logic was incorporated to add the combat system losses to the Unit's Cumulative KIAs as they occur, and then update the IMT after each Wave lands.

While researching this problem, the logic that updates the periodic loss summary was discovered to exclude losses suffered during an amphibious assault, because the logic did not include automatic artillery fire in calculating the periodic losses. This was corrected.

In a related matter, a logic error was generated for each Wave that took losses enroute to the beach. The problem was corrected.

3.42 JTLS-2014-11959 Airbase Shelter Target Count Not Updated

If an airbase gains or loses equipment shelter targets, the shelter count on the IMT screen was not properly updated.

An error in the code caused the model to attempt to update shelter count to the squadron, rather than the airbase - this was a very small typing error with unknown repercussions. We are sure that the airbase information held by the JODA was being corrupted in some way, but do not know the actual corruption. However, the code now properly updates the airbase shelter count.

3.43 JTLS-2014-11962 DDS: OP Area Editing: Adding New Points Problem

When creating a new OPAREA vertex in the DDS, the vertex is placed at a point near the selected location, not exactly at the selected location.

The DDS code was modified, so that OPAREA vertices are placed at the selected location.

3.44 JTLS-2014-11963 Data Provided For ICC Army Unit Icon Field Too Long

When the JTOI was used to update the ICC 2.8.2, the organization type data provided to the icon field of an army unit was too long and failed to create a new record. The army unit icon field in the ICC can be up to 18 characters, and JTLS was providing a organization type 22 characters long.

The routine that generates the JTOI initialization file was modified to produce icon data that is less than 19 characters long. The same routine under the SIP was also modified.

3.45 JTLS-2014-11964 JTOI Output Groups Dialog Not Fully Shown

When the JTOI Debug Output option was selected, the available option toggles were not all shown on the Output Groups dialog. The available option toggles were displayed in a single column and the bottom portion of the list was hidden when the interface was displayed on a smaller size monitor.

The code was modified to display the option toggles in multiple columns if necessary. Similar changes were also made for the JOI program.

3.46 JTLS-2014-11965 Changes To JDS Protocol Needed For GESI Connection

The first integration test of the GlobalSim federation, linking JTLS with the GESI simulation, found a number of deficiencies in the provided data from JTLS. The model name GESI was missing in the enumeration of valid names of external models. There was no method to transmit the command hierarchy of JTLS units to the GESI model. The entity damage states were not consistent with the values expected by GESI. In addition to these changes, it was also found that the Basic Ship Type names were not consistent with the values held by the CEP. These ship types are used by the JOI to communicate with Command and Control systems.

In order to provide the data needed to support this link to GESI, the JDS Protocol was modified. The name GESI was added to the external model enumeration. The ELS Entity Status enumeration was modified to use Mobility and Firepower Kill instead of Slight and Moderate Damage, respectively. A new string attribute called "organization" was added to all the command-

type objects for the ELS. This attribute will be used to hold the location in the hierarchy chain of the object within the scenario chain-of-command. One additional type was added to the list of values of basic ship types. Once these changes were made to the JDS protocol, then the build process was initiated and all of the dependent programs were built.

3.47 JTLS-2014-11966 DDS: Preference, CADRG, And Overview Map Crashed

Currently, the DDS map does not display an overview map on the main map by default. Users may choose to display the overview map from the DDS properties file. However, whenever a user changed the DDS properties file to display the overview map, the DDS crashed.

The DDS map component code was modified to use flags that notify the DDS whether the overview or CADRG map are shown, solving the crash issue.

3.48 JTLS-2014-11967 Destroyed Amphib Boats Listed In Ship Compartment

During an amphibious operation, small boats that were destroyed by anti-invasion mines or shore-based artillery fire while enroute to or from the shore were not reflected as losses in the owning ship's compartments. The destroyed boats were still counted as undamaged in the ship's Sitrep.

Each ship has a small boat array to keep track of the number (by type) that are available for use. When small boats are committed to an amphibious operation, the available count is reduced until they return. If the small boats are destroyed enroute, they are not added back to the small boat array, and therefore cannot be used again.

The model also allocates and tracks the number of small boats in the ship's compartments. When the ship is attacked and compartments are damaged, the contents are also susceptible to damage. Small boats that are damaged in this manner reduce the available count in the small boat array and cannot be used. The boats are not actually removed from the compartment because the owning ship may be resurrected later.

However, no logic exists in the model to update the damaged boat count when a small boat is lost during an amphibious operation away from the ship. A new subroutine was written to add to the damaged boat count in the owning ship's compartment when small boats are lost during an amphibious operation. This change also causes the SITREP to display the correct undamaged small boat counts. Note that no update of the counts in the small boat array was necessary because those counts had already been reduced when the boats were committed to the wave. Again, the boats are not actually removed from the compartment. Only the damaged count is incremented.

In a related issue, small boats that were destroyed by mines in an amphibious operation incorrectly reported artillery fire as the source of attrition in the Unit Damage Report. The problem was fixed to report mines in that situation.

3.49 JTLS-2014-11968 Do Not Permit HRU To Overwatch Self

An HRU, which had recently been Magic Moved to a new location, was sent an order to Overwatch itself. Besides this being an illogical order the HRU proceeded to move back to its old location, which was its side's perceived location of itself, and then determined that it could not carry out the order because it was being instructed to Overwatch an HRU that was performing an Overwatch mission.

The HRU Task order was modified so that it will be rejected if the HRU is instructed to Overwatch itself. In addition, when we update the true location of an HRU we also now update the owning side's perceived location. This prevents the problem of an HRU instructed to Overwatch another HRU that had recently been Magic Moved going to the wrong location.

3.50 JTLS-2014-11969 Failed HRU Not Reported To WHIP Operator

A database specified HRU failed to be created because the parent unit did not have enough combat systems. While this is an SVP error, the SVP only checks if the HRU can be created assuming the parent unit is at 100% of strength. Due to the CSP CS Probability of Initial Failure data parameter a unit seldom arrives at 100% strength and has some combat systems in maintenance, which might prevent the creation of an HRU. This works in accordance with design, but the WHIP operator was not being sent a message about the failure to create the HRU.

The code was modified to ensure that a message is sent to the WHIP operator when a database specified HRU fails to be created. For player ordered HRUs, this message was already being generated.

3.51 JTLS-2014-11970 Faction Create Crash

A new faction was created specifying a Faction Leader, and a list of other units to include. When the order was received by the model it erroneously marked the order as having an error because the list of units was included. When it tried to inform the user of this false error it crashed because the code was not prepared to handle the error message.

The erroneous error check was removed. In addition, the code that attempted to write the message about the false error was only called in two other places, external event orders for Unit Reports and Target Reports. A review of this code showed that the situation it was designed to inform the user about could no longer happen. Therefore the production of these error messages was removed.

3.52 JTLS-2014-11971 Unknown Organization Type Sent To GCCS For Ships

When the JOI was sending OTH-Gold messages to GCCS, some naval units had unknown) category types. The category message field was based on the basic ship type JODA attribute for

naval units, but the attribute did not include all the basic types defined in the CEP, and the JOI was sending the "unknown" category for those types.

The JDSP protocol was modified to include additional enumeration values to match with the basic ship types defined in CEP. The routine that converts the JTLS basic ship type to OTH-Gold category value was also modified to set the category of NAV for those added types.

3.53 JTLS-2014-11972 Cannot Create DDS User In DCP

It was still possible to delete the last user using the popup menu, leading to the situation where no user can be added.

The code was modified so that the delete option is not available in the popup menu when there is only one DDS user. This change also disables the delete option on the Edit menu and the delete button when there is only one user.

3.54 JTLS-2014-11973 WHIP Slides Reverting To Great Circle Line Type

When formatting a WHIP slide, users are able to choose between three line types: Straight Line, Great Circle, and Rhumb Line. Clicking the 'Preview" button shows the user how the slide will look when set to the selected line type and other selected attributes. The issue was that when the user accepted the current formatting by clicking the "OK" button, the slide would always revert to a line type of Great Circle, even if another line type was selected.

The issue was that the line type attribute for the slide was not being saved to the slide's file. A fix was made to include the line type attribute in the save file.

3.55 JTLS-2014-11974 DDS Map Filter Flicker During SVP Unload-SIP Execution

When a scenario user requests an unload of the database via the DDS menu or the SVPR menu, the MapFilter component of the DDS would flicker randomly, resulting in several exceptions being demonstrated.

During an unload process, the normal periodic updates of the map caused the DDS to redisplay attributes of the MapFilter. Blocking those updates during the unload process resolved the flickering.

3.56 JTLS-2014-11975 Orders Sent By Group Editor Not In Order History

When a user would send either a single order or an order group using the Order Group Editor, the sent order(s) would not be saved in the order history.

When adding a sent order to the order history, a check is done on the order to ensure it is a critical order. For orders sent via the Order Group Editor, the flag marking each order as critical was always false. A function was added to check the order's definition for the flag and

appropriately set the order as critical or not. Once this was done, the WHIP logic that kept track of the "Order Send Count" worked as expected.

3.57 JTLS-2014-11976 Magic Move Crash During Amphib Pickup (Subscript)

The model crashed with a "subscript out-of-range" error after a magic move order was sent to a ground unit in the midst of an amphibious pickup.

During an amphibious operation of any type, a temporary "partial" unit is created by the model to manage the transfer of combat systems and supplies through waves of boats or aircraft. The problem was caused by a flaw in the magic move logic that attempted to cancel all model events belonging to the partial unit that was currently being lifted back to the formation. By design, partial units cannot have their own events and do not have a specific hex location, nor do they belong to a set of units in a hex. The code was corrected to only call the routines that cancel model events for a unit that belongs to a unit set, which by definition, is not a partial unit.

3.58 JTLS-2014-11977 Magic Move Crash During Amphib Pickup (Pointer)

The model crashed with a "zero entity pointer" error after a magic move order was sent to a ground unit in the midst of an amphibious pickup.

The code was changed to properly cancel the Amphib Operation Done event for each interrupted wave during a magic move order.

3.59 JTLS-2014-11978 Next Location Not Updated For Moving Naval Formation

When ships are moving in a naval formation, the attribute which holds the next location is never updated. This attribute is the immediate destination of the formation as it moves along its route.

The CEP code was modified to ensure that the next location is properly set for the movement of naval formations.

3.60 JTLS-2014-11979 Inefficiency In ELS While Assigning Crew To Vehicles

When the ELS is running, it must assign specific crew entities to the vehicles on which they are mounted. This process appeared to take successively longer and longer time to complete as the number of entities grew. This issue was only obvious when the ELS was publishing over 200,000 entities.

This problem was the result of a minor error in the processing of the entities which make up the crew of vehicles. The code used a temporary set of objects to make the allocation of crew more efficient. However, this temporary collection of objects was not being cleared out when each unit was disaggregated. As a result, this temporary set grew significantly larger over time, and the search for the correct crew entities took longer and longer. The code was modified to clear out this set and the resulting execution is significantly faster.

3.61 JTLS-2014-11980 Incorrect Course And Speed From MUSE

It was observed during integration testing with MUSE that air missions owned by MUSE were flying at unrealistically high speeds. The course for some of the externally controlled air missions incorrectly changed to zero.

When air missions are flown by MUSE, they send updates to JTLS for the location, course, and speed of the aircraft in units of km per day. The ELS was incorrectly assuming the updates were in units of km per hour. It erroneously converted the speed values to km per day and then sent the extremely large speed updates to the CEP. The ELS code was modified to eliminate the unit of measure conversion.

Similarly, when MUSE sent updates to the ELS for the course of air missions, some of them were incorrectly set to zero. These course errors occurred when the received value was less than zero, which was erroneously converted to exactly zero instead of simply adding 360 degrees to make a positive value. The ELS subsequently sent the course updates to the CEP, and the CEP only accepts positive values for course. A minor modification was made to correctly change the negative values to positive course updates.

3.62 JTLS-2014-11981 ELS Not Moving Convoy Entities When Status Changes

In the ELS, when a convoy changes from a Loading or Offloading status to a Moving status, the entities should be repositioned. No position changes were observed when a convoy changed state in the ELS.

When a convoy is in the loading or offloading state, the entities should be formed up at locations which correspond to any Material Handling Equipment (MHE) targets. When a convoy was moving, the entities should be aligned in a column. The entities in the ELS were being placed in the proper alignments depending on the status of the convoy, but these location updates were not being sent to the EODA for publication. The code was modified to properly update the entity locations when status changes occurred.

3.63 JTLS-2014-11982 Entities Dismounted By Damage While On Ship

A JTLS-owned ship was damaged during an integration test with MUSE. At the time of the damage, a number of crew entities immediately appeared on the MUSE viewer. These entities were not visible before the damage occurred.

All entities on a ship are considered to be mounted on the ship, including all of the crew and equipment which are part of the ship's TOE. In the connection between JTLS and MUSE, it is agreed that MUSE shall ignore all mounted entities. When a vehicle is part of a ship's complement and that vehicle has crew, then the ELS automatically mounted the crew on the vehicle. Since the crew were mounted on the vehicle and the vehicle was mounted on the ship, then MUSE would not view these entities.

When the ship was damaged, some of the on-board equipment were also damaged. When a vehicle was destroyed, then the ELS automatically dismounted any live crew from that vehicle. Since the crew were now dismounted, MUSE was able to view them. The ELS did not account for the fact that the crew were still mounted on the ship. A code change was made to correctly maintain the mounting status for crew when a vehicle was damaged while it was on a ship.

3.64 JTLS-2014-11983 Moving Objects Stop Moving In UAV Mode Of ELS

When the ELS is run in UAV mode, it only published objects which are visible to an externally controlled air mission. This was the normal mode for execution when connected to MUSE. If an object was already moving when the UAV passed over it, then it inadvertently stopped moving in the ELS.

The ELS was properly publishing objects when they were within range of an overhead UAV. However, the attributes to trigger an object to keep moving were not being set. As a result, the object would appear to stop when it was seen by a UAV. The code was modified to correctly assign the movement attributes and now objects continued to move as expected.

3.65 JTLS-2014-11984 Invalid IMT Context-Sensitive Menus And Tool Tip Text

Some IMT columns can be empty if there is no value set for a record in the IMT table. An example of this is the Air Mission IMT screen where the 'Call Sign' column for a mission may not be assigned. The column will be empty, but a mouse right-click was erroneously constructing a related context-sensitive menu with invalid data for some of these empty columns. This was also occurring for the tool tip messages that normally appear for valid columns.

This was corrected by verifying the corresponding column cell selection in the IMT, so that if the selection is empty, it will not display an erroneous context-sensitive menu or pop-up an empty tool tip message when hovering over the empty IMT table cell.

3.66 JTLS-2014-11985 No Object For Naval Formation Route Display

The WHIP's Routes filter had a check box available to display Naval Formation routes. This check box had no effect on the display because there is no JTLS object available to support the creation of a Naval Formation route, as all other route displays have. The ability to display Naval Formation routes is part of a possible future ECP awaiting approval.

The check box filter option to display Naval Formation routes was removed.

3.67 JTLS-2014-11986 No Shelf Life For NATO Differences Report

Every message is supposed to have an assigned "Shelf Life", which is used to limit the number of messages that the XMS Service needs to hold. After the specified shelf life, the XMS will no longer retrieve the message. The message exists on the system, but the XMS does not consider the message active.

The NATO Difference Report, Message 2923, had no such shelf life assigned. This caused the XMS to throw an execution warning. Message 2923, NATO Differences Report, was given a 2 day shelf life.

3.68 JTLS-2014-11991 NATO ENSITREP And OWNSITREP Changes

During a recent exercise, the exercise audience was using a C4I system that interpreted NATO ENSITREP and OWNSITREP messages. A few formatting issues were noted.

The issues noted by the C4I system were corrected.

3.69 JTLS-2014-11993 HRUs With Short Range Weapons Not Engaging

While patrolling, an HRU was only given one opportunity per hex to determine if it could detect and engage an object. If the HRU had short range weapons compared to the size of the hex, the engagement could be skipped due to the distance between the HRU and the object.

An HRU moves several times in a given hex and it is patrolling. The model logic was changed to allow the HRU an engagement chance on each move, whether the move was in the same hex or to a new hex.

3.70 JTLS-2014-11994 Embarked Unit Manned Combat Systems Inconsistency

A ground unit was magic moved from land to a ship in a formation. On the formation, the embarked ground unit showed zero combat systems manned, as would be expected. Later, the same ground unit was magic moved back to shore and all the combat systems remained unmanned.

The manned/unmanned state of combat systems changes in the model, depending on the situation. The magic move process failed to man the combat systems when an embarked unit was moved to a land location. The missing call to the routine that mans the combat systems was added to resolve that problem.

Several related inconsistencies were discovered:

- When a unit starts the game already embarked, the combat systems were manned; however, a unit placed on a formation after game start had unmanned combat systems. The unit arrival logic initially unmanned the embarked unit's combat systems as designed, but then manned them at the end of the arrival process without considering whether the unit was embarked. The logic was changed to man the combat systems only if the unit was not embarked on arrival.

- In a combat system failure or repair event, the embarked unit's combat systems became manned. The logic was changed to unman the combat systems after completing the failure or repair event, if the unit was embarked.

- After a Controller Change Unit Strength order, the embarked unit's combat systems became manned. Again, the logic was changed to unman the unit if embarked.

- When an amphibious pickup was completed, the embarked unit's combat systems were manned. The logic was changed to unman combat systems when the unit became embarked.

3.71 JTLS-2014-11996 Baseline UOM Value Data Missing

Conversions in the Unit of Measure (UOM) conversion files were not being done correctly.

The problem was traced to the <scenario_name>.uc file, which contains baseline conversion factors for the eight categories: Speed, Naval Speed, Distance, Air Distance, Wet Weight, Dry Weight, Area, and Air Speed. One of the line items for a baseline conversion parameter was missing.

Three SVP Errors were added. They check for the consistency and completeness of the $JGAME/ data/order_input.uc and $JDATA/scenario/<scenario_name>/<scenario_name>.uc files, which are used by the WHIP to allow order panel data entry using different UOMs, and by the CEP to allow data display (for example, on IMTs) in different UOMs. The errors are generated if any of the conversions are incorrect or actually missing.

3.72 JTLS-2014-11997 DDS Map Filter State Not Always Preserved After Edit

The DDS map filter state was not preserved after an insert/update/delete edit of a map object if the map filter was set to highlight or blinking.

The DDS code was corrected.

3.73 JTLS-2014-11998 DDS Old TUP POT Icon Stays On The Map

When a user changed a unit's prototype in the DDS, the old TUP Prototype Owned Target (POT) icons stayed on the map when they should have been deleted.

The DDS code was corrected.

3.74 JTLS-2014-11999 DDS CADRG Map Disappears When Editing

If the CADRG map was shown in the DDS, entering or exiting any of the map editing modes would cause the CADRG map to disappear.

The DDS code was corrected.

3.75 JTLS-2014-12000 DDS TMU Component Rework

The DDS Terrain Modification Utility (TMU) did not function correctly.

The TMU code was given a massive rework and rewrite. Individual issues that were found and fixed were not explicitly tracked. As of this release, the Development Team believes that the DDS TMU is fully and efficiently functioning. Any newly discovered TMU issues should be reported and they will be fixed as individual STRs in future releases.

3.76 JTLS-2014-12001 Uninformative Constraint Error In Amphib Order

The Amphibious Pickup and Amphibious Assault orders require the user to select which amphibious assets will be used in the operation. The choices are Port/Beach, Vehicles, Helicopters, or a combination of the three items.

