

JTLS-GO

Version Description Document

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JOINT THEATER LEVEL SIMULATION - GLOBAL OPERATIONS
(JTLS-GO 6.1.3.0)

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ABSTRACT

The Joint Theater Level Simulation - Global Operations (JTLS-GO[®]) is an interactive, computer-based, multi-sided wargaming system that models air, land, naval, and Non-Governmental Organization (NGO) functions within a combine joint and coalition environment.

This *JTLS-GO Version Description Document (VDD)* describes the new features of the Version 6.1.3.0 delivery of the configuration-managed JTLS-GO software suite.

JTLS-GO 6.1.3.0 is a Maintenance release of the JTLS-GO 6.1 series that includes an updated repository of standard data, a demonstration scenario based in the western Pacific, as well as major model functionality improvements implemented as Engineering Change Proposals (ECPs). These ECPs are summarized in Chapter 2. Code modifications that represent corrections to known Software Trouble Reports (STRs) are described in Chapter 3. Remaining and outstanding STRs are described in Chapter 4.

This publication is updated and revised as required for each Major or Maintenance version release of the JTLS-GO model. Corrections, additions, or recommendations for improvement must reference specific sections, pages, and paragraphs with appropriate justification and be forwarded to:

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1.0 INTRODUCTION

1.1 SCOPE

This *JTLS-GO Version Description Document (VDD)* describes Version 6.1.3.0 of the configuration managed Joint Theater Level Simulation - Global Operations (JTLS-GO[®]) software suite. JTLS-GO 6.1.3.0 is a Maintenance delivery for the JTLS-GO 6.1 series of releases.

JTLS-GO 6.1.3.0 includes the entire JTLS-GO suite of software, a repository of engineering level data, and a realistic demonstration scenario based on the Western Pacific theater of operations called “wespac61”. There were no database format changes made to support this maintenance release. Database modifications that were accomplished to upgrade the previous JTLS-GO database format to the JTLS-GO 6.1 series format were summarized in the VDD for Version 6.1.0.0 delivered in the documents directory.

This release is being provided on a short notice requirement because of a serious issue found in the recently released JTLS-GO 6.1.2.0. There are no Engineering Change Proposals (ECPs) implemented for this release, but for consistency between this VDD and other provided VDDs an empty [Chapter 2.0](#) is included. A summary of all Software Trouble Reports (STRs) corrected in this Maintenance delivery are summarized in [Chapter 3.0](#).

JTLS-GO 6.1.3.0 executes on the Red Hat Enterprise Linux Version 8.4 64-bit operating systems. The Web-Hosted Interface Program (WHIP[®]) user workstation interface can be executed on any operating system from any Java-compatible Web browser.

1.2 INVENTORY OF MATERIALS

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

1.2.1 Obsolete/Outdated Documents

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

1.2.2 Unchanged Documents

- *JTLS-GO Analyst Guide* (JTLS-GO Document 01, Version 6.1.0.0)
- *JTLS-GO Executive Overview* (JTLS-GO Document 02, Version 6.1.2.0)
- *JTLS-GO Configuration Management Plan* (JTLS-GO Document 03, Version 6.1.0.0)
- *JTLS-GO Controller Guide* (JTLS-GO Document 04, Version 6.1.0.0)
- *JTLS-GO Data Requirements Manual* (JTLS-GO Document 05, Version 6.1.0.0)

- *JTLS-GO DDS User Guide* (JTLS-GO Document 06, Version 6.1.2.0)
- *JTLS-GO Director Guide* (JTLS-GO Document 07, Version 6.1.0.0)
- *JTLS-GO Installation Manual* (JTLS-GO Document 09, Version 6.1.2.0)
- *JTLS-GO WHIP Training Manual* (JTLS-GO Document 10, Version 6.1.2.0)
- *JTLS-GO Player Guide* (JTLS-GO Document 12, Version 6.1.2.0)
- *JTLS-GO Repository Description* (JTLS-GO Document 14, Version 6.1.0.0)
- *JTLS-GO Software Maintenance Manual* (JTLS-GO Document 15, Version 6.1.0.0)
- *JTLS-GO Technical Coordinator Guide* (JTLS-GO Document 16, Version 6.1.0.0)
- *JTLS-GO Entity Level Server User Guide* (JTLS-GO Document 19, Version 6.1.0.0)
- *JTLS-GO Federation User Guide* (JTLS-GO Document 20, Version 6.1.2.0)
- *JTLS-GO C4I Interface Manual* (JTLS-GO Document 21, Version 6.1.0.0)
- *JTLS-GO DoD Architecture Framework* (JTLS-GO Document 22, Version 6.1.0.0)
- *JTLS-GO DDS Training Manual* (JTLS-GO Document 23, Version 6.1.2.0)
- *JTLS-GO ATO Services User Guide* (JTLS-GO Document 24, Version 6.1.0.0)