However, if the user only picks the Helicopter option for an Amphibious Assault, the order is rejected by a constraint with the error message: "Beach/Port or Vehicle options must be used. To use Helicopters only, use the Airlift Unit Order." Performing the same action on the Amphibious Pickup order also causes a constraint rejection, but the associated message states: "At least one of the flag attributes must be changed before the order is submitted." This error message does not provide suitable information to inform the WHIP operator of the problem in the order.

The constraint error message was modified and now reads: "Enter either Beach or Port Pickup, or Vehicle Pickup. To use Helicopters only, use the Airlift Unit order."

3.77 JTLS-2014-12002 Fortify: AAR/DDS Report xml File Not Closed Properly

Files were not closed properly if a Report file closed due to an exception, which presented a security vulnerability.

The new Java 7 AutoCloseable Interface was implemented to ensure that files are closed.

3.78 JTLS-2014-12003 SQLSelectBuilder Descending Order Error

In the SqlSelectBuilder utility, the "decending" Order By clause for columns was written as "ascending," causing columns to order their contents incorrectly.

The Order By clause in the SqlSelectBuilder utility was corrected.

3.79 JTLS-2014-12004 GlassFish Server Password Incorrectly Converted

When configuring the GlassFish server, the password for the GlassFish server admin page was being converted incorrectly, due to a Fortify security requirement to dump passwords from memory.

The GlassFish admin password conversion is now written into a temporary file, to allow the GlassFish server admin page to be accessed. The temporary file is then deleted.

3.80 JTLS-2014-12005 Major Enhancements To DBAgent Util Package

The Fortify SQL Injection requirement requires all SQL statements be parameterized and sanitized. This requires a general purpose utility toolkit.

Major enhancements to the DBAgent utility package in the jrptutl_jar project were required to support the Fortify SQL injection requirements. This utility package is used by multiple projects to construct the SQL statements, which are particularly useful to create custom reports.

The enhancements to the DBAgent utility package include new builder classes for constructing "insert," "update," and "delete" SQL statements; support for statement builders to generate parameterized or standard SQL statements; recursive subquery nesting for a simplified and reusable query builder; support for any form of "select," "delete," and "update" query statements; support for "insert" query statements for single or multiple table insertions; enhanced automatic type conversion for data types used by JTLS; tablename, columnname, and alias assertion additions for sanity check; several Fortify corrections for potential null pointer exceptions and resource leaks; and minor code consolidation.

None of these changes result in alterations to the user interface. A general user will see no difference in the operation of the DDS. These corrections simply make the use of the DDS in a web-enabled mode more secure.

3.81 JTLS-2014-12006 Fortify Null Pointer And Resource Leak: Bug Fix

Review of code showed several Java warnings for potential exceptions and security vulnerabilities.

These Java warnings were corrected. None of these changes result in alterations to the user interface. A general user will see no difference in the operation of the DDS. These corrections simply make the use of the DDS in a web-enabled mode more secure.

3.82 JTLS-2014-12007 Fortify SQL Injection: Fix For AAR/DDS Reports

The Fortify SQL Injection fix for DDS and AAR reports requires SQL queries to be parameterized.

The new methods in the DBAgent utility packages, that support construction of parameterized queries, were applied to DDS and AAR reports. None of these changes result in alterations to the user interface. A general user will see no difference in the operation of the DDS. These corrections simply make the use of the DDS in a web-enabled mode more secure.

3.83 JTLS-2014-12008 Fortify SQL Injection: Fix For Common Static Queries

The Fortify SQL Injection fix for common static queries requires SQL queries to be parameterized.

Using the DBAgent utility to dynamically construct queries for most of these common static queries adds unnecessary overhead. Instead, the common parts of these static query

statements are converted to hard-coded strings that are immutable to attack, and the remainder of the queries are parameterized with prepared Statements.

None of these changes result in alterations to the user interface. A general user will see no difference in the operation of the DDS. These corrections simply make the use of the DDS in a web-enabled mode more secure.

3.84 JTLS-2014-12010 DDS DIS Report Combat System Name Incorrect

The combat system name column of the DIS report contained the Generic CS name, which is not unique.

The name column was modified to contain the CSP Name, Generic CS Name, and CSP CS Name.

3.85 JTLS-2014-12011 WSM Password Not Secure

While testing Apache on CentOS 6.5, it was found that the Web Services Manager (WSM) left the password in the shell history if Web Services were running on non-CentOS 6.5 servers.

The problem was corrected by temporarily disabling the shell history log while the RunSshCommand script is running.

Because of variations in how disabling history logs in Linux shells work, this fix was implemented only for C shell-type (csh, tcsh) sub-shells - as C shell is the shell that runs the WSM Java file, this limitation is adequate. If the WSM Java file is run on another type of sub-shell, a built-in password dialog prevents the password from being left in the shell history.

None of these changes result in alterations to the user interface. A general user will see no difference in the operation of the DDS. These corrections simply make the use of the DDS in a web-enabled mode more secure.

3.86 JTLS-2014-12012 Obsolete Code Clean Up

Code review showed obsolete code is packaged in the delivered tape.

The files $JSOURCE/ddsas/aaras_report and $JSOURCE/ddsas/ddsas_report were removed from both NFS and SVN, as they have been replaced.

3.87 JTLS-2014-12013 DDS GlassFish Services Bug Fixes And Enhancement

Many DDS Glassfish services are subject to Fortify SQL injection attack. Fixing this problem requires the queries to be parameterized and sanitized.

While fixing the SQL injection issues, other problems were discovered in the code, such as resource leaks, incorrect use of JDBC schema objects, inefficient workflow, lack of correct data type conversions, and lack of transaction control resulting in an incorrect history log.

Depending on what form the SQL queries take, the common parts of these static query statements are converted to hard-coded strings that are immutable to attack, and the remainder of the queries are parameterized.The dynamic queries are constructed using the DBAgent utility toolkit for parameterization. In addition, table and column names were modified to follow standard JTLS naming convention.

The additional problems named above were corrected and the build scripts modified accordingly.

None of these changes result in alterations to the user interface. A general user will see no difference in the operation of the DDS. These corrections simply make the use of the DDS in a web-enabled mode more secure.

3.88 JTLS-2014-12014 Adjust WHIP For Order Set TW Range Of Effects

The range of valid values accepted by the WHIP for Order Set Targetable Weapon TW.RADIUS.OF.EFFECTS is between 0.0 and 99999.0 km. This WHIP range is incorrect because the DDS specifies a range of 0.0 to 50.0 km. The CEP will not process ranges in excess of 50 km by design.

Changed the range of valid values for entry of the TW.RADIUS.OF.EFFECTS in the ORDER SET TARGETABLE WEAPON orders XML file to minimum 0.0, maximum 50.0 (km) to align with the DDS range for this parameter.

3.89 JTLS-2014-12015 ELS Crash When Creating HRU

The ELS crashed when it was attempting to create a disaggregated HRU. Some HRUs can be created without incident, but others will cause a crash. The crash only occurred when the parent Unit's TUP included one or more subordinate HUPs.

When the ELS created an HRU, it would normally take the entities for the HRU from the parent aggregate Unit. This crash occurred because the parent Unit did not have enough available entities to meet the requirements of the HRU. This entity shortage was due to how the entities in the aggregate unit are initialized. If there was a TUP-sub-HUP substructure, then the entities for the HUPs were not initialized when the aggregate unit was created.

Code was modified to create all the subordinate entities (including for HUPs) in the aggregate units. No further crash was observed with these modifications.

3.90 JTLS-2014-12017 Crash Processing GTGTLOC Record

The ATO-T entered the Simscript debugger while processing the location on a GTGTLOC record.

During improvements to support the MTF 2004 format, several new routines were written to consolidate the conversion of text latitudes and longitudes to the decimal format used by the ATO-T. A small error in the routine condecpor.sim was responsible for this simdebug. The problem

was not caught sooner because this record type had not been used until now. It has been fixed and retested.

3.91 JTLS-2014-12018 C2PC Graphic Overlay Corrections

POLYGON formatted slides generated by the translator would not display as overlays on the Command Control Personal Computer (C2PC) system.

The C2PC overlay slides have not been used since they were initially developed many years ago. In this case, the cause was determined to be a missing space between the key word POLYGON and the text for the first location. We used this opportunity to validate all the different types of shapes represented by the ACO and found several other corrections and two new shapes that needed to be added. It is not known if these corrections were the result of changes made to C2PC that were not passed on to the developers or if they were errors in the original code. The C2PC overlay slides were used again during an exercise with no further problems noted.

3.92 JTLS-2014-12019 DDS: SVPR Exception When Entering Wildcard

Entering a wildcard character would cause the SVPR Error/Warning filter to stop functioning.

Wildcard characters are not presently implemented. Entry of characters, other than a hyphen (used for range indication) are now identified as invalid, and a message is displayed to the user.

3.93 JTLS-2014-12020 DDS: Pipeline Menus And Functionalities Rework

The "Add Target" and "View List/Remove Target" options when editing Pipelines in the DDS were confusing and vague for users, although they functioned correctly.

Selecting the menu item "Change Direction" left two arrows pointing opposite directions on the map. The logic seemed to not work correctly. Other menu items from a node and an arc needed to be reworked.

The "Add Target" option was divided into two separate options: "Assign Pumping Station Target" and "Assign Supply Storage Target", and the function to remove those targets were added to those options. The "Change Direction" logic was corrected.

3.94 JTLS-2014-12022 Unit Remains In Amphib Report After Magic Move

Three units embarked on a naval formation were enroute to an amphibious assault location. One of the units was magic moved off the formation to the shore before the assault began. However, the Amphibious Status Report continued to show the unit as part of the assaulting force. The remaining two units carried out the assault as expected without incident.

When embarked Units are committed to an amphibious operation, the model places the Units in the NF.OPERATION.SET to manage their participation in the assault or pick-up. After the operation is finished, the Units are removed from the Set. If there is only one embarked Unit in

the operation, and it is magic moved off the formation, the Unit is correctly removed from the Set and the operation is terminated.

However, if there are other embarked units remaining in the operation, the logic does not remove the magic moved Unit from the Set and successfully carries-out the operation with the remaining Units. Any Units in the Set, including the magic moved unit that is no longer embarked, appear in the Amphibious Status report. To correct this problem, new logic was added to remove a magic moved Unit from the NF.OPERATION.SET so that it does not appear in the Amphibious Status report as a participant in the operation.

3.95 JTLS-2014-12024 CEP: Crash At Checkpoint From Future Create Minefield

A Minefield Target was scheduled for creation in a JTLS game in the future. The CEP crashed during Save Checkpoint, before the creation time of the minefield. The Create Minefield Target order with a future scheduled time works correctly if no checkpoint is made before the target is created. The crash only occurs if a checkpoint occurs between the Create Target order transmission time and the scheduled target creation time.

The problem was isolated to the write and read checkpoint source code for future Minefield Targets. Key information derived at target creation, such as Name, CCF Number and Political Country, was not determined in advance, because the target had not yet been created at the time of the checkpoint.

The correction may be tested by sending a Controller Create Minefield Target order to occur in the future (i.e. one hour later than current JTLS game time). Once the feedback message for the Create Minefield Target order has been received, the Controller should send a Running Checkpoint order. The Checkpoint should be saved correctly, and the game continues normally. The Minefield Target should be created when the scheduled time is reached.

For the next test, the game should be stopped (no checkpoint needed) and restarted from the last checkpoint (No Push orders required) before the Minefield was created. The Game should start from the checkpoint and create the Minefield Target when the scheduled time is reached.

3.96 JTLS-2014-12025 DDS: TMU Save Did Not Work

When a user edited Hex terrain using the TMU tool in the DDS, and then clicked the "Save" button to save the changes in the database, Java exceptions were thrown in the Java console, and the changes were never saved in the database.

The error was due to incorrect ddsas, the DDS server's GlassFish servlet being called from the DDS. The code is changed to call the correct servlet.

3.97 JTLS-2014-12026 Re-Order Columns For Air Mission Weapon Load

While testing an issue with air weapon loads the tester felt that the order of the columns on the IMT Weapon Load screen was not intuitive. The previous order was to list the Weapons Available,

the Weapons Loaded, and then the Weapons Expended. It was felt that a better order would be Weapons Loaded, Weapons Available, and then Weapons Expended.

The change was made to the XML file that defines the IMT Weapon Load screen to re-order the columns as recommended.

3.98 JTLS-2014-12027 Counter Amphib Losses Not Included In BDA Report

During an amphibious assault operation, ground units on small boats enroute to the beach suffered combat system losses from an auto-fire artillery unit on shore. The Force Side that owned the artillery unit had created a BDA region over the assault location. However, the assaulting unit's combat system losses were not included in the reports generated for the BDA region. The combat system losses were displayed in the unit's Combat System IMT, the Combat System Periodic Summary, Player Damage and Controller Damage Reports, but not in the BDA Report.

The logic that tallies and saves the combat system losses for BDA reports did not have the capability to keep track of losses inflicted by counter-amphibious artillery.

Artillery in the counter-amphibious role fires automatically at incoming waves without the need for a player-ordered fire mission. By design, the BDA report includes combat system losses inflicted only by missions (i.e. air strikes, explicit artillery fire, and missiles) and Lanchester ground combat. Missions hold the firing Force Side and killing object (i.e. aircraft type or targetable weapon) that is needed to determine the correct BDA region, access the losses from the damaged object set, and then populate the BDA report.

The weapon engagement (WE) ground damage set for only counter-amphibious artillery was utilized. The WE ground damage set contains incident records that hold the firing unit and weapon type for each indirect fire result. The Force Side was then determined from the firing unit, enabling the BDA region to be found and then include counter-amphib losses in the BDA report.

3.99 JTLS-2014-12028 SVPR Preferences Being Ignored

The SVP/DDS provides the user with the capability to ignore certain warnings in the generation of the SVP error/warning listing. A situation was encountered where the SVP was still generating warnings within the user-specified ignore warning list. The root cause of the situation was tracked down to the problem that the scenario did not have a preferences directory where the user preferences could be written onto disk. No failure message was written to the user to inform them that the system had failed to save the preferences.

The scripts which setup a scenario, and the one that allows a scenario to be copied, were modified to ensure that a preferences directory exists.

3.100 JTLS-2014-12029 Mismatch Parameters In CEP

A system error checking program discovered an issue with an incorrect number of arguments being passed between routines when executing an order to re-direct a cruise missile. This is an internal code issue that had not demonstrated any adverse affects to the user. If any adverse affects could have been generated they would have been along the lines of refusing to re-direct the missile, or a missile that should not have been able to follow a route accepting an order to follow a route.

The arguments were synchronized between the routines.

3.101 JTLS-2014-12031 SVP Warning Not Reporting Correct Supply Quantity

SVP Warning 1448 alerted the user when a supply unit did not have enough initial supplies to support itself for at least one adjust supply interval. In the text of the warning, the SVP gives the required quantity of the deficient supplies. When the on-hand or the basic load of supplies was set to this given value, then the warning still existed after the data were re-verified.

The SVP was not reporting the correct value to use to rectify this warning. The SVP was reporting the amount of supplies required to cover the consumption. This reported value did not include the amount of supplies needed to issue all of the unit's combat systems. The required initial amount was changed to include the supplies used for combat systems. With this change in the value, this warning properly reported an accurate value for the required amount of supplies.

3.102 JTLS-2014-12032 Logic Error - Naval Unit With Two Activities Scheduled

A JTLS operator can construct a plan for a naval unit, which is a series of orders to be executed in sequence. For example, the operator may want the unit to patrol an OPAREA for an amount of time, then move to another location where it should patrol a different OPAREA. In JTLS, the original patrol, the move, and the subsequent patrol are entered as separate orders, but can all be assigned to the unit as a plan.

The problem is that a naval unit was assigned two move orders: Order A instructed the unit to perform a move at Time A; Order B instructed the unit to perform a move before Order A with no time requirement. The unit should have started and finished the Order B move, then checked the time - if Time A was in the past it should have executed Order A, if it was in the future it should have waited for Time A and then executed Order A. Instead the unit started the Order B move which it was still conducting at Time A, at which time it stopped the Order B move and started the Order A move.

This problem was found to exist for Naval Formations as well as Naval Units. When Order A was submitted an event was scheduled for Time A to start the Order A move. This event was not canceled when Order B was submitted. The code has been changed to perform the cancellation. Now, the complete move for Order B is completed and the unit/formation will execute the Order A move next or at Time A depending on the completion time of the Order B move.

If the second move order has an execution time of "NOW", it will cancel the first order. This is consistent with all naval operations.

3.103 JTLS-2014-12033 Logic Error - Mismatch Target Count For HRU Extract

A logic error was generated when an HRU was attempting to extract a target from a unit that only had viable targets with more elements than required. The HRU properly split off the required elements from a larger target, but did not properly decrement the number of elements still required. At this point in the HRU creation it was known that the unit had sufficient number of target elements, but due to the failure to decrement the number of elements still required it appeared that not enough elements had been available. This caused the logic error.

The code was modified so that the number of elements still required was properly decremented. Once that was accomplished the expected results of the HRU extraction and the actual results corresponded correctly and the logic error is no longer generated.

3.104 JTLS-2014-12034 Expand Precision For SVP Supply Related Errors

SVP Errors 205, 206, 207, and 208, which all check if a TUP's storage capacity is sufficient for its basic load and stockage objective of supplies, did not provide enough precision in the data they were outputting. For instance, within the DDS the stockage objective for a TUP's supplies can be entered with a precision of four decimal places. Error 207 adds up these stockage objectives for dry supplies and compares them to the TUP's dry storage capacity. If the storage capacity was insufficient the storage capacity and the stockage objective summation were printed with 1 significant decimal point, often resulting in rounding down from the true number. Error 207 would then use that same rounded down number to offer the user an auto-correction option within the DDS/SVPR. However, because of the rounding, once corrected the error still existed because the summation was still greater than the storage capacity. This same issue exists for Warnings 1200 and 1201, which compare the wet and dry basic load summations to the TUP's wet and dry carry capacities.

The precision generated with the errors and warnings was increased to four significant digits. This matches the resolution that can be entered for these numbers using the DDS and should ensure that if the DDS is used to enter supply usage numbers that rounding will not result for these errors and warnings.

3.105 JTLS-2014-12035 DDS Delete Record Shows NULL Error Message

In the DDS, attempting to delete a table record that has a dependent record failed as designed, due to the data integrity check, but the returned error was NULL.

The incorrect handling of the response object in the DeleteRecord servlet when returning the error message was corrected.

3.106 JTLS-2014-12036 DDS: Pipeline Editor Find Unit Was Not Working

In the DDS Edit Pipeline window, the pull-down list of potential Operating Units did not appear to include all units. The units were actually there, but it was difficult to find a specific unit. The "Search" function was not available, and the name of the desired new Operating Unit *could not be typed into the field.*

The DDS code was modified so that a user can type the name of a desired new Operating Unit into the field, and the DDS will automatically complete the entry for matching names.

3.107 JTLS-2014-12037 SVP Warnings Could Not Be Ignored Or Missing Data

SVP Warning numbers 1117, 1629, and 1630 were marked to be ignored. However, these warnings still appeared in the output list of errors and warnings. For other warning numbers, the output warning text did not include all of the relevant data. Specifically, for warnings which pertain to a supply shortage or surplus, the warning text contained the unit name, but omitted the required prototype name. This occurred for warnings 1444, 1448, 1449, 1450, and 1501.

Normally the user could select some of the SVP warnings to ignore when verifying the scenario data. The code used to ignore some warnings was not correctly implemented. This code was changed to properly ignore the selected warnings. Similarly, the code was modified to also print out the prototype names for warnings which apply to supplies from the TUP or SUP.

3.108 JTLS-2014-12038 Small Boats Not Repaired After Change Unit Strength

A ship with small boats assigned to various compartments was damaged. After a Controller Change Unit Strength order was submitted to increase the ship's strength to 100%, the small boats remained damaged in their repaired compartments as listed in the Situation Report.

The routine that repairs ship compartments as the result of a Controller Change Unit order that increases the ship's strength did not include logic to repair the small boats assigned to those compartments. Furthermore, the small boat array, which holds the number of small boats available on the ship by type, was not increased. Likewise, logic was lacking to damage small boats when the compartments were damaged by a reduction in strength by the Controller Change Unit Order. New code was added to repair or damage the small boats and adjust the ship's small boat array as appropriate. Note that the model already damages small boats and adjusts the small boat array as a result of weapons assessments.

3.109 JTLS-2014-12039 ELS Crash When Reactivating Unit

The ELS was running while combat was taking place in the aggregate model. A unit was severely damaged, became incapable, and was removed from the game. The Controller reactivated this unit, at which time the ELS crashed.

The crash occurred while the ELS was attempting to reactivate all of the entities in the unit. This unit was not part of the set of disaggregated units so no entities existed for it in the ELS. When

the reactivation code is used, it incorrectly assumed that all reactivated units were disaggregated. Since no entities existed, the crash occurred while trying to access the entity-level objects. A check was added to the code to prevent this crash from occurring.

3.110 JTLS-2014-12040 Logic Error - Magic Moved Unit With Scheduled Move

A unit involved in an attack was magic moved to a new location. As part of the magic move, the unit had all future events canceled and was extracted from the Lanchester battle that it was involved in. As part of the extraction the unit was assessed for its time in the Lanchester battle which caused it to drop in strength below its mandatory Defend to Delay threshold. This caused a withdraw route and a scheduled move to be created for the unit. Finally the unit was placed in its new Magic Move location and the withdraw route was deleted, but the scheduled move remained. When the time for the move occurred the model realized that the unit had no route and threw a logic error. Though this is a self correcting situation, the logic error signifies a mismatch between data in the program.

After assessing and removing the unit from the Lanchester battle, the code used to check if the unit had a route and delete the route, but not check for the movement event since all future events had already been canceled at the start of the magic move. The code was modified to not only delete the route but also check again for any movement events, and then cancel and delete them.

3.111 JTLS-2014-12041 DDS: Arc Deletion Deleted Connected Node

When an arc was deleted from a railroad network on the map, the end node should stay on the map after the arc connection is deleted. However, the node was deleted. Since JTLS version 4.0, the railroad node no longer has the railroad name field (belonging to one railroad network) and is instead shared by multiple networks - this is a legacy of the GDP code and is considered an error.

Also, when a new arc is created between nodes on the map, the newly created arc could not be deleted. The arc appeared to disappear from the map, but remained in the database table.

The code was modified so that railroad nodes are not deleted when railroad arcs are deleted.

The mechanism of assigning database row-id for railroad, railroad arc and railroad node have been modified so that when it comes to deletion, deletion method finds row-id to be able to delete the object.

3.112 JTLS-2014-12042 No Update For New Supply Category In DDS Preferences

When a new Supply Category was created while a DDS client was up and running, its Supply Category Unit of Measure preference list did not update the new Supply Category. If a user assigned a TUP/SUP using that Supply Category, the corresponding fields would display "n/a" for the data.

The code was modified to properly process Supply Category creation, update, and deletion events for the DDS Preference tool.

3.113 JTLS-2014-12043 JXSR Web Service Leaks Memory During Initialization

Part of the initialization process used by the JXSR during start up involves reading all of the JTLS order definition files. These definition files contain numerous data comparisons that are used to constrain the input data provided by the user. The details of each comparison are internally stored by the JXSR so they may be referenced when the user attempts to send the order.

While reading each comparison of an order, the JXSR would request memory to store the details of the comparison without returning the memory from the previous comparison. When this happens, the older memory is lost.

To keep the JXSR from losing memory, the code was modified to account for the previous memory. This change makes the JXSR first check if a data structure still holds memory from the previous constraint details. Any memory from the previous constraint can simply be returned to the system. Otherwise the JXSR is allowed to request more memory.

3.114 JTLS-2014-12044 SVP Error 323 Incorrectly Generated

SVP Error 323 was incorrectly generated by the SVP code.

A Minefield Type (MFT) allowed automatic mine deactivation, but had a Deactivation Late Probability set to 0.0. This meant that after the initial group of mines deactivated at the appropriate time, none of the remaining mines would ever deactivate. The SVP code, however, checked for a zero value for the Exponential Late Mean, which is used to determine mean times between these subsequent mine deactivations. The code should have instead checked for a zero value of the Deactivation Late Probability value. This error was corrected.

3.115 JTLS-2014-12045 Logic Error - Unit Scheduled To Move Already Moving

A moving ground unit ran out of gas, stopped moving, set the flag indicating it needed gas, informed the player of the situation, and requisitioned more gas. Instead of waiting for the requisition to be filled and arrive, the Controller added more gas to the unit via the Set Individual Unit Parameter order adjusting the supply values. The side player then sent a new movement order and the unit resumed moving. When the requisitioned supplies arrived at the unit the out of gas flag was still set so the model assumed the unit needed a new movement event. The out of gas flag was cleared and when scheduling the new movement event the existing movement was discovered and the logic error was produced.

Controllers are instructed that it is better to use the Login Build order to deliver additional supplies to a unit, which would have caused the unit to resume its move automatically. The use of adjusting the supply array via the Set Individual Unit Parameter is for making adjustments when there are inconsistencies in the internal data. Therefore it was felt that the problem was

not with the processing of the Set Individual Unit Parameter, but instead with the execution of the new order. When the player sent the new movement order the model checks if there is gas to execute the move, which there was since the Controller added gas, but does not check the out of gas flag. The model was changed to always turn off the out of gas flag when a new move is being processed and there is gas available.

3.116 JTLS-2014-12046 SVP Error 328 Not Always Generated

SVP Error 328 was not always generated even when the error condition did in fact exist in the data.

The database situation was that an Air Defense Target Type was assigned an Advanced Targetable Weapon that did not have any Surface To Air Lethality (SAL) data set. This should have generated Error 328. It did not because the ADA Type in question also had a Primary Weapon without an SAL data set. The SVP ceased doing any more checks once it found the problem with the primary weapon (it cycled to the next ADA type). The SVP Code was modified so that it now does the Advanced Weapon check even if the Primary Weapon check finds a problem. This allows the user to see and correct both problems, if they are both present, at the same time.

3.117 JTLS-2014-12047 Logic Error - Zero Speed Ship

A number of ships in a formation were hit with a barrage of cruise missiles. This resulted in two of the ships having their strength set to zero, which caused them to stop and start their sinking process. Since the formation only goes as fast as the slowest ship, the rest of the formation stopped. The player wanted to get the rest of the formation ships moving, so he sent an order to cancel the formation, and then sent individual move orders for the formation ships. Unfortunately, the canceling of the formation also adjusted the posture of the sinking ships from Incapable to Defend. When move orders were sent for those two ships the code did not know they were sinking and started an attempt to move them. This attempt involved calculating their speed which, because their strength was still zero, was 0 Km/Day, resulting in the logic error. This is a non-critical situation since the ships could not move and eventually either their sinking event would have removed them from the game or they would have repaired some of their damage.

When a formation is broken up only those ships that are not sinking are placed into Defend posture. Since a sinking ships posture of Incapable is used as an indicator that it is sinking any subsequent orders to the ship are now rejected with a MayDay message. This is the same behavior as if the formation had not been split and an order was sent to the sinking ship.

3.118 JTLS-2014-12048 AAR Reports Table Not Found

The AAR CollectionReport and ObjectAttackReport threw exceptions while trying to create an temporary table.

The problem was caused by an error in the SQLBuilder code and new logic regarding table names implemented to comply with previous Fortify corrections. Both errors were corrected, and the AAR CollectionReport and ObjectAttackReport now generate correctly.

3.119 JTLS-2014-12049 Apache Server Upgraded To 2.4.7

A newer version of Apache was available.

Apache was upgraded and dependent JTLS modules were recompiled.

3.120 JTLS-2014-12050 Exception When Choosing Target, Object Attack Report

When selecting a Target in the WHIP for Object Attack Report, the WHIP threw an exception, stating that the Target had graphics defined, but was not processed because there is no case for processing it.

The WHIP and TRIPP did not support the intended graphic/display type. The unsupported graphic types were removed in all impacted reports definition files.

3.121 JTLS-2014-12051 Logic Error - Air Mission Change Posture Along Route

An Orbiting OAS mission that was given an orbit location next to a national boundary, which it was not permitted to cross, had a refuel chit for a tanker on the other side of the boundary. The OAS mission assumed a posture of Tank Fuel to indicate it was headed for the tanker and kept attempting to find a route to the tanker. On each attempt to find a route the mission would inform the user of the problem and would attempt a second time to optimize a route to the tanker. The second failure would insert an air optimizing move for the same location as the tanker. This air optimizing move would also trigger a logic error because the mission would check if it needed to change posture; a section of code that missions in Tank Fuel or Base Fuel posture should never be in. Other than attempting to access the wrong code branch, and thus generating the logic error, this issue had no other known repercussions.

The code was modified so that when the air mission fails its first attempt to find a path to the tanker it immediately inserts a move to the same location which will cause the mission to try again at that movement time, but because the move is not marked as an optimized move it prevents the mission from going down the wrong code branch. This same issue existed for missions in Base Fuel posture that could not optimize a way to their refuel base and was solved in the same manner.

JTLS-2014-12052 Logic Error - Detection Of Off Board Unit

During initialization of the game, a Force Side update was sent for some units that were off the game board (which corresponds to the concept of out of theater). The model does not perform sensor detections of units or targets off the game board and therefore a logic error was generated for these units. The units involved were both part of a BE Facility within the database,

and the database specified that another force side was to be informed of this BE Facility. This is what caused the generation of the reports.

The code that does the initial reporting of units within BE facilities was modified, so that if the unit is off the game board no detection is processed.

3.122 JTLS-2014-12054 Controller Change Strength Message Confusing

When the Controller submits a Controller Change Unit order to specify the desired new strength of the unit, it is expressed as a fraction between 0.0 and 1.0, which corresponds to a fraction between 0% and 100%. This is the normal way that values which might be considered fractions are expressed on all orders.

However, the compliance report that is sent back reports the desired strength not as a fraction but as the actual strength as a percent. For example, if the Controller send an order to set a unit to 1.0 strength, the compliance report responds that the ordered strength was 1.00 and the actual strength is 100.00. Having both methods of reporting the strength (fraction and percent) in the compliance message is confusing and one consistent methodology should be used.

The decision was made to use the "percent" methodology in the reporting since this matches the Controller Order Implemented Report that is generated in addition to the Controller Compliance Report. The ordered fractional strength was multiplied by 100 for the generation of the message and the message makes clear that this value is a percentage.

3.123 JTLS-2014-12055 AAR Aircraft Kill Summary Incorrect Data Displayed

The AAR Aircraft Kill Summary report was listing engagements rather than kills.

The AAR Aircraft Kill Summary report was corrected to list kills.

3.124 JTLS-2014-12056 Logic Error - Move Detached Embarked Assets

A Detach Unit order was sent to a unit embarked on a formation. The order was successfully carried out, but a logic error message was generated related to moving embarked assets.

An embarked unit has combat systems and supplies that are allocated as "embarked assets" to ships in the formation. When a detach order is received, some of the parent unit's combat systems and supplies are transferred to the new detachment as specified in the order. At the same time, the embarked assets are updated to reflect the transfer.

The logic error was triggered when an internal array that held the supplies of the parent unit showed supplies remaining after the detachment was complete. The problem was caused by a failure to reduce the parent's supplies by the embarked supplies after the transfer. This omission occurred only for supply categories that represent combat systems. Other supply categories were properly processed. To correct the problem, the logic that updated the parent's supply array for combat systems was made identical to other supplies.

While researching this logic error, four errors were discovered in the logic that moves the embarked combat system supply categories. The code incorrectly referenced the weight of one combat system type instead of the total weight of all combat systems of a particular type moved. This typographic error was corrected.

Finally, code was added to unman the combat systems of the parent and new detachment as embarked units.

3.125 JTLS-2014-12057 CEP - End Maintenance, No Aircraft In Maintenance

At the completion of an air mission, a number of aircraft were placed in routine maintenance. Before these maintenance events were completed, the Controller adjusted the strength of the squadron. This Controller action first brings the squadron up to 100% strength and then destroys the necessary combat systems to bring the strength to the user specified strength. When bringing the squadron to full strength all combat systems that are in maintenance are moved to available, and all combat system maintenance events are canceled. Aircraft are represented as a combat system, but routine air mission maintenance is an Aircraft Maintenance event and not a Combat System Maintenance event.

These other events were not canceled, even though the aircraft were moved out of maintenance. When the End Maintenance events did happen there was no corresponding aircraft in maintenance which triggered a logic error. Though the logic error caught the problem the squadron was still given the aircraft from the End Maintenance event resulting in more aircraft at the squadron than specified in the TOE.

The code to change a unit's strength was modified to search for and cancel End Maintenance events associated with the unit in addition to the Combat System Maintenance events.

3.126 JTLS-2014-12058 WHIP Orders - Integer Field Range Popup

Integer fields on order panels display a popup when the cursor hovers over the text field. This popup shows the minimum and maximum values that can be entered in that field.

For integer fields that use units of measure, the popup should be updated to display the minimum and maximum values for the selected unit of measure. However, the popup was not being updated and would only ever display the range for the default unit of measure.

Functionality was added to update the minimum and maximum range values when the unit of measure is changed.

3.127 JTLS-2014-12059 JINN: Sensor Site Was Not Written In Dynamic XML

The JTLS Order of Battle Editor (JOBE) integrator program called the JINN did not write the sensor site type of associated target for a selected unit in the dynamic xml file.

An earlier code correction, that "minefield" type owned or associated targets should not be written in the dynamic xml file, created a logic error - target types after the 'minefield' target type (including the 'sensor side' type target) were not written into the dynamic xml file. This error was corrected.

3.128 JTLS-2014-12060 Hex Depth Can Be Set Greater Than Max Depth

DDS users can set the depth of a hex to greater value than the maximum depth zone, which would lead to an SVP error. The database constraint for the hex depth is -32000, while the constraint for the depth zone is 9999. This causes the autofix feature of the DDS SVPR tool to fail when attempting to fix the error by making the maximum depth zone equal to the depth of the offending hex. The issue can be fixed by changing the related depth zone constraint to match the hex depth constraint.

The related table check constraint for the depth_zone table was modified to be between 0 and 32000 to match the possible maximum hex depth limit and therefore avoid possible mismatch errors in SVP. When the DDS users re-load their scenarios next time, this newly modified check constraint of depth_zone table will be in place. The only thing the DDS users need to do is to re-load their 4.1 versioned scenarios and nothing else.

3.129 JTLS-2014-12061 Crash Doing Log Rollup Report

Creation of the Log Roll-up Report crashed when there was a very unique set of circumstances:

1. *Somewhere in the roll-up hierarchy there needed to be an HRU.*

2. *The HRU needed to own a combat system that was not drawn from a supply category.*

3. *The owned combat system had to be the last combat system in the HRU's combat system list (have the highest index number of all systems owned by the HRU).*

4. *The HRU needed to own and have some supplies on hand.*

If all of these conditions were met, the generation of the Log Roll-up Report would crash. If conditions 2 and 3 were not met, the Log Roll-up Report would not crash the game, but the information reported would be incorrect.

The problem was that when the HRU's supplies were added to the Log Roll-up Report, the supply category number of the supplies was not properly initialized. If the last combat system in the HRUs list was not drawn from a supply category, the parameter was zero and this caused the crash. If the last combat system was drawn from a supply category, the HRU's supplies were added to the combat system's supply category thus producing an inaccurate report.

3.130 JTLS-2014-12062 Critical Messages Not Received By HIP And ELS

The ELS and the HIP connected to the primary JODA in the same manner to receive critical messages from the model. Both used the same peer class type to make this connection. When the ELS and the HIP are connected, then only one of the two programs will receive messages. The most recent program to connect to the JODA received messages, and the other program did not receive any messages.

Both programs needed to receive messages from the model in order to function properly. In the CEP, only one of the two peer connections was retained as a valid recipient of messages. The single recipient was modified to use a collection of message recipients. This enabled any number of programs to connect to the JODA as the HIP-type, and all of these connections would receive messages from the model. This problem also affected the JOI, when more than one JOI was connected to the JODA. The code was modified such that when multiple peer programs were connected (as HIP or JOI), then all programs received messages from the model.

3.131 JTLS-2014-12063 JOBE Crashes When Loading Associated Targets

In some instances, the JOBE crashed while loading associated targets.

Upon close examination, it was discovered that the dynamic xml file for the JOBE was corrupted. For Equipment Shelter associated targets, the target type data block was missing, resulting in a crash that prevented the JOBE from launching. The JINN, which produces the data file, was fixed to write the appropriate data to file.

3.132 JTLS-2014-12064 DDS SVPR Auto Update Resolved Issues

When a scenario developer finishes with a resolution in the SVPR, a checkbox is marked to show the issue has been taken care of. Other scenario developers working on the same scenario would then have to reload the error file in order to be notified that the issue had been resolved. This could cause confusion as to what resolutions are being worked on or not.

An automatic update has been incorporated to notify all scenario developers, working on the same scenario in the SVPR, that a resolution issue has been resolved or not.

3.133 JTLS-2014-12065 DDS Retrieve Scenario From Server For SVPR

Marking a resolution corrected or unresolved, and performing an unload when in the SVPR, both required the scenario name be available to process a job on the server. The scenario name being passed through to the servlet is invalid.

Eliminated passing the scenario name to the servlet, instead obtaining it from the server.

3.134 JTLS-2014-12066 Unnecessary And Misleading Exception Removed

A change to the Oracle database driver caused misleading error messages to be logged to the Glassfish server log when running the DDS, which were a hindrance to trouble shooting DDS server issues.

Code was modified to prevent these misleading errors from being logged.

3.135 JTLS-2014-12067 ELS Crash While Initializing HRU-Owned Targets

The ELS crashed during startup, while it was attempting to initialize targets which were owned by an HRU.

The ELS was attempting to initialize the course and speed for a target which was owned by an HRU. The HRU was moving at the time the ELS was restarted. There was an error in the code, such that it was incorrectly accessing attributes for an aggregate unit instead of an HRU. The code was corrected and the ELS no longer crashes at this point.

3.136 JTLS-2014-12068 CEP - Transferring Detached Embarked Assets

A logic error was generated indicating unaccounted unit supplies when a detachment was made from an embarked unit. Once the code determined what combat system and supply assets would be lost from the parent unit and gained by the new detachment it adjusts the Embarked Assets held by the formation ships to match this new requirement. This entails creating new Embarked Assets for the detaching unit and transferring supplies and combat systems from the Embarked Assets of the parent unit. As part of this process the code keeps a running total of what Embarked Assets are assigned to each unit. At the end of the operation the total Embarked Assets for each unit should equal the combat systems and supplies the unit actually has. This was not happening because we did not properly subtract the supplies used to compose a combat system from the parent unit.