1.2.3 Updated Documents

- *JTLS-GO Version Description Document* (JTLS-GO Document 17, Version 6.1.3.0)

1.2.4 New Documents

No new documents are required for this version of the software.

1.2.5 Delivered Software Components

JTLS-GO 6.1.3.0 may be delivered either on a CD or as a set of compressed TAR files to be downloaded. Either method includes the complete suite of software executable code and command procedures. The following software components are included with this release:

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

- Reformat Spreadsheet Program (RSP)
- JTLS Symbols Application (JSYMS)
- Database Development System (DDS)
 - Database Configuration Program (DCP)
 - DDS Client User Interface (DDSC)
- ATO Translator Service (ATOT)
- ATO Generator Service (ATOG)
- ATO Retrieval Program (ATORET)
- JTLS Convert Location Program (JCONVERT)
- Count Critical Order Program (CCO)
- JTLS HLA Interface Program (JHIP)
- After Action Review Client (AARC)
- Scenario Data Client (SDC)
- Order Entry Client (OEC)
- Order Verification Tool (OVT)
- JTLS Object Distribution Authority (JODA)
 - The current JODA build number is 172.
- Web Services Manager (WSM)
- Web-Hosted Interface Program (WHIP) and its component programs:
 - Apache Server (APACHE)
 - JTLS XML Serial Repository (JXSR)
 - Order Management Authority (OMA)
 - Synchronized Authentication and Preferences Service (SYNAPSE)
 - XML Message Service (XMS)
 - Total Recall Interactive Playback Program (TRIPP)

- Entity Level Server (ELS)
- JTLS Operational Interface (JOI) for both OTH-Gold and Link-16 generation
- Tactical Electronic Intelligence (TACELINT) Message Service
- Keyhole Markup Language (KML) Operational Interface (KOI)
- JTLS Transaction Interface Program (JTOI)
- JTLS Interface Network Navigator (JINN)
- JTLS Order of Battle Editor (JOBIE)
- JTLS Geographic Information System (GIS) Terrain Building Program
- JTLS Master Integrated Database (MIDB) Tool
- JTLS Version Conversion Program (VCP)

VCP60 - Converts a JTLS-GO 5.1 database to a JTLS-GO 6.0 formatted database.

VCP61 - Converts a JTLS-GO 6.0 database to a JTLS-GO 6.1 formatted database.

Instructions for installing JTLS-GO 6.1.3.0 are provided in the *JTLS-GO Installation Manual*. Installing a previous version of JTLS prior to installing JTLS-GO 6.1.3.0 is not necessary. No other upgrade beyond installation of the compressed TAR files or CD is required. The software provided with this delivery is a complete release that includes all files and code required to execute JTLS-GO.

1.2.6 Released Databases

This release includes the following sample unclassified databases:

- The scenario that serves as a repository of engineering level data called “repository61”. Although not useful as a scenario, it does follow all of the database requirements for a scenario, and should be loaded into your PostgreSQL scenario table-space.
- The scenario “wespac61”, which is suitable for training and demonstrations.

1.3 INTERFACE COMPATIBILITY

1.3.1 Support Software

JTLS-GO 6.1.3.0 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 Server (ES) Edition Version 8.4, 64-bit architecture.

JTLS-GO 6.1 has been tested with the following versions of Linux 8:

RedHat Linux 8.4 - this operating system license must be purchased.