The code was modified to calculate the amount of supplies composing combat systems within the Embarked Assets for both the parent unit and the newly detached unit. Previously this was only being done for the newly detached unit. At the same time we took the opportunity to avoid floating point round-off by checking if any combat system or supply amount was less than 0.00001, and if it was assuming that it should really be zero. The generation of this logic error was due to faulty logic in determining if a discrepancy existed between the assets of the formation and those at the two units. Its purpose is to find such discrepancies, but because of the faulty logic it was generating the logic error erroneously.

3.137 JTLS-2014-12069 Unable to Find Location with MGRS Grid Zone of Ten's

When a location is entered in MGRS format, and the grid zone is a factor of ten (10, 20, 30, etc), the Map Find function did not work.

The error was corrected.

3.138 JTLS-2014-12070 Air Ground Attack Misrouting After Assign Target

The Air Ground Attack Air Mission misrouted following a specific type of Assign Target supplemental order. The Assign Target order will modify Orbiting Air Support or Air Attack missions in mid flight, in order to add a new target.

The Assign Target order that created the problem specified a transit point for the air mission to move through before reaching the new target. The AG Attack Mission jumped immediately to the transit point of the Assign Target order, regardless of the air mission location.

Modifications were made in the source code to the routing algorithm of an Air Ground Attack air mission. If an Assign Target order is sent to the original Air Ground Attack air mission, the air mission will correctly route to a new target transit point, if a transit point is used. The algorithm worked correctly when a transit point was not used in the Assign Target Order.

3.139 JTLS-2014-12071 ELS Crash When Creating New Faction

The ELS crashed when a user attempted to create a new faction.

During the process to create a new faction, the aggregate model deleted one of the units. This deletion caused the ELS to crash because the unit was still associated with one or more sets of objects. Specifically, this unit was either a subordinate of another unit, it was a ship in a formation, or it was embarked on a formation. Any of those conditions were not handled properly in the ELS. The code was modified to correctly clean up the unit associations to prevent this crash from occurring.

3.140 JTLS-2014-12072 JINN: Pre Upload Log Has Not Been Updated

The JINN allows repeated uploads until the user's dynamic.xml file is updated in the database completely. The Upload Log only displayed the fact that the Initial load had begun. The results of any subsequent loads were not displayed. The initial upload data was not displayed correctly.

The JINN now displays the most recent upload_log.xml file on the Pre Upload screen.

3.141 JTLS-2014-12073 SVPR Warning 1610 Incorrectly Described

SVP Warning 1610 stated that "Target JDPI has no associated force side." This is NOT what the SVP code checks. Rather, this SVP Warning checks for an absence of Targets associated with the JDPI. Whether the JDPI Force Side attribute is set has no bearing on the Warning. SVP ERROR 631 is the one that checks for JDPIs with no Force Side specified.

This SVP-Template.xml file was changed so that the SVPR now matches how the Warning is actually generated by the SVP code. Also, the *DDS User Guide* description of this Warning was corrected.

3.142 JTLS-2014-12074 Synapse Eventually Connects Non-Existent JODA

The SYNAPSE will sometimes report a successful connection to the JODA even when the JODA is not running. This event occurs when the JODA and SYNAPSE are configured to run on the same server, the JODA has stopped, and the Synapse is left running and continuously trying to reconnect to the JODA. After some time (typically more than 40 minutes) the SYNAPSE reports a successful connection just before crashing.

Without a host Web Service providing the remote side of a TCP connection a client Web Service will automatically attempt to re-establish a connection to the host Web Service. The Linux system on which the client is running will provide a random port for the local, client side of the connection before attempting to connect to the remote side. This is repeated until the connection is established or the Web Service is stopped. Over time, the random port will match the port on the remote side and a TCP connection will be established, but this connection is improperly looped back to the client. This is the case when the *SYNAPSE* is the client service, the JODA is the host service and both sides of the connection involve the same port on the same server.

The range of ports used by all the Web Services is configured by the ICP. So the ICP was modified to change the range of all Web Service ports. This range will keep the ports for the Web Services outside of the range of ports the Linux system can randomly provide.

3.143 JTLS-2014-12075 Off Board Unit Strength Change Causes Crash

During investigation of a logic error, a Controller Change Unit Strength order caused the game to crash. The unit was at an off-board airbase, and its strength had been set to zero. An airbase tenant squadron was unable to distribute excess supplies before self-lifting from the airbase. Neither supply distributions nor Self-lifting air squadrons should be modeled off the game board.

Controller Change Unit Strength Orders exclude inactive units, units removed from the game, and units that have not arrived in the game, because they can not participate in typical game play.

Controllers should not need to adjust strength of an off-board unit because it is not subject to game play algorithms. Thus, an off-board status was added to the list above, and the feedback message to the user was enhanced to clearly indicate the nature of the Controller Change Unit Strength order rejection.

3.144 JTLS-2014-12076 Illogical Order Of DDS Screen Columns

The column order in several DDS screens is not logical. JTLS scenario builders reported that they prefer seeing different default column ordering in certain DDS screens that they commonly use.

The columns on certain DDS screens were re-arranged based on the JTLS scenario database builders' requests.

3.145 JTLS-2014-12077 Logic Error When Determining Firing Altitude

A logic error occurred when the model was trying to determine the best altitude for an air mission to fire weapons at a target. The mission was unable to find any weapons which were within range of the specified target.

The air mission was flying an air ground attack to fire on two HRUs. When the mission was unable to initially fire on the first target, it tried to adjust its altitude to reach a suitable elevation for firing the weapons it had on board. Before trying to adjust the mission altitude, the model used the perceived location of the first targeted HRU to determine if it was within range. When the model tried to compute a better altitude for firing on the target, it used the actual location of the HRU. The perceived location was within range, but the actual location was out of range. This caused the model to fail at finding a suitable weapon to fire and produce the logic error.

The CEP code was changed such that when it determined the best altitude for an air ground attack, it used a flag to specify whether the perceived or actual location should be used. This code is used by several routines, in most cases the actual locations were the appropriate values. In this case, the perceived location must be used for consistency with the routine which looks for and fires upon the designated target.

3.146 JTLS-2014-12078 ELS Crash When HRU Rejoined Parent Unit

The ELS crashed when a user ordered an HRU to rejoin its parent unit.

This crash occurred while the ELS was attempting to save any pre-defined names for objects involved in the change of the HRU's headquarters. In this case, no pre-defined names were used, so the program crashed because it could not save the non-existent data. Changes were made to first check if pre-defined names are to be used before trying to save that data to disk.

3.147 JTLS-2014-12079 ELS Crash While Clearing All Object Data

The ELS crashed while it was attempting to clear out all the data it holds for objects. This occurred because the CEP was down, but the ELS was left running. This condition is not recommended, but the user chose to do so and a crash occurred.

This crash occurred in a routine that attempted to do cleanup when the ELS lost its connection to the CEP. Normally, users should stop the ELS when the CEP is down, and then restart the ELS when the CEP is back up and running. In this cleanup routine, not all of the object data were handled correctly because some new set associations were added to the main code, but not added to this routine. They have been added, and this resolves the problem. The bigger question remains as to why a user would want to leave the ELS up when the CEP is down. There is no clear reason why an educated user would take this action.

3.148 JTLS-2014-12080 DDS SVPR No Selection Obtained In Table List

In the SVPR, when the corrective action is to open a table, the convention is to highlight a record and to bring up a column editor where possible. Given there are frozen columns, if the solutions necessitated highlighting and bringing up a column editor on a frozen column that is editable, these columns were not following that standard. Records were not highlighting and column editors were not coming up.

Reworked the logic to position the frozen columns alignment, also allowing for bringing up a cell editor where appropriate.

3.149 JTLS-2014-12081 Array List Access Not Properly Synchronized

The ADA Range Ring display caused the Range Rings to be erroneously drawn and slowed the responsiveness of the affected WHIP. An array list reconstruction triggered by a download or update of related objects was not synchronized during the reconstruction causing the any access to the list during this time to be null.

The reconstruction of the array list was synchronized so that access to the list at that time is not permitted until the array is completely reconstituted from any new elements coming from an update or a download. The same synchronization was done to other classes where the problem was apparent.

3.150 JTLS-2014-12082 Corrections For SVP Errors Failed In Map Access

Several SVP errors had corrections which attempted to access objects on the map using SQL code. These corrections did not function properly because accessing the map required the use of the object name or the location.

In some cases, the corrections involving access to the map were removed from those SVP errors. Where possible, some of the corrections were modified to include the location data in the output. This enabled the corrections to properly access the location on the map. The following Errors were affected by these changes: , 113, 114, 116, 610, 617, 619.

3.151 JTLS-2014-12084 Inconsistent Counts For Damaged Entities In Shelters

A controller damaged a unit for which all of the combat systems were being sheltered. As expected, some entities were destroyed and some were placed in maintenance. After suffering this damage, the number of entities shown on the IMT as in shelters was larger than the number of live entities in the unit. After taking a checkpoint, and recovering from it, the number of sheltered entities was significantly different than before the checkpoint.

When a unit is damaged through an order for controller change unit strength, then entities are destroyed or placed in maintenance using specified probabilities. The code to handle these calculations did not consider any possible changes to the number of systems in shelters. Entities in shelters were only reorganized when their owning unit underwent a change in posture. A new

call was added to properly evaluate the sheltered entity counts when any controller damage is done to the unit.

When the model was restarted from a checkpoint, the entities assigned to equipment shelter targets were not correctly instantiated during the read process. Unlike the equipment owned by a single unit, the equipment help by a shelter target was owned by more than one unit. As such, the container objects which hold this equipment must be initialized for each separate unit, and not for one single owner. This was not being done, but has now been corrected. When restarting from a checkpoint, the entity counts were in agreement with the counts before the checkpoint.

3.152 JTLS-2014-12085 Table Initial Size Wider Than DDS Screen

The DDS Jammer Type, Ship Unit Prototype, and Event Times tables had default widths that were wider than the default width of the DDS main screen, when the DDS is started on systems using standard sized monitors. This meant that users could not close these tables using the "exit" button on the table titlebar without first resizing the tables.

The initial size attribute in the table definition xml files for these tables was changed to fit on the DDS main screen.

3.153 JTLS-2014-12086 DDS Command Hierarchy Wrong After Renaming Unit

When a DDS user renamed a unit that had different surbordinate units, one or two of the surbordinates was moved into the root of the Command Hierarchy.

This was because the Command Hierarchy received and processed the update event for the unit whose HHQ was changed before it processed the event for the unit whose name was changed. To fix this, need to make sure not to re-parent a node if its HHQ or owning unit has a new name.

3.154 JTLS-2014-12087 DDS - Renaming TUP Throws Critical Exceptions

When a user tried to rename a TUP in the DDS, the DDS threw critical Java exceptions and could not update its display appropriately.

When the database renames a TUP, all of the units that use that TUP are being updated. However, the DDS can receive a unit update event before it processes the prototype update event, or vice versa. When that happens, the DDS returns a null prototype based on the given name, and exceptions are thrown. The DDS is now corrected to handle prototype renaming cases.

3.155 JTLS-2014-12088 DDS SVPR Autocorrect SQL Injection

The servlet used to perform SVPR automatic corrections was vulnerable to SQL injection attacks since it received the SQL statement from the DDSC.

The code was modified, so that a key is sent to the servlet which is used to look up the correct SQL statement from a file held on the server. The user will see no difference in operation.

3.156 JTLS-2014-12089 Unrecognized DMPIT Location Type

On a GTGTLC Record, there is a field that is labeled "DMPIT:", and it has a location. The 2004 ATOT version does not recognize this location type and throws an error.

This is the first noted use of the specific JDPI location type "DMPIT". A review of the documentation for the USMTF and ICC versions of the ATO-T reveals that there are several other possible JDPI location types that have not been allowed for in the ATO-T code. Currently it only appears that the use of the new nomenclature is restricted to the GTGTLOC record. The software has been modified to use the new type DMPIT, as well as DMPIS, DMPIC, DMPID and DMPIK.

3.157 JTLS-2014-12092 Inexplicit Syntax For i18n Resource Generation

The syntax for the generation of the i18n resources in the checkmenu script was not explicit in exactly which resources were being generated.

The script was updated so the syntax would match that of the checkorder, checkimt, and checksvp scripts.

3.158 JTLS-2014-12149 DDS Non-Edit Mode/Reset Button Unnecessary

During implementation of an authorized model change, developers noted an unnecessary action button on the DDS. The functions of the "Non-Edit Mode / Reset" button could be accommodated without the need for the button itself. The presence of the button was inconsistent with how other user interactions are represented.

The "Non-Edit Mode / Reset" button was removed from the DDS. Its function was to cause the DDS to exit any current Edit mode (such as Editing Pipelines), and return the DDS to the non-edit status. If in an edit mode, the user now need only select the edit mode button for that function again to exit the mode.

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-2014-12095 DDS/WHIP - Add Pause Button To Debug Console

When a large number of exceptions occur, it is impossible to see them in the debug console since it is scrolling too fast. A pause button would allow the user to control the scroll.

The workaround is to copy and paste the data in the debug console into a text editor.

4.11 JTLS-2014-12096 APACHE - SYNAPSE Cannot Run On CentOS 6.5

When the Synapse and Apache are run on the same instance of CentOS 6.5, the Synapse will back up. Running the Synapse and Apache on separate virtual machines on the same machine works correctly.

4.12 JTLS-2014-12097 SVPR - Check Terrain/JMRM Data Preferences

In the SVPR, the user can specify whether to Check Terrain and/or Check JMRM Data. When one or both of those boxes is checked, the SVP can be run and will use those preferences. However, if you re-open the preferences window, then the Check Terrain box and/or Check JMRM Data box are not checked, if they were checked for the previous run.

4.13 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.

4.14 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.

4.15 JTLS-2014-12100 DDS/SVPR - Add Scroll Bar For Descriptions Area

The SVPR Description area holds line items for each of the SVP Warnings and Errors that were generated. The View > Wrap options allow you to wrap these item titles, but you either wrap all of them, or none of them.

4.16 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.

4.17 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.

4.18 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.

4.19 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.

4.20 JTLS-2014-12105 DDS - Preference Save

DDS preferences are currently saved locally, but they should be saved based on the user and scenario.

4.21 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.

4.22 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.

4.23 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.

4.24 JTLS-2014-12109 DDS - Report Browser Should Be Displayed When Opened

If you open a new Report Browser in the DDS, it comes up already iconized. This is inconsistent with how every other process is displayed when opened.

4.25 JTLS-2014-12110 DDS - Printing Multiple DDS Reports Needs Improvement

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.

4.26 JTLS-2014-12111 DDS - Multiple SVPRs, New SVP Error File

More than one SVPR can be started for a single DDS session. This is by design.

Assume there are two DDS sessions, running on different machines (machine 1 and machine 2). Assume also that each session has two SVPRs started. When a new SVP is generated from the Machine 1 DDS SVPR, a single pop-up window asks the user whether the new error file should be used to update the SVPR. However, Machine 2 shows two pop-up windows (not one). On machine 2, you can answer YES to one and NO to the other. This means that the two SVPRs on machine 2 may show different data (not just the same data set filtered differently). A related anomaly is that on machine 1, iconizing the Java Console window also iconizes the pop-up window. On machine 2 however, you can iconize the Java Console window without either of the two pop-up windows being iconized as a result.

4.27 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 DDS is failing and not the database layer.

4.28 JTLS-2014-12113 CEP - Resurrected Equipment Shelter Incorrect Status

The IMT status for equipment shelters shows "prepared" when the model is turned on. After being destroyed through Player or Controller action, they correctly show a status of "destroyed". When resurrected through controller action their status changes to "turned on", which is incorrect. It should change to "prepared".

4.29 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.

4.30 JTLS-2014-12115 SVPR - Generate Unique Error/Warning Numbers

A unique Error/Warning number should be used to identify errors across multiple SVPR developers accessing the same scenario.

4.31 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.

4.32 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.

4.33 JTLS-2014-12118 DDS - Map Dogpile Option Not Working

When a user selects several units on the DDS Map as a group and moves them to a new location, the original relative positions of the units were not maintained. Some users were using this as a feature when moving units, rather than a bug.

4.34 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.

4.35 JTLS-2014-12120 DDS - No Object Selection From Map With IADS Filter

When the "IADS Networks" filter is selected on the DDS Map, it is impossible to select any game object from the Map. In other words, clicking on a unit or target has no effect - no Sitrep or context sensitive menu. One should be able to display IADS Networks and still get Sitreps and access tables by clicking on a unit/target on the Map.

4.36 JTLS-2014-12121 DDS - Drag/Drop Problems When 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.

4.37 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.

4.38 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.

4.39 JTLS-2014-12124 DDS - Table Special Reference Cell Editor, Units/Targets

Not all locations fields in the DDS have the ability to select a location off of the map. All locations should have the same options for entering data into the field.

4.40 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.

4.41 JTLS-2014-12126 AAR - Aircraft Kill Summary Report Parameter 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.

4.42 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.

4.43 JTLS-2014-12128 SYNAPSE_JAR - Refresh Times

The Synapse periodically goes out to see if there is any new information that a WHIP needs to know. For example, if WHIP 1 gives permission to WHIP 2 to load a slide, WHIP 2 needs to know the existence of this slide. This is accomplished by the Synapse periodically sending WHIP 2 the names of the slides it knows about. The time between Synapse updates is hard-coded and is set to a fairly small number. If a very large exercise is being run with hundreds of WHIPs, this update time should be larger to reduce the overall system load on the Synapse. The update time needs to be a part of the configuration file.

4.44 JTLS-2014-12129 DDS/WHIP - New Lines In TextFieldPanel

A new line is currently a valid character in a Text Field on a Report Request Panel as part of the DDS and AAR, but causes the order string to be truncated, making the order invalid.

4.45 JTLS-2014-12130 DDS Report Browser Column Name Changes

In the report browser, "Player" column should be named "User". "Subject" should be "Report Title".

4.46 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.

4.47 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.

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

DDS report orders help text needs improvement.

4.49 JTLS-2014-12134 SVPR - Error/Warning Display Filter Entry Errors

User's can filter SVPR Errors/Warnings by specifying a range of values. For example, entering '1000-3000' will allow display of: none of the Errors since they are all numbered between 100 and 999, all of the Warnings numbered between 1000 and 3000, and no Warnings numbered 3001 or greater. This is fine. However, if the user enters an illogical filter statement (such as '-1000') an error message is displayed in a pop-up window. It would be better if instead of an error message in a pop-up window, the SVPR would not even allow a search string like this (or similar illogical ones) to even be entered in the field.

4.50 JTLS-2014-12135 DCP - Save/Start Option Does Not Work If No Changes

The DCP has an option to save changes and start Glassfish for the DDS. If the user selects this option and has not made any changes to the DCP, the option fails. This should not happen.

4.51 JTLS-2014-12136 DDS - TMU Different Algorithms For Polygon, Area Regions

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.

4.52 JTLS-2014-12137 WHIP - MSEND With Increment In Seconds Not Realizable

When sending game time to the model, a time using Date Time Group format is sent to the CEP. This time can only specify order execution time in minutes. Incrementing the order execution time by seconds is not properly handled. This situation needs to be solved.

4.53 JTLS-2014-12138 DDS - SVPR Error File Deleted/Corrupted By DDS

Two DDS instances were up and running on the same machine. One was stopped, and then, a few moments later, restarted on a different machine. After the second came up, an attempt was made to start an SVP-R on the first machine. This resulted in a pop-up window with an error saying "SVPR: Error while trying to access file in v..." saying "Unable to reach or no current error file exists. Do you wish to perform an unload and verify?" Investigation revealed that in fact the error file was corrupted. Note, nothing is written before the "_". In addition, the title of the window was too long for the title area, and the error box is not resizable.