Oracle Linux 8.4 - This operating system is free to download, use, and distribute, and is provided in a variety of installation and deployment methods. It has been approved by DISA for use by U.S. Government Agencies.

CentOS 8.4 - a free version of Linux 8 that has not been approved by DISA for use by U.S. Government agencies.

- There are no restrictions on the operating system for client workstations, except that the operating system must have a Java-enabled web browser. JTLS-GO 6.1.3.0 has been tested on the following operating systems:

Red Hat Linux Enterprise Edition Version 7.9 and 8.4

CentOS Linux Version 7.9 and 8.4

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

- JTLS-GO 6.1.3.0 is delivered with the AdoptOpenJDK 1.8 Update 322 package, which is equivalent to the current version of OpenJDK. Using AdoptOpenJDK provides two benefits:
 - a. Only the JTLS-GO account on the system servers access this version of Java. An installation site can use the JTLS-GO servers for programs other than JTLS-GO without impacting the version of Java used by other programs.
 - b. Security releases of AdoptOpenJDK software are produced on the same schedule as the Oracle OpenJDK security release procedure. An organization can expect to receive a bug release version of JTLS-GO within two-weeks of a new Java 1.8 security release. As long as a user organization installs all of the JTLS-GO bug releases, JTLS-GO can guarantee that the latest Java security release is being used on the servers. JTLS-GO no longer depends on system administration for implementing proper Java security update procedures.
- JTLS-GO uses IcedTea to provide the Java Web Start capability that implements the web-enabled JTLS-GO functionality. JTLS-GO supports IcedTea version 1.8.4.
- JTLS-GO database tools require a certified PostgreSQL 11.13 database server and the full PostgreSQL installation. A containerized solution, that fulfills this specification, is provided as part of the JTLS-GO download. It is not necessary to use the delivered containerized solution, but it is the easiest method to meet the requirements of JTLS-GO

6.1.3.0. There are several alternative methods available for obtaining the PostgreSQL 11.13 software. Refer to Chapter 6 of the *JTLS-GO Installation Manual* for additional installation details.

- Windows software, X11R5 server, Motif 1.2 Library, Motif Window Manager: These items are included as part of the supported versions of Red Hat Linux ES.
- TCP/IP is required for inter-process communication between the JODA data server and all user interface programs. The version of TCP/IP included with the supported versions of Red Hat Linux ES is sufficient.
- The Perl script language is used by the JTLS-GO system and game setup scripts. The version of Perl included with the supported versions of Red Hat Linux ES is sufficient. The Perl program is typically located in the /usr/bin directory. If Perl is installed in a another location, a link should be created from the /usr/bin directory to this program.
- SIMSCRIPT III (SIMSCRIPT to C) translator/compiler: SIMSCRIPT is required for recompiling JTLS-GO code. It is not necessary to have a SIMSCRIPT compiler to execute JTLS-GO, because all JTLS-GO software executables are statically linked with the SIMSCRIPT libraries. The compiler is needed only if you are a U.S. Government organization that can obtain source code and plan to re-compile JTLS-GO SIMSCRIPT code. To obtain a SIMSCRIPT compiler, contact CACI Inc.
- ANSI C Compiler: It is not necessary to use a C compiler to execute JTLS-GO. This compiler is used only by U.S. Government organizations that can obtain source code and intend to re-compile any of the JTLS-GO component programs. The C Compiler version delivered with the supported versions of Red Hat Linux ES is sufficient.
- C++ Compiler: It is not necessary to use a C++ compiler to execute JTLS-GO. This compiler is used only by U.S. Government organizations that can obtain source code and intend to re-compile any of the JTLS-GO HLA component programs. The C++ Compiler version delivered with the supported versions of Red Hat Linux ES is sufficient.
- The JTLS-GO DDS application uses these open source libraries:
 - JFreeChart, licensed under a GNU Lesser General Public License (LGPL) by Object Refinery Limited, <http://www.object-refinery.com>
 - JCommon, licensed under LGPL2.1 (GNU Lesser General Public License version 2.1 or later) by Object Refinery Limited, <http://www.object-refinery.com>
 - Commons-math3-3.0.jar, licensed under Apache Software Foundation (Apache License, Version 2.0) <http://www.apache.org/licenses/LICENSE-2.0>HLA Compliance
- KML Operational Interface (KOI)

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

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

1.3.2 JTLS-GO Cybersecurity Compliance

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

One of the DoD requirements is that the software must implement a methodology that ensures that the end user keep the software up-to-date and all security patches are properly installed. In previous versions of JTLS-GO, Java 8, as delivered by Oracle, fulfilled this mandate by implementing an expiration date for its software. After a certain date, all Java related programs stopped working, whether connected to an open network or not. All JTLS-GO releases were closely linked to the Java expiration date.

OpenJDK™ has not implement an expiration date. In order to fulfill this DoD Cybersecurity requirement, JTLS-GO has moved to AdoptOpenJDK, a full OpenJDK Java environment with licensing alternations allowing an application to deliver the software. The following procedure has been established and approved by the JS/J7 Cybersecurity branch:

- Within days of an Oracle Java security release, AdoptOpenJDK produces an equivalent version using infrastructure, build and test scripts to produce pre-built binaries of the OpenJDK class libraries. All AdoptOpenJDK binaries and scripts are open source licensed and available for free.
- Within two-weeks of the AdoptOpenJDK release, JTLS-GO provides a bug release version (JTLS-GO 6.1.n.0) including a full Version Description Document (VDD) for download to all authorized agencies. All DoD agencies using JTLS-GO will be in full compliance with this specific Cybersecurity mandate as long as they download and use the bug released versions when distributed.

Contact the U.S. Government Program Manager, Mr. James Blank (james.e.blank.civ@mail.mil) to obtain the completed Cybersecurity paperwork and a current Gate completion certificate.

1.3.3 JTLS-GO High Level Architecture Compliance

The JTLS-GO 6.1.3.0 release is fully High Level Architecture (HLA) compliant, and includes all the programs required to run JTLS-GO in an HLA mode. JTLS-GO currently belongs to one federation known as GlobalSim. GlobalSim is a comprehensive constructive simulation solution for joint training and wargaming that helps commanders and all levels of staff prepare for a range of operational scenarios.

The solution combines JTLS-GO with CAE's GESI constructive tactical entity-level simulation system. CAE's GESI constructive simulation system is designed to run complex and comprehensive exercises from the company level up to division level. The GESI system is used to represent a virtual battlefield, including weapons, vehicles, aircrafts, ground forces and more.

Combining JTLS-GO and GESI brings together operational and tactical level constructive simulations to prepare commanders and staff to make timely, informed and intelligent decisions across the full spectrum of operations, including conventional combat, disaster relief, and operations other than war.

From the JTLS-GO perspective, all software needed to run GlobalSim is included in this delivery. JTLS-GO uses the Federation Object Model (FOM) located in the \$JGAME/data/hla directory, Federation testing of JTLS-GO with CAE's GESI model have been accomplished. Future plans include expanding the capabilities of the GlobalSim federation.

The HLA RTI (Run Time Infrastructure) executive program (rtiexec) recommended for use with this release is Pitch pRTI Evolved 4.4.2.0. However, this program is not included in the JTLS-GO 6.1.3.0 delivery. Users may obtain a full installation package of the RTI software from Pitch Corporation (www.pitch.se). For information about executing the HLA RTI Executive and other HLA-related software, refer to the appropriate HLA documentation and user guides.

1.4 DATABASE MODIFICATIONS

Significant database structure differences exist between the JTLS-GO 6.1 series of the software and the previous JTLS-GO 6.0 series database structure. There are no database format changes between JTLS-GO 6.1.3.0 and the initial JTLS-GO 6.1.0.0 version of the software.

To upgrade your JTLS-GO 6.0 scenario to JTLS-GO 6.1 compatibility, see instructions listed in the *JTLS-GO DDS User Guide*, Chapter 3.1.

STR JTLS-2022-15607 Grid Lower-Left Location Not Exact On Restart was included in JTLS-GO 6.1.2.0, released in March 2022.

This STR required a change to the ASCII checkpoint format. Any saved checkpoints from JTLS-GO 6.1.0.0 and JTLS-GO 6.1.1.0 will not work with JTLS-GO 6.1.3.0.