4.54 JTLS-2014-12139 OVP - Checkorder Script Needs Update

The checkorder script is obsolete. For example, CONVOY is a valid JDSP class, but is treated as an error by checkorder script. This is nothing that will usually be seen or used by an end user.

4.55 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.

4.56 JTLS-2014-12141 DDS - History Table Adds Record Even If Cancel Selected

A hex has a Railroad Node in it, but no Interdiction Point or Bridge Target. When the "Cancel" option is selected from the "Add Target" window for that Node (which has no Targets to add), a record is added to the DDS History Table, but no record should be generated.

4.57 JTLS-2014-12142 WSM/DCP - Reduce Memory Usage

The wsm and dcp scripts have no -Xmx parameter, which are used to indicate how large the Java Virtual Machine should be. This means that the default is 4Gbytes which is much larger than necessary.

4.58 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.

4.59 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.

4.60 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.

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

You cannot add 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.

4.62 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.

4.63 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. This chold table history record needs to be corrected.

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

APPENDIX B.   Version 4.1.5.0 STANDARD DATABASE CHANGES

Major Changes include:

- Added New Sensor Types.

- Added New Sensors to SUPs.

B.1 Updated Aircraft Class – ITM Data (IFF Setting) (Added/Deleted)

- Reviewed and updated all 496 Aircraft Class – ITM Data (IFF Setting)

B.2 Added new UOM

- Added new UOM – KGAL, Muitiplicative Factor - .001, KILO_GALLONS

B.3 Changed Naval Unit Table – Basic Type Column

- Changed the Basic Type Column values for all ships in the Naval Unit table.

B.4 Renamed Ground Units

- Renamed all CAW ground units to CVW.

B.5 Aircraft Class Name Change

- FA22.RAPTOR renamed F22.RAPTOR.

B.6 Aircraft Class Table Change – Fixed Wing Flag

- Changed the Fixed Wing Flag in the Aircraft Class Table from Fixed Wing to Rotary for V22.OSPREY, AV8B.HARRIER and AV8B.PL.HARRIER

B.7 PH/PK Update (Added)

- Added Aircraft Target Class TRANSPORT1 PH & PK data to the SA-6.GAINFU_SAL

- Added Aircraft Target Class TRANSPORT2 PH & PK data to the SA-6.GAINFU_SAL

- Added Aircraft Target Class TRANSPORT3 PH & PK data to the SA-6.GAINFU_SAL

- Added Aircraft Target Class TRANSPORT4 PH & PK data to the SA-6.GAINFU_SAL

B.8 Sensor Table Update (Changed)

- Made Sensor APY2_AAA Link 16 Capable

- Made Sensor APY9_AAA Link 16 Capable

B.9 Sensor Table Additions (Added)

- Built new Sensor named 3RM_SGN Deep Copied from NAVIGAT.RDR_VGN and changed range to 74km

- Built new Sensor named ANRITSU-726_SGN Deep Copied from NAVIGAT.RDR_VGN and changed range to 129km

- Built new Sensor named AWS-1_SAA Deep Copied from AS.RDR.SR_SAA and changed range to 110km

- Built new Sensor named AWS-1_SGN Deep Copied from SS.RDR.LR_SGN and changed range to 110km

- Built new Sensor named BALL.END_SGN Deep Copied from RSS.RDR.SR_SGN and changed range to 37km

- Built new Sensor named BAND.STAND_SGN Deep Copied from RSS.RDR.LR_SGN and changed range to 140km

- Built new Sensor named BEAN.STICKS_SAA Deep Copied from RAS.RDR.SR_SAA and changed range to 187km

- Built new Sensor named BIG.NET_SAA Deep Copied from RAS.RDR.LR_SAA and changed range to 274km

- Built new Sensor named BIG.NET_SGN Deep Copied from RSS.RDR.SR_SGN and changed range to 50km

- Built new Sensor named CALYPSO_SGN Deep Copied from SS.RDR.SR_SGN and changed range to 50km

- Built new Sensor named CHEESE.CAKE_SGN Deep Copied from NAVIGAT.RDR_VGN and changed range to 37km

- Built new Sensor named CRM-200_SGN Deep Copied from NAVIGAT.RDR_VGN and changed range to 51km

- Built new Sensor named CROSS.DOME_SAA Deep Copied from RAS.RDR.SR_SAA and changed range to 116km

- Built new Sensor named CROSS.DOME_SGN Deep Copied from RSS.RDR.SR_SGN and changed range to 50km

- Built new Sensor named CURL.STONE_SGN Deep Copied from NAVIGAT.RDR_VGN and changed range to 64km

- Built new Sensor named DECCA-1226_SGN Deep Copied from NAVIGAT.RDR_VGN and changed range to 46km

- Built new Sensor named DECCA-1290_SGN Deep Copied from NAVIGAT.RDR_VGN and changed range to 46km

- Built new Sensor named DECCA-C181_SGN Deep Copied from NAVIGAT.RDR_VGN and changed range to 177km

- Built new Sensor named DON-2_SGN Deep Copied from NAVIGAT.RDR_VGN and changed range to 64km

- Built new Sensor named ELM-2248_SAA Deep Copied from AS.RDR.SR_SAA and changed range to 250km

- Built new Sensor named EYE.SHIELD_SAA Deep Copied from RAS.RDR.SR_SAA and changed range to 161km

- Built new Sensor named EYE.SHIELD_SGN Deep Copied from RSS.RDR.LR_SGN and changed range to 64km

- Built new Sensor named FIN.CURVE_SGN Deep Copied from NAVIGAT.RDR_VGN and changed range to 44km

- Built new Sensor named FLAT.SCREEN_SAA Deep Copied from RAS.RDR.LR_SAA and changed range to 296km

- Built new Sensor named FLAT.SCREEN_SGN Deep Copied from RSS.RDR.SR_SGN and changed range to 50km

- Built new Sensor named FURKE-E_SAA Deep Copied from RAS.RDR.SR_SAA and changed range to 150km

- Built new Sensor named FURUNO_SGN Deep Copied from NAVIGAT.RDR_VGN and changed range to 37km

- Built new Sensor named GIRAFFE.AMB_SAA Deep Copied from RAS.RDR.SR_SAA and changed range to 168km

- Built new Sensor named GIRAFFE.AMB_SGN Deep Copied from SS.RDR.LR_SGN and changed range to 92km

- Built new Sensor named GOD_EYE_SAA Deep Copied from RAS.RDR.LR_SAA and changed range to 312km

- Built new Sensor named HALF.PLATE_SGN Deep Copied from RSS.RDR.LR_SGN and changed range to 55km

- Built new Sensor named HALF_PLATE_SAA Deep Copied from RAS.RDR.SR_SAA and changed range to 148km

- Built new Sensor named HEAD.NET-C_SGN Deep Copied from RSS.RDR.SR_SGN and changed range to 46km

- Built new Sensor named HEAD_NET-C_SAA Deep Copied from RAS.RDR.SR_SAA and changed range to 148km

- Built new Sensor named KIVACH-3_SGN Deep Copied from NAVIGAT.RDR_VGN and changed range to 81km

- Built new Sensor named LIMAN_SGN Deep Copied from NAVIGAT.RDR_VGN and changed range to 89km

- Built new Sensor named LN-66_SGN Deep Copied from NAVIGAT.RDR_VGN and changed range to 133km

- Built new Sensor named LOTSIYA_SGN Deep Copied from RSS.RDR.SR_SGN and changed range to 37km

- Built new Sensor named MAD_HACK_SAA Deep Copied from RAS.RDR.LR_SAA and changed range to 500km

- Built new Sensor named MAR.SNW10_SGN Deep Copied from SS.RDR.SR_SGN and changed range to 46km

- Built new Sensor named MAR_SNW10_SAA Deep Copied from RAS.RDR.SR_SAA and changed range to 46km

- Built new Sensor named NAYADA_SGN Deep Copied from NAVIGAT.RDR_VGN and changed range to 75km

- Built new Sensor named PALM.FROND_SGN Deep Copied from NAVIGAT.RDR_VGN and changed range to 105km

- Built new Sensor named PECHORA_SGN Deep Copied from NAVIGAT.RDR_VGN and changed range to 60km

- Built new Sensor named PEEL.CONE_SGN Deep Copied from NAVIGAT.RDR_VGN and changed range to 46km

- Built new Sensor named PEEL.PAIR_SGN Deep Copied from RSS.RDR.SR_SGN and changed range to 44km

- Built new Sensor named PFN-513_SAA Deep Copied from RAS.RDR.LR_SAA and changed range to 268km

- Built new Sensor named PFN-513_SGN Deep Copied from SS.RDR.SR_SGN and changed range to 44km

- Built new Sensor named PLANK.SHAVE_SGN Deep Copied from RSS.RDR.LR_SGN and changed range to 140km

- Built new Sensor named PLATE.STEER_SAA Deep Copied from RAS.RDR.LR_SAA and changed range to 296km

- Built new Sensor named POT.DRUM_SGN Deep Copied from RSS.RDR.SR_SGN and changed range to 46km

- Built new Sensor named POT.HEAD_SAA Deep Copied from RAS.RDR.SR_SAA and changed range to 29km

- Built new Sensor named POT.HEAD_SGN Deep Copied from RSS.RDR.SR_SGN and changed range to 46km

- Built new Sensor named RADWAR_SGN Deep Copied from RSS.RDR.SR_SGN and changed range to 46km

- Built new Sensor named RAN-12L_SAA Deep Copied from RAS.RDR.SR_SAA and changed range to 55km

- Built new Sensor named RAN-12L_SGN Deep Copied from SS.RDR.LR_SGN and changed range to 88km

- Built new Sensor named RAN-40L_SAA Deep Copied from AS.RDR.LR_SAA and changed range to 400km

- Built new Sensor named RAW-L(LW08)_SAA Deep Copied from AS.RDR.LR_SAA and changed range to 268km

- Built new Sensor named RAYTH-1650_VGN Deep Copied from NAVIGAT.RDR_VGN and changed range to 33km

- Built new Sensor named SEA.EAGLE_SAA Deep Copied from RAS.RDR.SR_SAA and changed range to 185km

- Built new Sensor named SEA.TIGER_SAA Deep Copied from AS.RDR.SR_SAA and changed range to 168km

- Built new Sensor named SEA.TIGER_SGN Deep Copied from SS.RDR.LR_SGN and changed range to 74km

- Built new Sensor named SKY.WATCH_SAA Deep Copied from RAS.RDR.LR_SAA and changed range to 500km

- Built new Sensor named SLIM.NET_SAA Deep Copied from RAS.RDR.SR_SAA and changed range to 150km

- Built new Sensor named SLIM.NET_SGN Deep Copied from RSS.RDR.SR_SGN and changed range to 46km

- Built new Sensor named SNOOP.PAIR_SGN Deep Copied from NAVIGAT.RDR_VGN and changed range to 64km

- Built new Sensor named SNOOP.PLATE_SGN Deep Copied from NAVIGAT.RDR_VGN and changed range to 37km

- Built new Sensor named SNOOP.SLAB_SGN Deep Copied from RSS.RDR.SR_SGN and changed range to 37km

- Built new Sensor named SNOOP.TRAY1_SGN Deep Copied from NAVIGAT.RDR_VGN and changed range to 46km

- Built new Sensor named SNOOP.TRAY2_SGN Deep Copied from NAVIGAT.RDR_VGN and changed range to 46km

- Built new Sensor named SPIN.TROUGH_SGN Deep Copied from NAVIGAT.RDR_VGN and changed range to 81km

- Built new Sensor named SPN-703_SGN Deep Copied from NAVIGAT.RDR_VGN and changed range to 59km

- Built new Sensor named SPS-10_SGN Deep Copied from SS.RDR.LR_SGN and changed range to 88km

- Built new Sensor named SPS-29C_SAA Deep Copied from AS.RDR.LR_SAA and changed range to 457km

- Built new Sensor named SPS-6C_SAA Deep Copied from AS.RDR.SR_SAA and changed range to 235km

- Built new Sensor named SPS-6C_SGN Deep Copied from SS.RDR.LR_SGN and changed range to 148km

- Built new Sensor named SQUARE.TIE_SAA Deep Copied from RAS.RDR.SR_SAA and changed range to 46km

- Built new Sensor named SQUARE.TIE_SGN Deep Copied from RSS.RDR.LR_SGN and changed range to 64km

- Built new Sensor named SRN-443XT_SGN Deep Copied from RSS.RDR.LR_SGN and changed range to 89km

- Built new Sensor named SRN-743X_SGN Deep Copied from NAVIGAT.RDR_VGN and changed range to 46km

- Built new Sensor named SRN-7453_SGN Deep Copied from NAVIGAT.RDR_VGN and changed range to 111km

- Built new Sensor named STRUT.CURVE_SAA Deep Copied from RAS.RDR.SR_SAA and changed range to 246km

- Built new Sensor named STRUT.CURVE_SGN Deep Copied from RSS.RDR.SR_SGN and changed range to 37km

- Built new Sensor named STRUT.PAIR_SAA Deep Copied from RAS.RDR.LR_SAA and changed range to 266km

- Built new Sensor named STRUT.PAIR_SGN Deep Copied from RSS.RDR.SR_SGN and changed range to 50km

- Built new Sensor named TOP.PAIR_SAA Deep Copied from RAS.RDR.LR_SAA and changed range to 450km

- Built new Sensor named TOP.PAIR_SGN Deep Copied from RSS.RDR.SR_SGN and changed range to 50km

- Built new Sensor named TOP.PLATE_SAA Deep Copied from RAS.RDR.LR_SAA and changed range to 296km

- Built new Sensor named TOP.PLATE_SGN Deep Copied from RSS.RDR.LR_SGN and changed range to 55km

- Built new Sensor named TOP.STEER_SAA Deep Copied from RAS.RDR.LR_SAA and changed range to 296km

- Built new Sensor named TOP.STEER_SGN Deep Copied from RSS.RDR.SR_SGN and changed range to 50km

- Built new Sensor named TYPE-360_SAA Deep Copied from RAS.RDR.SR_SAA and changed range to 246km

- Built new Sensor named TYPE-360_SGN Deep Copied from RSS.RDR.LR_SGN and changed range to 89km

- Built new Sensor named TYPE-363_SAA Deep Copied from RAS.RDR.SR_SAA and changed range to 137km

- Built new Sensor named TYPE-364_SAA Deep Copied from RAS.RDR.LR_SAA and changed range to 300km

- Built new Sensor named TYPE-517_SAA Deep Copied from RAS.RDR.LR_SAA and changed range to 300km

- Built new Sensor named TYPE-753_SGN Deep Copied from RSS.RDR.LR_SGN and changed range to 55km

- Built new Sensor named TYPE-756_VGN Deep Copied from NAVIGAT.RDR_VGN and changed range to 46km

- Built new Sensor named VOLGA_SGN Deep Copied from NAVIGAT.RDR_VGN and changed range to 55km

- Built new Sensor named WM-28_SAA Deep Copied from AS.RDR.SR_SAA and changed range to 55km

- Built new Sensor named WM-28_SGN Deep Copied from SS.RDR.LR_SGN and changed range to 55km