1.4.1 JTLS-GO Using Legacy Default Symbol Set

If a user organization is still using the pre-JTLS-GO 5.0.0.0 legacy default symbol set, prior to unloading your JTLS-GO 6.1.0.0 formatted data from your PostgreSQL database server into the JTLS-GO 6.1.0.0 scenario American Standard Code for Information Interchange (ASCII) text files, you must execute the JSYMS program using the procedure outlined in the *JTLS-GO DDS User Guide*, Appendix B.11. This procedure will reorganize the structure of the <scenario_name>.gs and databases symbol.scf file.

1.4.2 JTLS-GO Using New Default Symbol Set

You should not make any modifications to the Default Symbol Set delivered with JTLS-GO 6.1.3.0, but end-user organizations are free to use the Default Symbol Set in their scenarios and alter the scenario symbol set to meet specific organizational needs. Some new symbols have been created to meet end-user requirements. No previously existing symbols were deleted nor were any of the preexisting symbol names changed.

This means that the user can easily move in this new symbol set. Please follow the steps outlined in the *JTLS-GO DDS Users Guide*, Section B.13, Updating Scenario Symbol Set.

1.4.3 Standard Repository Changes

R&A has continued to improve and expand the unclassified data repository, which has been renamed to “repository61.” The DDS comparison and synchronization function can be used to determine if any of the changes delivered are of use to a JTLS-GO user organization.

1.5 INSTALLATION

The *JTLS-GO Installation Manual*, a Portable Document Format (pdf) file available for direct download, is part of this JTLS-GO delivery. It provides detailed instructions for installing the new version of JTLS-GO and the installation of PostgreSQL 11.11 required to operate JTLS-GO 6.1.3.0.

2.0 ENGINEERING CHANGE PROPOSALS

No new model capabilities were added to JTLS-GO 6.1.3.0 as a result of implementing authorized Engineering Change Proposals (ECPs).

3.0 SOFTWARE TROUBLE REPORTS

Software Trouble Reports (STRs) describe software code errors that have been discovered by JTLS-GO users or developers and have been corrected.

3.1 JTLS-2022-15634 AAR Filtering On Server Side Inserts

The AAR Object Event Report has a filter that checks if an object belongs to the object of interest at the time of the event before including it in the report.

For example, the Player may request a report on a Unit including damage done by its Targets. The report already had a comprehensive list of what Targets were owned by the Unit throughout the game, but we need to ensure any damage records from the Targets happened when the Target was actually owned by the Unit. Because Targets can change ownership, this is not straightforward. A mechanism was already in place to handle this situation, but was flawed in its approach to removing records that did not belong.

The library function that handles the server side inserts of the records was modified to permit the calling function to specify a filter.

The code was changed for the Object Event Report to use this new mechanism to check object ownership at the time of the event. This same principle was applied to check Force Sides, because Units and Targets can change their Force Side, when accumulating Side damage and Side-inflicted damage reports.

3.2 JTLS-2022-15635 Confusing Order Help Updated

The help for several WHIP orders was confusing.

The help for the orders Manage BDA Areas, Manage DSAs, Manage BE Facilities, Manage Pass Intelligence, and AAR Report was updated.

3.3 JTLS-2022-15636 Global Terrain Layer Shift

The Global Terrain Layer, which serves as a base for all the other terrain layers, is explicitly anchored at 90S, 180W (-90, -180 as a decimal) on game start.

On a restart, it was not being explicitly anchored, which was causing the anchor point to shift to 0N, 0E, pushing all other terrain layers out of position by 90 degrees north and 180 degrees west. This left the model with 10 degree by 10 degree grid coverage in areas where high resolution modeling was desired.

The code was modified to explicitly set the anchor point for the Global Terrain Layer to 90S, 180W on both a start and a restart. This serious STR is the reason for this emergency release of JTLS-GO 6.1.3.0. The problem was caused by the fix to the JTLS-GO 6.1.2.0 STR JTLS-2022-

15607 Grid Lower Left Location Not Exact On Restart. STR JTLS-2022-15607 was a proper fix for the grid computation error, but its implementation did not consider the need to re-anchor the World Terrain Layer on a game restart.