B.10 Added New Sensors to SUPs

- Added sensor 3RM_VGN to SUP - STROMBOLI_IQ

- Added sensor ANRITSU-726_VGN to SUP - HAIZHUI_CN

- Added sensor AWS-1_SAA to SUP - ALVAND_C802_IR

- Added sensor AWS-1_SAA to SUP - ALVAND_SK2_IR

- Added sensor AWS-1_SAA to SUP - HANG.TUAH_MY

- Added sensor AWS-1_SGN to SUP - ALVAND_C802_IR

- Added sensor AWS-1_SGN to SUP - ALVAND_SK2_IR

- Added sensor BAND.STAND_SGN to SUP - DERGACH_RU

- Added sensor BAND.STAND_SGN to SUP - GEPARD_RU

- Added sensor BAND.STAND_SGN to SUP - NANUCHKA.1_RU

- Added sensor BAND.STAND_SGN to SUP - NANUCHKA.3_RU

- Added sensor BAND.STAND_SGN to SUP - NANUCHKA.4_RU

- Added sensor BAND.STAND_SGN to SUP - NEW.FRIGATE_RU

- Added sensor BEAN.STICKS_SAA to SUP - LUDA.1_37MM_CN

- Added sensor BEAN.STICKS_SAA to SUP - LUDA.1_57MM_CN

- Added sensor BEAN.STICKS_SAA to SUP - LUDA.1_HELO_CN

- Added sensor BEAN.STICKS_SAA to SUP - LUDA.1_SAM_CN

- Added sensor BIG.NET_SAA to SUP - KASHIN_RU

- Added sensor BIG.NET_SAA to SUP - RAJPUT_IN

- Added sensor BIG.NET_SGN to SUP - KASHIN_RU

- Added sensor CHEESE.CAKE_VGN to SUP - MATKA_RU

- Added sensor CRM-200_VGN to SUP - ORKAN_PL

- Added sensor CROSS.DOME_SAA to SUP - ABHAY_IN

- Added sensor CROSS.DOME_SAA to SUP - DERGACH_RU

- Added sensor CROSS.DOME_SAA to SUP - GEPARD_RU

- Added sensor CROSS.DOME_SAA to SUP - KATRAN_RU

- Added sensor CROSS.DOME_SAA to SUP - KATRAN_RU

- Added sensor CROSS.DOME_SAA to SUP - KHUKRI_IN

- Added sensor CROSS.DOME_SAA to SUP - KORA_IN

- Added sensor CROSS.DOME_SAA to SUP - NEUSTRASHIMY_RU

- Added sensor CROSS.DOME_SAA to SUP - PARCHIM_2_RU

- Added sensor CROSS.DOME_SAA to SUP - PAUK_2_RU

- Added sensor CROSS.DOME_SAA to SUP - ROPUCHA_2_RU

- Added sensor CROSS.DOME_SAA to SUP - TALWAR_IN

- Added sensor CROSS.DOME_SAA to SUP - TARANTUL_2_RU

- Added sensor CROSS.DOME_SAA to SUP - TARANTUL_4_RU

- Added sensor CROSS.DOME_SGN to SUP - ABHAY_IN

- Added sensor CROSS.DOME_SGN to SUP - DERGACH_RU

- Added sensor CROSS.DOME_SGN to SUP - GEPARD_RU

- Added sensor CROSS.DOME_SGN to SUP - KATRAN_RU

- Added sensor CROSS.DOME_SGN to SUP - NEUSTRASHIMY_RU

- Added sensor CROSS.DOME_SGN to SUP - PARCHIM_2_RU

- Added sensor CROSS.DOME_SGN to SUP - PAUK_2_RU

- Added sensor CROSS.DOME_SGN to SUP - ROPUCHA_2_RU

- Added sensor CRUL.STONE_VGN to SUP - DERGACH_RU

- Added sensor DECCA-1226_VGN to SUP - ALVAND_C802_IR

- Added sensor DECCA-1226_VGN to SUP - ALVAND_SK2_IR

- Added sensor DECCA-1226_VGN to SUP - BANDAR.ABBAS_IR

- Added sensor DECCA-1226_VGN to SUP - BANDAR.ABBAS_IR

- Added sensor DECCA-1226_VGN to SUP - BAYANDOR_IR

- Added sensor DECCA-1226_VGN to SUP - DELVAR_AEL_IR

- Added sensor DECCA-1226_VGN to SUP - DELVAR_AKL_IR

- Added sensor DECCA-1226_VGN to SUP - DELVAR_AWT_IR

- Added sensor DECCA-1226_VGN to SUP - GEARING_PK

- Added sensor DECCA-1226_VGN to SUP - PB.90_IQ

- Added sensor DECCA-1290_VGN to SUP - JIANGHU.1_CN

- Added sensor DECCA-1290_VGN to SUP - JIANGHU.2_CN

- Added sensor DECCA-1290_VGN to SUP - JIANGHU.5_CN

- Added sensor DECCA-1290_VGN to SUP - JIANGHU3_801_CN

- Added sensor DECCA-1290_VGN to SUP - JIANGHU3_802_CN

- Added sensor DECCA-1290_VGN to SUP - JIANGWEI.1_CN

- Added sensor DECCA-1290_VGN to SUP - JIANGWEI.2_CN

- Added sensor DECCA-1290_VGN to SUP - KAMAN_C802_IR

- Added sensor DECCA-1290_VGN to SUP - KAMAN_HARP_IR

- Added sensor DECCA-1290_VGN to SUP - LUDA.3_CN

- Added sensor DECCA-1290_VGN to SUP - LUHAI_CN

- Added sensor DECCA-1290_VGN to SUP - LUHAI_CN

- Added sensor DECCA-1290_VGN to SUP - LUHU_CN

- Added sensor DECCA-1290_VGN to SUP - LUHU_CN

- Added sensor DECCA-C181_VGN to SUP - MIRAZH_RU

- Added sensor DON-2_VGN to SUP - ALLIGATOR_RL_RU

- Added sensor DON-2_VGN to SUP - ALLIGATOR_RL_RU

- Added sensor DON-2_VGN to SUP - ALLIGATOR_RU

- Added sensor DON-2_VGN to SUP - ALLIGATOR_RU

- Added sensor DON-2_VGN to SUP - ALPINIST_AGI_RU

- Added sensor DON-2_VGN to SUP - ALPINIST_RU

- Added sensor DON-2_VGN to SUP - ARKTIKA_RU

- Added sensor DON-2_VGN to SUP - DON_RU

- Added sensor DON-2_VGN to SUP - DON_RU

- Added sensor DON-2_VGN to SUP - GRISHA.II_RS

- Added sensor DON-2_VGN to SUP - GRISHA.III_RS

- Added sensor DON-2_VGN to SUP - KONDA_RU

- Added sensor DON-2_VGN to SUP - LAMA_RU

- Added sensor DON-2_VGN to SUP - LAMA_RU

- Added sensor DON-2_VGN to SUP - MCMV.RUS_RU

- Added sensor DON-2_VGN to SUP - MOD.VANYA_RU

- Added sensor DON-2_VGN to SUP - MOMA_AGI_RU

- Added sensor DON-2_VGN to SUP - MOMA_AGI_RU

- Added sensor DON-2_VGN to SUP - MOMA_RU

- Added sensor DON-2_VGN to SUP - MOMA_RU

- Added sensor DON-2_VGN to SUP - MUKHA_RU

- Added sensor DON-2_VGN to SUP - NATYA.I_RU

- Added sensor DON-2_VGN to SUP - NATYA.I_RU

- Added sensor DON-2_VGN to SUP - NATYA.II_RU

- Added sensor DON-2_VGN to SUP - NATYA.II_RU

- Added sensor DON-2_VGN to SUP - NATYA_I_266M_RU

- Added sensor DON-2_VGN to SUP - NATYA_I_ME_RU

- Added sensor DON-2_VGN to SUP - NATYA_I_ME_RU

- Added sensor DON-2_VGN to SUP - OLEKMA_RU

- Added sensor DON-2_VGN to SUP - POLNOCHNY_C_RU

- Added sensor DON-2_VGN to SUP - POLNOCHNY_D_IR

- Added sensor DON-2_VGN to SUP - POLUCHAT_YPT_RU

- Added sensor DON-2_VGN to SUP - ROPUCHA_2_RU

- Added sensor DON-2_VGN to SUP - ROPUCHA_2_RU

- Added sensor ELM-2248_SAA to SUP - VIKRANT_IN

- Added sensor EYE.SHIELD_SAA to SUP - CH.PHRAYA_H_TH

- Added sensor EYE.SHIELD_SAA to SUP - CH.PHRAYA_TH

- Added sensor EYE.SHIELD_SAA to SUP - DAJIANG_CN

- Added sensor EYE.SHIELD_SAA to SUP - DAXIN_CN

- Added sensor EYE.SHIELD_SAA to SUP - JIANGHU.1_CN

- Added sensor EYE.SHIELD_SAA to SUP - JIANGHU.2_CN

- Added sensor EYE.SHIELD_SAA to SUP - JIANGHU.4_CN

- Added sensor EYE.SHIELD_SAA to SUP - JIANGHU.I_EG

- Added sensor EYE.SHIELD_SAA to SUP - JIANGHU3_801_CN

- Added sensor EYE.SHIELD_SAA to SUP - JIANGHU3_802_CN

- Added sensor EYE.SHIELD_SAA to SUP - LUDA.1_37MM_CN

- Added sensor EYE.SHIELD_SAA to SUP - LUDA.1_57MM_CN

- Added sensor EYE.SHIELD_SAA to SUP - LUDA.1_HELO_CN

- Added sensor EYE.SHIELD_SAA to SUP - LUDA.1_SAM_CN

- Added sensor EYE.SHIELD_SGN to SUP - DAJIANG_CN

- Added sensor EYE.SHIELD_SGN to SUP - DAXIN_CN

- Added sensor EYE.SHIELD_SGN to SUP - JIANGHU.1_CN

- Added sensor EYE.SHIELD_SGN to SUP - JIANGHU.2_CN

- Added sensor EYE.SHIELD_SGN to SUP - JIANGHU.4_CN

- Added sensor EYE.SHIELD_SGN to SUP - JIANGHU3_801_CN

- Added sensor EYE.SHIELD_SGN to SUP - JIANGHU3_802_CN

- Added sensor EYE.SHIELD_SGN to SUP - LUDA.1_37MM_CN

- Added sensor EYE.SHIELD_SGN to SUP - LUDA.1_57MM_CN

- Added sensor EYE.SHIELD_SGN to SUP - LUDA.1_HELO_CN

- Added sensor EYE.SHIELD_SGN to SUP - LUDA.1_SAM_CN

- Added sensor EYE.SHIELD_SGN to SUP - LUDA.2_CN

- Added sensor FIN.CURVE_VGN to SUP - DAJIANG_CN

- Added sensor FIN.CURVE_VGN to SUP - DAJIANG_CN

- Added sensor FIN.CURVE_VGN to SUP - JIANGHU.4_CN

- Added sensor FIN.CURVE_VGN to SUP - LUDA.1_37MM_CN

- Added sensor FIN.CURVE_VGN to SUP - LUDA.1_57MM_CN

- Added sensor FIN.CURVE_VGN to SUP - LUDA.1_HELO_CN

- Added sensor FIN.CURVE_VGN to SUP - LUDA.1_SAM_CN

- Added sensor FIN.CURVE_VGN to SUP - LUDA.2_CN

- Added sensor FLAT.SCREEN_SAA to SUP - KARA_RU

- Added sensor FLAT.SCREEN_SAA to SUP - VIKRAMADITYA_IN

- Added sensor FLAT.SCREEN_SAA to SUP - VIKRAMADITYA_IN

- Added sensor FURKE-E_SAA to SUP - NEW.FRIGATE_RU

- Added sensor FURKE-E_SAA to SUP - STEREGUSHCHIY_RU

- Added sensor FURUNO_VGN to SUP - CAT_IR

- Added sensor FURUNO_VGN to SUP - SOHO_KP

- Added sensor GIRAFFE.AMB_SAA to SUP - ORKAN_PL

- Added sensor GIRAFFE.AMB_SGN to SUP - ORKAN_PL

- Added sensor GOD.EYE_SAA to SUP - LUHU_CN

- Added sensor HALF.PLATE_SAA to SUP - DELHI_IN

- Added sensor HALF.PLATE_SAA to SUP - GRISHA.V_RU

- Added sensor HALF.PLATE_SAA to SUP - MOD.KRIVAK.I_RU

- Added sensor HALF.PLATE_SGN to SUP - GRISHA.V_RU

- Added sensor HALF.PLATE_SGN to SUP - MOD.KRIVAK.I_RU

- Added sensor HEAD.NET-C_SAA to SUP - ARKTIKA_RU

- Added sensor HEAD.NET-C_SAA to SUP - KARA_RU

- Added sensor HEAD.NET-C_SAA to SUP - KASHIN_RU

- Added sensor HEAD.NET-C_SAA to SUP - KRIVAK.I_RU

- Added sensor HEAD.NET-C_SAA to SUP - KRIVAK.II_RU

- Added sensor HEAD.NET-C_SAA to SUP - RAJPUT_IN

- Added sensor HEAD.NET-C_SGN to SUP - ARKTIKA_RU

- Added sensor HEAD.NET-C_SGN to SUP - KARA_RU

- Added sensor HEAD.NET-C_SGN to SUP - KASHIN_RU

- Added sensor HEAD.NET-C_SGN to SUP - KRIVAK.I_RU

- Added sensor HEAD.NET-C_SGN to SUP - KRIVAK.II_RU

- Added sensor KIVACH-3_VGN to SUP - LEBED_RU

- Added sensor LIMAN_VGN to SUP - LIDA_RU

- Added sensor LN-66_VGN to SUP - BABR_IR

- Added sensor MAD.HACK_SAA to SUP - KAPUSTA_RU

- Added sensor MAD.HACK_SAA to SUP - KAPUSTA_RU

- Added sensor MAD.HACK_SAA to SUP - PRIMORYE_RU

- Added sensor MAR.SNW1O_SAA to SUP - Z-CLASS_EG

- Added sensor NAYADA_VGN to SUP - GEPARD_RU

- Added sensor NAYADA_VGN to SUP - GORYA_RU

- Added sensor NAYADA_VGN to SUP - GRISHA.V_RU

- Added sensor NAYADA_VGN to SUP - NANUCHKA.3_RU

- Added sensor NAYADA_VGN to SUP - NANUCHKA.4_RU

- Added sensor NAYADA_VGN to SUP - NEUSTRASHIMY_RU

- Added sensor PALM.FROND_VGN to SUP - ANTONOV_AK_RU

- Added sensor PALM.FROND_VGN to SUP - ANTONOV_AK_RU

- Added sensor PALM.FROND_VGN to SUP - ANTONOV_RU

- Added sensor PALM.FROND_VGN to SUP - ANTONOV_RU

- Added sensor PALM.FROND_VGN to SUP - GORYA_RU

- Added sensor PALM.FROND_VGN to SUP - IVAN.ROGOV_RU

- Added sensor PALM.FROND_VGN to SUP - IVAN.ROGOV_RU

- Added sensor PALM.FROND_VGN to SUP - IVAN.SUSANIN_RU

- Added sensor PALM.FROND_VGN to SUP - IVAN.SUSANIN_RU

- Added sensor PALM.FROND_VGN to SUP - KAPUSTA_RU

- Added sensor PALM.FROND_VGN to SUP - KAPUSTA_RU

- Added sensor PALM.FROND_VGN to SUP - KAPUSTA_RU

- Added sensor PALM.FROND_VGN to SUP - KARA_RU

- Added sensor PALM.FROND_VGN to SUP - KASHIN_RU

- Added sensor PALM.FROND_VGN to SUP - KASHIN_RU

- Added sensor PALM.FROND_VGN to SUP - KATRAN_RU

- Added sensor PALM.FROND_VGN to SUP - KIROV_RU

- Added sensor PALM.FROND_VGN to SUP - KIROV_RU

- Added sensor PALM.FROND_VGN to SUP - KIROV_RU

- Added sensor PALM.FROND_VGN to SUP - KRIVAK.I_RU

- Added sensor PALM.FROND_VGN to SUP - KRIVAK.II_RU

- Added sensor PALM.FROND_VGN to SUP - KRIVAK.III_RU

- Added sensor PALM.FROND_VGN to SUP - KUZNETSOV_RU

- Added sensor PALM.FROND_VGN to SUP - KUZNETSOV_RU

- Added sensor PALM.FROND_VGN to SUP - KUZNETSOV_RU

- Added sensor PALM.FROND_VGN to SUP - MAR.NEDELIN_RU

- Added sensor PALM.FROND_VGN to SUP - MAR.NEDELIN_RU

- Added sensor PALM.FROND_VGN to SUP - MAR.NEDELIN_RU

- Added sensor PALM.FROND_VGN to SUP - MCMV.RUS_RU

- Added sensor PALM.FROND_VGN to SUP - MOD.KRIVAK.I_RU

- Added sensor PALM.FROND_VGN to SUP - MOD.KRIVAK.I_RU

- Added sensor PALM.FROND_VGN to SUP - NEUSTRASHIMY_RU

- Added sensor PALM.FROND_VGN to SUP - NEW.FRIGATE_RU

- Added sensor PALM.FROND_VGN to SUP - NEW.FRIGATE_RU

- Added sensor PECHORA_VGN to SUP - ABHAY_IN

- Added sensor PECHORA_VGN to SUP - PAUK_2_RU

- Added sensor PEEL.CONE_VGN to SUP - MUKHA_RU

- Added sensor PEEL.CONE_VGN to SUP - MURAVEY_RU

- Added sensor PEEL.PAIR_SGN to SUP - NANUCHKA.1_RU

- Added sensor PEEL.PAIR_SGN to SUP - NANUCHKA.3_RU

- Added sensor PEEL.PAIR_SGN to SUP - NANUCHKA.4_RU

- Added sensor PFN-513_SAA to SUP - BRAHMAPUTRA_IN

- Added sensor PFN-513_SAA to SUP - VIRAAT_IN

- Added sensor PLANK.SHAVE_SGN to SUP - MATKA_RU

- Added sensor PLANK.SHAVE_SGN to SUP - NEW.FRIGATE_RU

- Added sensor POT.DRUM_SGN to SUP - BOGOMOL_IR

- Added sensor POT.DRUM_SGN to SUP - BOGOMOL_RU

- Added sensor POT.DRUM_SGN to SUP - NAJIN_KP

- Added sensor POT.HEAD_SAA to SUP - HAIJIU_CN

- Added sensor POT.HEAD_SAA to SUP - HAINAN.57MM_CN

- Added sensor POT.HEAD_SAA to SUP - HAINAN.76MM_CN

- Added sensor POT.HEAD_SAA to SUP - NAJIN_KP

- Added sensor POT.HEAD_SAA to SUP - TOWN_PK

- Added sensor POT.HEAD_SGN to SUP - HAIJIU_CN

- Added sensor POT.HEAD_SGN to SUP - HAINAN.57MM_CN

- Added sensor POT.HEAD_SGN to SUP - HAINAN.76MM_CN

- Added sensor POT.HEAD_SGN to SUP - NAJIN_KP

- Added sensor RADWAR_SGN to SUP - BEREZA_PL

- Added sensor RAN-12L_SAA to SUP - ASSAD_IQ

- Added sensor RAN-12L_SAA to SUP - WADI_MY

- Added sensor RAN-12L_SGN to SUP - ASSAD_IQ

- Added sensor RAN-40L_SAA to SUP - VIKRANT_IN

- Added sensor RAW-I(LW08)_SAA to SUP - VIRAAT_IN

- Added sensor RAYTH-1650_VGN to SUP - BAYANDOR_IR

- Added sensor SEA.EAGLE_SAA to SUP - LUDA.1_37MM_CN

- Added sensor SEA.EAGLE_SAA to SUP - LUDA.1_57MM_CN

- Added sensor SEA.EAGLE_SAA to SUP - LUDA.1_HELO_CN

- Added sensor SEA.EAGLE_SAA to SUP - LUDA.1_SAM_CN

- Added sensor SEA.EAGLE_SAA to SUP - LUDA.2_CN

- Added sensor SEA.EAGLE_SAA to SUP - LUDA.3_CN

- Added sensor SEA.EAGLE_SAA to SUP - LUHAI_CN

- Added sensor SEA.TIGER_SAA to SUP - LUHU_CN

- Added sensor SEA.TIGER_SGN to SUP - LUHU_CN

- Added sensor SKY.WATCH_SAA to SUP - KUZNETSOV_RU

- Added sensor SLIM.NET_SAA to SUP - DON_RU

- Added sensor SLIM.NET_SAA to SUP - NAJIN_KP

- Added sensor SNOOP.PAIR_VGN to SUP - AKULA_1_RU

- Added sensor SNOOP.PAIR_VGN to SUP - AKULA_2_RU

- Added sensor SNOOP.PAIR_VGN to SUP - IMP.AKULA_1_RU

- Added sensor SNOOP.PAIR_VGN to SUP - OSCAR_2_RU

- Added sensor SNOOP.PAIR_VGN to SUP - SEVERODVINSK_RU

- Added sensor SNOOP.PAIR_VGN to SUP - SIERRA_1_RU

- Added sensor SNOOP.PAIR_VGN to SUP - SIERRA_2_RU

- Added sensor SNOOP.PAIR_VGN to SUP - TYPHOON_RU

- Added sensor SNOOP.PLATE_VGN to SUP - IMP.ROMEO_EG

- Added sensor SNOOP.PLATE_VGN to SUP - MING_FLK_CN

- Added sensor SNOOP.PLATE_VGN to SUP - MING_WO.FLK_CN

- Added sensor SNOOP.PLATE_VGN to SUP - ROMEO_CN

- Added sensor SNOOP.PLATE_VGN to SUP - ROMEO_KP

- Added sensor SNOOP.TRAY1_VGN to SUP - NAHANG_IR

- Added sensor SNOOP.TRAY1_VGN to SUP - TANGO_RU

- Added sensor SNOOP.TRAY2_VGN to SUP - ARIHANT_IN

- Added sensor SNOOP.TRAY2_VGN to SUP - BOREY_RU

- Added sensor SNOOP.TRAY2_VGN to SUP - DELTA.3_RU

- Added sensor SNOOP.TRAY2_VGN to SUP - DELTA.4_RU

- Added sensor SNOOP.TRAY2_VGN to SUP - KILO.IMP_CN

- Added sensor SNOOP.TRAY2_VGN to SUP - KILO.IMP_RU

- Added sensor SNOOP.TRAY2_VGN to SUP - KILO_CN

- Added sensor SNOOP.TRAY2_VGN to SUP - KILO_IR

- Added sensor SNOOP.TRAY2_VGN to SUP - KILO_PL

- Added sensor SNOOP.TRAY2_VGN to SUP - KILO_RU

- Added sensor SNOOP.TRAY2_VGN to SUP - LADA_RU

- Added sensor SNOOP.TRAY2_VGN to SUP - VICTOR.3.IMP_RU

- Added sensor SNOOP.TRAY2_VGN to SUP - VICTOR.3_RU

- Added sensor SPIN.TROUGH_VGN to SUP - AIST_RU

- Added sensor SPIN.TROUGH_VGN to SUP - KATUN_1_RU

- Added sensor SPIN.TROUGH_VGN to SUP - KATUN_RU

- Added sensor SPIN.TROUGH_VGN to SUP - KONDA_RU

- Added sensor SPIN.TROUGH_VGN to SUP - KRIVAK.I_RU

- Added sensor SPIN.TROUGH_VGN to SUP - KRIVAK.II_RU

- Added sensor SPIN.TROUGH_VGN to SUP - OLEKMA_RU

- Added sensor SPIN.TROUGH_VGN to SUP - PARCHIM_2_RU

- Added sensor SPIN.TROUGH_VGN to SUP - PIYAVKA_RU

- Added sensor SPIN.TROUGH_VGN to SUP - POLNOCHNY_A_RU

- Added sensor SPIN.TROUGH_VGN to SUP - POLNOCHNY_B_RU

- Added sensor SPIN.TROUGH_VGN to SUP - POLUCHAT_RU

- Added sensor SPN-703_VGN to SUP - ASSAD_IQ

- Added sensor SPS-10_SGN to SUP - BABR_IR

- Added sensor SPS-10_SGN to SUP - GEARING_PK

- Added sensor SPS-29C_SAA to SUP - BABR_IR

- Added sensor SPS-6C_SAA to SUP - BAYANDOR_IR

- Added sensor SPS-6C_SGN to SUP - BAYANDOR_IR

- Added sensor SQUARE.TIE_SAA to SUP - HOUKU_C801_CN

- Added sensor SQUARE.TIE_SAA to SUP - HOUKU_HY2_CN

- Added sensor SQUARE.TIE_SAA to SUP - HUANGFENG_25_CN

- Added sensor SQUARE.TIE_SAA to SUP - HUANGFENG_30_CN

- Added sensor SQUARE.TIE_SAA to SUP - JIANGHU.1_CN

- Added sensor SQUARE.TIE_SAA to SUP - JIANGHU.2_CN

- Added sensor SQUARE.TIE_SAA to SUP - JIANGHU.4_CN

- Added sensor SQUARE.TIE_SAA to SUP - JIANGHU3_801_CN

- Added sensor SQUARE.TIE_SAA to SUP - JIANGHU3_802_CN

- Added sensor SQUARE.TIE_SAA to SUP - LUDA.1_37MM_CN

- Added sensor SQUARE.TIE_SAA to SUP - LUDA.1_57MM_CN

- Added sensor SQUARE.TIE_SAA to SUP - LUDA.1_HELO_CN

- Added sensor SQUARE.TIE_SAA to SUP - LUDA.1_SAM_CN

- Added sensor SQUARE.TIE_SAA to SUP - LUDA.2_CN

- Added sensor SQUARE.TIE_SAA to SUP - NAJIN_KP

- Added sensor SQUARE.TIE_SAA to SUP - OSA.I_IQ

- Added sensor SQUARE.TIE_SAA to SUP - OSA.I_IQ

- Added sensor SQUARE.TIE_SAA to SUP - OSA.II_IR

- Added sensor SQUARE.TIE_SAA to SUP - OSA.II_IR

- Added sensor SQUARE.TIE_SAA to SUP - SOHO_KP

- Added sensor SQUARE.TIE_SGN to SUP - HOUKU_C801_CN

- Added sensor SQUARE.TIE_SGN to SUP - HOUKU_HY2_CN

- Added sensor SQUARE.TIE_SGN to SUP - HUANGFENG_25_CN

- Added sensor SQUARE.TIE_SGN to SUP - HUANGFENG_30_CN

- Added sensor SQUARE.TIE_SGN to SUP - JIANGHU.1_CN

- Added sensor SQUARE.TIE_SGN to SUP - JIANGHU.2_CN

- Added sensor SQUARE.TIE_SGN to SUP - JIANGHU.4_CN

- Added sensor SQUARE.TIE_SGN to SUP - JIANGHU3_801_CN

- Added sensor SQUARE.TIE_SGN to SUP - JIANGHU3_802_CN

- Added sensor SQUARE.TIE_SGN to SUP - LUDA.1_37MM_CN

- Added sensor SQUARE.TIE_SGN to SUP - LUDA.1_57MM_CN

- Added sensor SQUARE.TIE_SGN to SUP - LUDA.1_HELO_CN

- Added sensor SQUARE.TIE_SGN to SUP - LUDA.1_SAM_CN

- Added sensor SQUARE.TIE_SGN to SUP - LUDA.2_CN

- Added sensor SQUARE.TIE_SGN to SUP - NAJIN_KP

- Added sensor SQUARE.TIE_SGN to SUP - SOHO_KP

- Added sensor SRN-443XT_VGN to SUP - LUBLIN_PL

- Added sensor SRN-743X_VGN to SUP - HEWELIUSZ_PL

- Added sensor SRN-743X_VGN to SUP - POLNOCNY.C_PL

- Added sensor SRN-7453_VGN to SUP - BEREZA_PL

- Added sensor SRN-7453_VGN to SUP - HEWELIUSZ_PL

- Added sensor SRN-7453_VGN to SUP - KASZUB_PL

- Added sensor SRN-7453_VGN to SUP - LUBLIN_PL

- Added sensor SRN-7453_VGN to SUP - MOD.MOMA_PL

- Added sensor SRN-7453_VGN to SUP - PIAST_PL

- Added sensor SRN-7453_VGN to SUP - PIAST_PL

- Added sensor SRN-7453_VGN to SUP - POLNOCNY.C_PL

- Added sensor SRN-7453_VGN to SUP - POLNOCNY.C_PL

- Added sensor STRUT.CURVE_SAA to SUP - BEREZINA_RU

- Added sensor STRUT.CURVE_SAA to SUP - GRISHA.II_RU

- Added sensor STRUT.CURVE_SAA to SUP - GRISHA.III_RU

- Added sensor STRUT.CURVE_SAA to SUP - IVAN.SUSANIN_RU

- Added sensor STRUT.CURVE_SAA to SUP - KASZUB_PL

- Added sensor STRUT.CURVE_SAA to SUP - KONI_BG

- Added sensor STRUT.CURVE_SAA to SUP - LAMA_RU

- Added sensor STRUT.CURVE_SAA to SUP - MARASESTI_RO

- Added sensor STRUT.CURVE_SAA to SUP - ROPUCHA_1_RL_RU

- Added sensor STRUT.CURVE_SAA to SUP - ROPUCHA_1_RU

- Added sensor STRUT.CURVE_SAA to SUP - UGRA_RU

- Added sensor STRUT.CURVE_SGN to SUP - BEREZINA_RU

- Added sensor STRUT.CURVE_SGN to SUP - GRISHA.II_RS

- Added sensor STRUT.CURVE_SGN to SUP - GRISHA.III_RS

- Added sensor STRUT.CURVE_SGN to SUP - IVAN.SUSANIN_RU

- Added sensor STRUT.CURVE_SGN to SUP - KASZUB_PL

- Added sensor STRUT.CURVE_SGN to SUP - LAMA_RU

- Added sensor STRUT.PAIR_SAA to SUP - KIROV_RU

- Added sensor STRUT.PAIR_SAA to SUP - KIROV_RU

- Added sensor STRUT.PAIR_SAA to SUP - KUZNETSOV_RU

- Added sensor STRUT.PAIR_SAA to SUP - KUZNETSOV_RU

- Added sensor STRUT.PAIR_SAA to SUP - UDALOY_2_RU

- Added sensor STRUT.PAIR_SAA to SUP - UDALOY_RU

- Added sensor STRUT.PAIR_SGN to SUP - KIROV_RU

- Added sensor STRUT.PAIR_SGN to SUP - KIROV_RU

- Added sensor STRUT.PAIR_SGN to SUP - KUZNETSOV_RU

- Added sensor STRUT.PAIR_SGN to SUP - KUZNETSOV_RU

- Added sensor TOP.PAIR_SAA to SUP - KIROV_RU

- Added sensor TOP.PAIR_SAA to SUP - SLAVA_RU

- Added sensor TOP.PAIR_SGN to SUP - KIROV_RU

- Added sensor TOP.PLATE_SAA to SUP - IVAN.ROGOV_RU

- Added sensor TOP.PLATE_SAA to SUP - KAPUSTA_RU

- Added sensor TOP.PLATE_SAA to SUP - KRIVAK.III_RU

- Added sensor TOP.PLATE_SAA to SUP - KUZNETSOV_RU

- Added sensor TOP.PLATE_SAA to SUP - MAR.NEDELIN_RU

- Added sensor TOP.PLATE_SAA to SUP - NEUSTRASHIMY_RU

- Added sensor TOP.PLATE_SAA to SUP - SHIVALIK_IN

- Added sensor TOP.PLATE_SAA to SUP - SOVREMENNY_A_RU

- Added sensor TOP.PLATE_SAA to SUP - SOVREMENNY_RU

- Added sensor TOP.PLATE_SAA to SUP - SOVREMENY_CN

- Added sensor TOP.PLATE_SAA to SUP - TALWAR_IN

- Added sensor TOP.PLATE_SAA to SUP - UDALOY_2_RU

- Added sensor TOP.PLATE_SAA to SUP - UDALOY_RU

- Added sensor TOP.PLATE_SAA to SUP - VIKRAMADITYA_IN

- Added sensor TOP.PLATE_SGN to SUP - IVAN.ROGOV_RU

- Added sensor TOP.PLATE_SGN to SUP - KAPUSTA_RU

- Added sensor TOP.PLATE_SGN to SUP - KIROV_RU

- Added sensor TOP.PLATE_SGN to SUP - KRIVAK.III_RU

- Added sensor TOP.PLATE_SGN to SUP - KUZNETSOV_RU

- Added sensor TOP.PLATE_SGN to SUP - MAR.NEDELIN_RU

- Added sensor TOP.PLATE_SGN to SUP - NEUSTRASHIMY_RU

- Added sensor TOP.STEER_SAA to SUP - KIROV_RU

- Added sensor TOP.STEER_SAA to SUP - SLAVA_RU

- Added sensor TYPE-360_SAA to SUP - JIANGHU.5_CN

- Added sensor TYPE-360_SAA to SUP - JIANGWEI.1_CN

- Added sensor TYPE-360_SAA to SUP - JIANGWEI.2_CN

- Added sensor TYPE-360_SAA to SUP - LUHAI_CN

- Added sensor TYPE-360_SAA to SUP - LUHU_CN

- Added sensor TYPE-360_SAA to SUP - NARESUAN_TH

- Added sensor TYPE-360_SAA to SUP - NARESUAN_TH

- Added sensor TYPE-360_SGN to SUP - JIANGHU.5_CN

- Added sensor TYPE-360_SGN to SUP - JIANGWEI.1_CN

- Added sensor TYPE-360_SGN to SUP - JIANGWEI.2_CN

- Added sensor TYPE-360_SGN to SUP - LUHAI_CN

- Added sensor TYPE-360_SGN to SUP - LUHU_CN

- Added sensor TYPE-363_SAA to SUP - JIANGHU.5_CN

- Added sensor TYPE-364_SAA to SUP - LUHU_CN

- Added sensor TYPE-517_SAA to SUP - JIANGHU.2_CN

- Added sensor TYPE-517_SAA to SUP - JIANGHU3_801_CN

- Added sensor TYPE-517_SAA to SUP - JIANGHU3_802_CN

- Added sensor TYPE-517_SAA to SUP - JIANGWEI.1_CN

- Added sensor TYPE-517_SAA to SUP - JIANGWEI.2_CN

- Added sensor TYPE-517_SAA to SUP - LUDA.3_CN

- Added sensor TYPE-517_SAA to SUP - LUHAI_CN

- Added sensor TYPE-517_SAA to SUP - SWORD_PK

- Added sensor TYPE-756_VGN to SUP - DAXIN_CN

- Added sensor TYPE-756_VGN to SUP - DAXIN_CN

- Added sensor TYPE-756_VGN to SUP - JIANGHU.1_CN

- Added sensor TYPE-756_VGN to SUP - JIANGHU.2_CN

- Added sensor VOLGA_VGN to SUP - BALZAM_RU

- Added sensor VOLGA_VGN to SUP - BALZAM_RU

- Added sensor VOLGA_VGN to SUP - BEREZINA_RU

- Added sensor VOLGA_VGN to SUP - BEREZINA_RU

- Added sensor VOLGA_VGN to SUP - CHILIKIN.B_RU

- Added sensor VOLGA_VGN to SUP - CHILIKIN.B_RU

- Added sensor VOLGA_VGN to SUP - KARA_RU

- Added sensor VOLGA_VGN to SUP - KARA_RU

- Added sensor VOLGA_VGN to SUP - KRIVAK.III_RU

- Added sensor WM-28_SAA to SUP - KAMAN_C802_IR

- Added sensor WM-28_SAA to SUP - KAMAN_HARP_IR

- Added sensor WM-28_SGN to SUP - KAMAN_C802_IR

- Added sensor WM-28_SGN to SUP - KAMAN_HARP_IR

B.11 Deleted Sensors from SUPs

- Removed all _SAA Air Search Radars except AS.EYES_SAA and all _SGN Surface Search Radars except SS.EYES_SGN from the below listed SUPs:

    - Removed all _SAA Air Search Radars from SUP - ABHAY_IN
    - Removed all _SAA Air Search Radars from SUP - ALVAND_C802_IR
    - Removed all _SAA Air Search Radars from SUP - ALVAND_SK2_IR
    - Removed all _SAA Air Search Radars from SUP - ARKTIKA_RU
    - Removed all _SAA Air Search Radars from SUP - ASSAD_IQ
    - Removed all _SAA Air Search Radars from SUP - BABR_IR
    - Removed all _SAA Air Search Radars from SUP - BAYANDOR_IR
    - Removed all _SAA Air Search Radars from SUP - BEREZINA_RU
    - Removed all _SAA Air Search Radars from SUP - BRAHMAPUTRA_IN
    - Removed all _SAA Air Search Radars from SUP - CH.PHRAYA_H_TH
    - Removed all _SAA Air Search Radars from SUP - CH.PHRAYA_TH
    - Removed all _SAA Air Search Radars from SUP - CHILIKIN.B_RU
    - Removed all _SAA Air Search Radars from SUP - DAJIANG_CN
    - Removed all _SAA Air Search Radars from SUP - DAXIN_CN
    - Removed all _SAA Air Search Radars from SUP - DELHI_IN
    - Removed all _SAA Air Search Radars from SUP - DERGACH_RU
    - Removed all _SAA Air Search Radars from SUP - GEPARD_RU
    - Removed all _SAA Air Search Radars from SUP - GRISHA.II_RU
    - Removed all _SAA Air Search Radars from SUP - GRISHA.III_RU
    - Removed all _SAA Air Search Radars from SUP - GRISHA.V_RU

- Removed all _SAA Air Search Radars from SUP - HANG.TUAH_MY
- Removed all _SAA Air Search Radars from SUP - IVAN.ROGOV_RU
- Removed all _SAA Air Search Radars from SUP - JIANGHU.1_CN
- Removed all _SAA Air Search Radars from SUP - JIANGHU.2_CN
- Removed all _SAA Air Search Radars from SUP - JIANGHU.4_CN
- Removed all _SAA Air Search Radars from SUP - JIANGHU.5_CN
- Removed all _SAA Air Search Radars from SUP - JIANGHU.I_EG
- Removed all _SAA Air Search Radars from SUP - JIANGHU3_801_CN
- Removed all _SAA Air Search Radars from SUP - JIANGHU3_802_CN
- Removed all _SAA Air Search Radars from SUP - JIANGWEI.1_CN
- Removed all _SAA Air Search Radars from SUP - JIANGWEI.2_CN
- Removed all _SAA Air Search Radars from SUP - KAPUSTA_RU
- Removed all _SAA Air Search Radars from SUP - KARA_RU
- Removed all _SAA Air Search Radars from SUP - KASHIN_RU
- Removed all _SAA Air Search Radars from SUP - KASZUB_PL
- Removed all _SAA Air Search Radars from SUP - KHUKRI_IN
- Removed all _SAA Air Search Radars from SUP - KIROV_RU
- Removed all _SAA Air Search Radars from SUP - KONI_BG
- Removed all _SAA Air Search Radars from SUP - KORA_IN
- Removed all _SAA Air Search Radars from SUP - KRIVAK.I_RU
- Removed all _SAA Air Search Radars from SUP - KRIVAK.II_RU
- Removed all _SAA Air Search Radars from SUP - KRIVAK.III_RU
- Removed all _SAA Air Search Radars from SUP - KUZNETSOV_RU
- Removed all _SAA Air Search Radars from SUP - LADA_RU
- Removed all _SAA Air Search Radars from SUP - LAMA_RU
- Removed all _SAA Air Search Radars from SUP - LUDA.1_37MM_CN
- Removed all _SAA Air Search Radars from SUP - LUDA.1_57MM_CN
- Removed all _SAA Air Search Radars from SUP - LUDA.1_HELO_CN
- Removed all _SAA Air Search Radars from SUP - LUDA.1_SAM_CN

- Removed all _SAA Air Search Radars from SUP - LUDA.2_CH
- Removed all _SAA Air Search Radars from SUP - LUHAI_CN
- Removed all _SAA Air Search Radars from SUP - LUHU_CN
- Removed all _SAA Air Search Radars from SUP - MAR.NEDELIN_RU
- Removed all _SAA Air Search Radars from SUP - MARASESTI_RO
- Removed all _SAA Air Search Radars from SUP - MATKA_RU
- Removed all _SAA Air Search Radars from SUP - MOD.KRIVAK.I_RU
- Removed all _SAA Air Search Radars from SUP - NAJIN_KP
- Removed all _SAA Air Search Radars from SUP - NANUCHKA.3_RU
- Removed all _SAA Air Search Radars from SUP - NARESUAN_TH
- Removed all _SAA Air Search Radars from SUP - NEUSTRASHIMY_RU
- Removed all _SAA Air Search Radars from SUP - NEW.FRIGATE_RU
- Removed all _SAA Air Search Radars from SUP - ORKAN_PL
- Removed all _SAA Air Search Radars from SUP - PARCHIM_2_RU
- Removed all _SAA Air Search Radars from SUP - PAUK_2_RU
- Removed all _SAA Air Search Radars from SUP - POMORNIK_RU
- Removed all _SAA Air Search Radars from SUP - PRIMORYE_RU
- Removed all _SAA Air Search Radars from SUP - RAJPUT_IN
- Removed all _SAA Air Search Radars from SUP - RAJPUT_IN
- Removed all _SAA Air Search Radars from SUP - ROPUCHA_1_RL_RU
- Removed all _SAA Air Search Radars from SUP - ROPUCHA_1_RU
- Removed all _SAA Air Search Radars from SUP - ROPUCHA_2_RU
- Removed all _SAA Air Search Radars from SUP - SHIVALIK_IN
- Removed all _SAA Air Search Radars from SUP - SLAVA_RU
- Removed all _SAA Air Search Radars from SUP - SOVREMENNY_A_RU
- Removed all _SAA Air Search Radars from SUP - SOVREMENNY_RU
- Removed all _SAA Air Search Radars from SUP - SOVREMENY_CN
- Removed all _SAA Air Search Radars from SUP - STEREGUSHCHIY_RU
- Removed all _SAA Air Search Radars from SUP - SWORD_PK