4.0 REMAINING ERRORS

Every effort has been made to correct known model errors. All reproducible errors that resulted in CEP catastrophic software failures (crashes) have been corrected. Other corrections were prioritized and completed according to their resource cost-to-benefit relationship.

As JTLS-GO 6.1.0.0 represents a major release of new functionality, all outstanding errors have been reviewed. If the error could not be reproduced, it was considered obsolete and no longer relevant to JTLS-GO. These errors have been removed from consideration for correction at this time. This chapter contains the remaining errors that could be reproduced. As development team assets become available, these remaining known issues will be corrected.

In future maintenance releases, newly uncovered outstanding errors related to JTLS-GO will be listed in this chapter, along with information regarding the extent of the error, as well as suggestions to avoid or minimize the effects of the problem.

4.1 DDSC – TMU Line Mode Changes Multiple Grids

When using the line mode in the TMU, more grids than the ones the line passes through are changed. This can also cause a warning about trying to change multiple layers to appear.

4.2 DDSC – Multiple Types In DDS History Table

If records for more than one table type are selected in the DDS History table, “History Details” will display details for only one type.

4.3 WHIP - Pipeline Not Shown On IMT

A pipeline being operated by a non-detected unit is not shown in the pipeline IMT.

4.4 DDSC/WHIP/JOBE - CADRG Map Zoom

When using the CADRG map projection, if the width of the map is less than the height, the zoom tool does not work correctly.

APPENDIX A. ABBREVIATIONS AND ACRONYMS

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

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

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

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

| | |
|-----------|--|
| ICPLLogin | Interface Login Program |
| ID | Identifier |
| IFF | Identification Friend or Foe |
| IIP | Intelligence Information Prototype |
| IMT | Information Management Tool |
| INFO | Information |
| INTEL | Intelligence |
| JCATS | Joint Conflict And Tactical Simulation |
| JDA | Japan Defense Agency |
| JDPI | Joint Desired Point of Impact (formerly DMPI: Desired Mean Point of Impact) |
| JDS | JTLS Data System |
| JDSP | JTLS Data System Protocol |
| JEDI | JODA Entity Data Identifier |
| JMCIS | Joint Maritime Combat Information System |
| JMEM | Joint Munitions Effectiveness Manuals |
| JODA | JTLS Object Distribution Authority |
| JOI | JTLS Operational Interface |
| JPL | Jet Propulsion Laboratory |
| JRSG | Joint Rapid Scenario Generation (formerly JIDPS: Joint Integrated Database Preparation System) |
| JSDF | Japanese Self-Defense Force |
| JTLS | Joint Theater Level Simulation |
| JTLS-GO | Joint Theater Level Simulation - Global Operations |
| JTOI | JTLS Transaction Operational Interface |
| JXSR | JTLS XML Serial Repository |
| KIA | Killed In Action |
| KM | Kilometer |
| KNOTS | Nautical miles per hour |
| LA | Lethal Area |
| LAN | Local Area Network |
| LAT | Latitude |
| LB | Login Build (JTLS order type) |
| LDAP | Lightweight Directory Access Protocol |
| LDT | Lanchester coefficient Development Tool |
| LOG | Logistics |

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

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

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| SIP | Scenario Initialization Program |
| SITREP | Situation Report |
| SLP | Sustainment Log Prototype |
| SOF | Special Operations Forces |
| SP | Survivability Prototype |
| SQL | Structured Query Language |
| SR | Short Range |
| SRP | Start/Restart Program (a JTLS component) |
| SRTE | Sea Route |
| SSM | Surface-to-Surface Missile |
| STR | Software Trouble Report |
| SUP | Ship Unit Prototype |
| SVP | Scenario Verification Program |
| SYNAPSE | Synchronized Authentication and Preferences Service |
| 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 |

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| 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 6.1.0.0 DATABASE CHANGES

No changes were made to the JTLS-GO 6.1 database.

APPENDIX C. VERSION 6.1.0.0 REPOSITORY CHANGES

No significant changes were made to the JTLS-GO 6.1 repository.