- Removed all _SAA Air Search Radars from SUP - TALWAR_IN
- Removed all _SAA Air Search Radars from SUP - TALWAR_IN
- Removed all _SAA Air Search Radars from SUP - TARANTUL_2_RU
- Removed all _SAA Air Search Radars from SUP - TARANTUL_3_RU
- Removed all _SAA Air Search Radars from SUP - TARANTUL_4_RU
- Removed all _SAA Air Search Radars from SUP - UDALOY_2_RU
- Removed all _SAA Air Search Radars from SUP - UDALOY_RU
- Removed all _SAA Air Search Radars from SUP - UGRA_RU
- Removed all _SAA Air Search Radars from SUP - VIKRAMADITYA_IN
- Removed all _SAA Air Search Radars from SUP - VIKRANT_IN
- Removed all _SAA Air Search Radars from SUP - VIKRANT_IN
- Removed all _SAA Air Search Radars from SUP - VIRAAT_IN
- Removed all _SAA Air Search Radars from SUP - WADI_MY
- Removed all _SAA Air Search Radars from SUP - WUHU.B_CN
- Removed all _SAA Air Search Radars from SUP - Z-CLASS_EG
- Removed all _SGN Surface Search Radars from SUP - ABHAY_IN
- Removed all _SGN Surface Search Radars from SUP - AIST_RU
- Removed all _SGN Surface Search Radars from SUP - AKULA_1_RU
- Removed all _SGN Surface Search Radars from SUP - AKULA_2_RU
- Removed all _SGN Surface Search Radars from SUP - ALLIGATOR_RL_RU
- Removed all _SGN Surface Search Radars from SUP - ALLIGATOR_RU
- Removed all _SGN Surface Search Radars from SUP - ALPINIST_AGI_RU
- Removed all _SGN Surface Search Radars from SUP - ALPINIST_RU
- Removed all _SGN Surface Search Radars from SUP - ALVAND_C802_IR
- Removed all _SGN Surface Search Radars from SUP - ALVAND_SK2_IR
- Removed all _SGN Surface Search Radars from SUP - ANTONOV_AK_RU
- Removed all _SGN Surface Search Radars from SUP - ANTONOV_RU
- Removed all _SGN Surface Search Radars from SUP - ARIHANT_IN
- Removed all _SGN Surface Search Radars from SUP - ARKTIKA_RS

- Removed all _SGN Surface Search Radars from SUP - ASSAD_IQ
- Removed all _SGN Surface Search Radars from SUP - BABR_IR
- Removed all _SGN Surface Search Radars from SUP - BANDAR.ABBAS_IR
- Removed all _SGN Surface Search Radars from SUP - BAYANDOR_IR
- Removed all _SGN Surface Search Radars from SUP - BEREZA_PL
- Removed all _SGN Surface Search Radars from SUP - BEREZINA_RU
- Removed all _SGN Surface Search Radars from SUP - BOGOMOL_IR
- Removed all _SGN Surface Search Radars from SUP - BOGOMOL_RU
- Removed all _SGN Surface Search Radars from SUP - BOREY_RU
- Removed all _SGN Surface Search Radars from SUP - CAT_IR
- Removed all _SGN Surface Search Radars from SUP - CHILIKIN.B_RU
- Removed all _SGN Surface Search Radars from SUP - DAJIANG_CN
- Removed all _SGN Surface Search Radars from SUP - DAXIN_CN
- Removed all _SGN Surface Search Radars from SUP - DELTA.3_RU
- Removed all _SGN Surface Search Radars from SUP - DELTA.4_RU
- Removed all _SGN Surface Search Radars from SUP - DELVAR_AEL_IR
- Removed all _SGN Surface Search Radars from SUP - DELVAR_AKL_IR
- Removed all _SGN Surface Search Radars from SUP - DELVAR_AWT_IR
- Removed all _SGN Surface Search Radars from SUP - DERGACH_RU
- Removed all _SGN Surface Search Radars from SUP - DON_RU
- Removed all _SGN Surface Search Radars from SUP - GEARING_PK
- Removed all _SGN Surface Search Radars from SUP - GEPARD_RU
- Removed all _SGN Surface Search Radars from SUP - GORYA_RU
- Removed all _SGN Surface Search Radars from SUP - GRISHA.II_RU
- Removed all _SGN Surface Search Radars from SUP - GRISHA.III_RU
- Removed all _SGN Surface Search Radars from SUP - GRISHA.V_RU
- Removed all _SGN Surface Search Radars from SUP - HAIJIU_CN
- Removed all _SGN Surface Search Radars from SUP - HAINAN.57MM_CN
- Removed all _SGN Surface Search Radars from SUP - HAINAN.76MM_CN

- Removed all _SGN Surface Search Radars from SUP - HAIZHUI_CN
- Removed all _SGN Surface Search Radars from SUP - HEWELIUSZ_PL
- Removed all _SGN Surface Search Radars from SUP - HOUKU_C801_CN
- Removed all _SGN Surface Search Radars from SUP - HOUKU_HY2_CN
- Removed all _SGN Surface Search Radars from SUP - HUANGFENG_25_CN
- Removed all _SGN Surface Search Radars from SUP - HUANGFENG_30_CN
- Removed all _SGN Surface Search Radars from SUP - IMP.AKULA_1_RU
- Removed all _SGN Surface Search Radars from SUP - IVAN.ROGOV_RU
- Removed all _SGN Surface Search Radars from SUP - IVAN.SUSANIN_RU
- Removed all _SGN Surface Search Radars from SUP - JIANGHU.1_CN
- Removed all _SGN Surface Search Radars from SUP - JIANGHU.2_CN
- Removed all _SGN Surface Search Radars from SUP - JIANGWEI.2_CN
- Removed all _SGN Surface Search Radars from SUP - KAMAN_802_IR
- Removed all _SGN Surface Search Radars from SUP - KAMAN_HARP_IR
- Removed all _SGN Surface Search Radars from SUP - KAPUSTA_RU
- Removed all _SGN Surface Search Radars from SUP - KARA_RS
- Removed all _SGN Surface Search Radars from SUP - KASHIN_RS
- Removed all _SGN Surface Search Radars from SUP - KASZUB_PL
- Removed all _SGN Surface Search Radars from SUP - KATRAN_RU
- Removed all _SGN Surface Search Radars from SUP - KATUN_1_RU
- Removed all _SGN Surface Search Radars from SUP - KATUN_RU
- Removed all _SGN Surface Search Radars from SUP - KILO.IMP_CN
- Removed all _SGN Surface Search Radars from SUP - KILO.IMP_RU
- Removed all _SGN Surface Search Radars from SUP - KILO_CN
- Removed all _SGN Surface Search Radars from SUP - KILO_PL
- Removed all _SGN Surface Search Radars from SUP - KILO_RU
- Removed all _SGN Surface Search Radars from SUP - KIROV_RU
- Removed all _SGN Surface Search Radars from SUP - KONDA_RU
- Removed all _SGN Surface Search Radars from SUP - KRIVAK.I_RU

- Removed all _SGN Surface Search Radars from SUP - KRIVAK.II_RU
- Removed all _SGN Surface Search Radars from SUP - KRIVAK.III_RU
- Removed all _SGN Surface Search Radars from SUP - KUZNETSOV_RU
- Removed all _SGN Surface Search Radars from SUP - LAMA_RU
- Removed all _SGN Surface Search Radars from SUP - LEBED_RU
- Removed all _SGN Surface Search Radars from SUP - LIDA_RU
- Removed all _SGN Surface Search Radars from SUP - LUBLIN_PL
- Removed all _SGN Surface Search Radars from SUP - LUDA.2_CN
- Removed all _SGN Surface Search Radars from SUP - LUHAI_CN
- Removed all _SGN Surface Search Radars from SUP - MAR.NEDELIN_RU
- Removed all _SGN Surface Search Radars from SUP - MATKA_RU
- Removed all _SGN Surface Search Radars from SUP - MCMV.RUS_RU
- Removed all _SGN Surface Search Radars from SUP - MING_FLK_CN
- Removed all _SGN Surface Search Radars from SUP - MING_WO.FLK_CN
- Removed all _SGN Surface Search Radars from SUP - MIRAZH_RU
- Removed all _SGN Surface Search Radars from SUP - MOD.KRIVAK.I_RU
- Removed all _SGN Surface Search Radars from SUP - MOD.MOMA_PL
- Removed all _SGN Surface Search Radars from SUP - MOD.VANYA_RU
- Removed all _SGN Surface Search Radars from SUP - MOMA_AGI_RU
- Removed all _SGN Surface Search Radars from SUP - MOMA_RU
- Removed all _SGN Surface Search Radars from SUP - MUKHA_RU
- Removed all _SGN Surface Search Radars from SUP - MURAVEY_RU
- Removed all _SGN Surface Search Radars from SUP - NAHANG_IR
- Removed all _SGN Surface Search Radars from SUP - NAJIN_KP
- Removed all _SGN Surface Search Radars from SUP - NANUCHKA.1_RU
- Removed all _SGN Surface Search Radars from SUP - NANUCHKA.3_RU
- Removed all _SGN Surface Search Radars from SUP - NANUCHKA.4_RU
- Removed all _SGN Surface Search Radars from SUP - NATYA.I_RU
- Removed all _SGN Surface Search Radars from SUP - NATYA.II_RU

- Removed all _SGN Surface Search Radars from SUP - NATYA_I_ME_RU
- Removed all _SGN Surface Search Radars from SUP - NEUSTRASHIMY_RU
- Removed all _SGN Surface Search Radars from SUP - NEW.FRIGATE_RU
- Removed all _SGN Surface Search Radars from SUP - OLEKMA_RU
- Removed all _SGN Surface Search Radars from SUP - ORKAN_PL
- Removed all _SGN Surface Search Radars from SUP - OSA.I_IQ
- Removed all _SGN Surface Search Radars from SUP - OSA.II_IR
- Removed all _SGN Surface Search Radars from SUP - OSCAR_2_RU
- Removed all _SGN Surface Search Radars from SUP - PARCHIM_2_RU
- Removed all _SGN Surface Search Radars from SUP - PAUK_2_RU
- Removed all _SGN Surface Search Radars from SUP - PB.90_IQ
- Removed all _SGN Surface Search Radars from SUP - PIAST_PL
- Removed all _SGN Surface Search Radars from SUP - PIYAVKA_RU
- Removed all _SGN Surface Search Radars from SUP - POLNOCHNY_A_RU
- Removed all _SGN Surface Search Radars from SUP - POLNOCHNY_B_RU
- Removed all _SGN Surface Search Radars from SUP - POLNOCHNY_C_RU
- Removed all _SGN Surface Search Radars from SUP - POLNOCHNY_D_IR
- Removed all _SGN Surface Search Radars from SUP - POLNOCNY.C_PL
- Removed all _SGN Surface Search Radars from SUP - POLUCHAT_RU
- Removed all _SGN Surface Search Radars from SUP - POLUCHAT_YPT_RU
- Removed all _SGN Surface Search Radars from SUP - ROMEO_CN
- Removed all _SGN Surface Search Radars from SUP - ROMEO_KP
- Removed all _SGN Surface Search Radars from SUP - ROPUCHA_2_RU
- Removed all _SGN Surface Search Radars from SUP - SEVERODVINSK_RU
- Removed all _SGN Surface Search Radars from SUP - SIERRA_1_RU
- Removed all _SGN Surface Search Radars from SUP - SIERRA_2_RU
- Removed all _SGN Surface Search Radars from SUP - STROMBOLI_IQ
- Removed all _SGN Surface Search Radars from SUP - TANGO_RU
- Removed all _SGN Surface Search Radars from SUP - TYPHOON_RU

• Removed all _SGN Surface Search Radars from SUP - VICTOR.3.IMP_RU

• Removed all _SGN Surface Search Radars from SUP - VICTOR.3_RU

• Removed all _VGN Surface Search Radars from SUP - ABHAY_IN

• Removed all _VGN Surface Search Radars from SUP - AIST_RU

• Removed all _VGN Surface Search Radars from SUP - ALLIGATOR_RL_RU

• Removed all _VGN Surface Search Radars from SUP - ALLIGATOR_RU

• Removed all _VGN Surface Search Radars from SUP - ALPINIST_AGI_RU

• Removed all _VGN Surface Search Radars from SUP - ALPINIST_RU

• Removed all _VGN Surface Search Radars from SUP - ALVAND_C802_IR

• Removed all _VGN Surface Search Radars from SUP - ALVAND_SK2_IR

• Removed all _VGN Surface Search Radars from SUP - ANTONOV_AK_RU

• Removed all _VGN Surface Search Radars from SUP - ANTONOV_RU

• Removed all _VGN Surface Search Radars from SUP - ARKTIKA_RS

• Removed all _VGN Surface Search Radars from SUP - BABR_IR

• Removed all _VGN Surface Search Radars from SUP - BALZAM_RU

• Removed all _VGN Surface Search Radars from SUP - BANDAR.ABBAS_IR

• Removed all _VGN Surface Search Radars from SUP - BAYANDOR_IR

• Removed all _VGN Surface Search Radars from SUP - BEREZA_PL

• Removed all _VGN Surface Search Radars from SUP - BEREZINA_RU

• Removed all _VGN Surface Search Radars from SUP - CHILIKIN.B_RU

• Removed all _VGN Surface Search Radars from SUP - DAJIANG_CN

• Removed all _VGN Surface Search Radars from SUP - DAXIN_CN

• Removed all _VGN Surface Search Radars from SUP - DELVAR_AEL_IR

• Removed all _VGN Surface Search Radars from SUP - DELVAR_AKL_IR

• Removed all _VGN Surface Search Radars from SUP - DELVAR_AWT_IR

• Removed all _VGN Surface Search Radars from SUP - DERGACH_RU

• Removed all _VGN Surface Search Radars from SUP - DON_RU

• Removed all _VGN Surface Search Radars from SUP - GEARING_PK

• Removed all _VGN Surface Search Radars from SUP - GEPARD_RU

- Removed all _VGN Surface Search Radars from SUP - GORYA_RU
- Removed all _VGN Surface Search Radars from SUP - GRISHA.II_RU
- Removed all _VGN Surface Search Radars from SUP - GRISHA.III_RU
- Removed all _VGN Surface Search Radars from SUP - GRISHA.V_RU
- Removed all _VGN Surface Search Radars from SUP - HAIZHUI_CN
- Removed all _VGN Surface Search Radars from SUP - HEWELIUSZ_PL
- Removed all _VGN Surface Search Radars from SUP - IMP.ROMEO_EG
- Removed all _VGN Surface Search Radars from SUP - IVAN.ROGOV_RU
- Removed all _VGN Surface Search Radars from SUP - IVAN.SUSANIN_RU
- Removed all _VGN Surface Search Radars from SUP - JIANGHU.1_CN
- Removed all _VGN Surface Search Radars from SUP - JIANGHU.2_CN
- Removed all _VGN Surface Search Radars from SUP - JIANGHU.4_CN
- Removed all _VGN Surface Search Radars from SUP - JIANGHU.5_CN
- Removed all _VGN Surface Search Radars from SUP - JIANGHU3_801_CN
- Removed all _VGN Surface Search Radars from SUP - JIANGHU3_802_CN
- Removed all _VGN Surface Search Radars from SUP - JIANGWEI.1_CN
- Removed all _VGN Surface Search Radars from SUP - JIANGWEI.2_CN
- Removed all _VGN Surface Search Radars from SUP - KAPUSTA_RU
- Removed all _VGN Surface Search Radars from SUP - KARA_RS
- Removed all _VGN Surface Search Radars from SUP - KASHIN_RS
- Removed all _VGN Surface Search Radars from SUP - KASZUB_PL
- Removed all _VGN Surface Search Radars from SUP - KATUN_1_RU
- Removed all _VGN Surface Search Radars from SUP - KATUN_RU
- Removed all _VGN Surface Search Radars from SUP - KILO_IR
- Removed all _VGN Surface Search Radars from SUP - KILO_PL
- Removed all _VGN Surface Search Radars from SUP - KIROV_RU
- Removed all _VGN Surface Search Radars from SUP - KONDA_RU
- Removed all _VGN Surface Search Radars from SUP - KRIVAK.I_RU
- Removed all _VGN Surface Search Radars from SUP - KRIVAK.II_RU

- Removed all _VGN Surface Search Radars from SUP - KRIVAK.III_RU
- Removed all _VGN Surface Search Radars from SUP - KUZNETSOV_RU
- Removed all _VGN Surface Search Radars from SUP - LADA_RU
- Removed all _VGN Surface Search Radars from SUP - LAMA_RU
- Removed all _VGN Surface Search Radars from SUP - LEBED_RU
- Removed all _VGN Surface Search Radars from SUP - LIDA_RU
- Removed all _VGN Surface Search Radars from SUP - LUBLIN_PL
- Removed all _VGN Surface Search Radars from SUP - LUDA.1_37MM_CN
- Removed all _VGN Surface Search Radars from SUP - LUDA.1_57MM_CN
- Removed all _VGN Surface Search Radars from SUP - LUDA.1_HELO_CN
- Removed all _VGN Surface Search Radars from SUP - LUDA.1_SAM_CN
- Removed all _VGN Surface Search Radars from SUP - LUDA.2_CN
- Removed all _VGN Surface Search Radars from SUP - LUHAI_CN
- Removed all _VGN Surface Search Radars from SUP - MAR.NEDELIN_RU
- Removed all _VGN Surface Search Radars from SUP - MATKA_RU
- Removed all _VGN Surface Search Radars from SUP - MCMV.RUS_RU
- Removed all _VGN Surface Search Radars from SUP - MIRAZH_RU
- Removed all _VGN Surface Search Radars from SUP - MOD.KRIVAK.I_RU
- Removed all _VGN Surface Search Radars from SUP - MOD.MOMA_PL
- Removed all _VGN Surface Search Radars from SUP - MOD.VANYA_RU
- Removed all _VGN Surface Search Radars from SUP - MOMA_AGI_RU
- Removed all _VGN Surface Search Radars from SUP - MOMA_RU
- Removed all _VGN Surface Search Radars from SUP - MUKHA_RU
- Removed all _VGN Surface Search Radars from SUP - MURAVEY_RU
- Removed all _VGN Surface Search Radars from SUP - NAJIN_KP
- Removed all _VGN Surface Search Radars from SUP - NANUCHKA.1_RU
- Removed all _VGN Surface Search Radars from SUP - NANUCHKA.3_RU
- Removed all _VGN Surface Search Radars from SUP - NANUCHKA.4_RU
- Removed all _VGN Surface Search Radars from SUP - NATYA.I_RU

- Removed all _VGN Surface Search Radars from SUP - NATYA.II_RU
- Removed all _VGN Surface Search Radars from SUP - NATYA_I_266M_RU
- Removed all _VGN Surface Search Radars from SUP - NATYA_I_ME_RU
- Removed all _VGN Surface Search Radars from SUP - NEUSTRASHIMY_RU
- Removed all _VGN Surface Search Radars from SUP - OLEKMA_RU
- Removed all _VGN Surface Search Radars from SUP - ORKAN_PL
- Removed all _VGN Surface Search Radars from SUP - PARCHIM_2_RU
- Removed all _VGN Surface Search Radars from SUP - PAUK_2_RU
- Removed all _VGN Surface Search Radars from SUP - PIAST_PL
- Removed all _VGN Surface Search Radars from SUP - PIYAVKA_RU
- Removed all _VGN Surface Search Radars from SUP - POLNOCHNY_A_RU
- Removed all _VGN Surface Search Radars from SUP - POLNOCHNY_B_RU
- Removed all _VGN Surface Search Radars from SUP - POLNOCHNY_C_RU
- Removed all _VGN Surface Search Radars from SUP - POLNOCHNY_D_IR
- Removed all _VGN Surface Search Radars from SUP - POLNOCNY.C_PL
- Removed all _VGN Surface Search Radars from SUP - POLUCHAT_RU
- Removed all _VGN Surface Search Radars from SUP - POLUCHAT_YPT_RU
- Removed all _VGN Surface Search Radars from SUP - ROMEO_CN
- Removed all _VGN Surface Search Radars from SUP - ROMEO_KP
- Removed all _VGN Surface Search Radars from SUP - ROPUCHA_2_RU
- Removed all _VGN Surface Search Radars from SUP - SOHO_KP
- Removed all _VGN Surface Search Radars from SUP - TYPHOON_RU