Operating Systems for V5.1
- RHEL 6.8 (default)
- RHEL 6.9 (supported)
- **RHEL 7.0 not supported**
Enhancements & Improvements (Not up to date)

- Population Damage Effects
- Jamming Effects
- Logistics Effectiveness
- Range Bearing Roses
- AVLB Support
- Improved Color Cues
- Engineering Overlay Controls
- Emission Scheduler
- Range/Bearing on Rubber lines

- JLVC Federate State
- Support JLVC IFF Mode S & 5
- Close all Non-Raster windows
- Missile Flyout Reports
- Implicit Entities Upgrades
- Scenario Menu
- OBS Export
- Pick Location
- Operations Log
- NATO FOM Support (NETN)
Populations Taking and Reporting Damage

➢ Populations can now take Direct Fire
➢ Each implicit entity class is evaluated against the shot to determine BEST target
➢ Shot is evaluated using JCATS PhPk algorithm
➢ Implicit Member updated with damage effect

➢ Populations still assess indirect Fires
➢ Determine the number of members impacted as a fraction of overlap area vs. population area
➢ Use JCATS Area Effect algorithm

➢ Upgraded to DIS levels of Health State
➢ Health States: Alive, M-Kill, F-Kill, MF-Kill, Dead
➢ Matches the Damage algorithms

➢ GroupBDA now sent to JLVC federation
➢ Direct and Indirect fires report GroupBDA status
➢ Damage status used in BDA reports

Fix List Items
• JLOD-1081
• JLOD-1215
• JLOD-1221

Indirect Fire Example

Population Area
Overlap Area
Impact Effect Area
Implicit Entities GUI Upgrades

➢ Upgrades to support F/M/MF/K Health States
➢ Controller Window – Implicit Members
➢ Shared Magic Implicit Member Health Window
➢ Strength Report still shows Wounded values
➢ Population Specific Windows
  ➢ Population Demographics Editor
  ➢ Population Entity Class Selector
  ➢ Population Report
  ➢ Population Split/Depart

Fix List Items
  • JLOD-1215
Radar Jamming Awareness (1/2)

- Enhanced Controller Window to display Jamming status of entity
- Specific jammed radar shown on Radar Pane

<table>
<thead>
<tr>
<th>Name</th>
<th>Health</th>
<th>In Combat</th>
<th>Is Jammed</th>
<th>Is Moving</th>
<th>Radar Function</th>
<th>Status</th>
<th>Orientation</th>
<th>Start Time</th>
<th>Emission Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>13125 GLORY</td>
<td>Alive</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>ADA RADAR FM 80 Acquisition</td>
<td>Operable</td>
<td></td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Detecion</td>
<td></td>
<td></td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Navigation</td>
<td>Operable</td>
<td></td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

Fix List Items
- JLOD-1231

---

**Lawrence Livermore National Laboratory**

LLNL-PRES-741287
Radar Jamming Awareness (2/2)

- Enhanced Display Menu to Graphically show “Is Jammed” State
- Graphic “Jammed” symbol overlays Entity Symbol

Jammer State Display Switch

Jamming System and Beam

Jammed Symbol on Entity

1km

Fix List Items
• JLOD-1231
Entity Effectiveness / Status Pie Charts (1/2)

➢ Use Combat Effectiveness Icons
➢ Displays Unit’s Overall Combat Status
➢ Displays Unit’s Four Selected Items
   ➢ Ammunition, Weapons, POL, Personnel

➢ Sample Set of Icons
➢ Table below visually depicts status pies
➢ Left column contains intended meaning

**Assessment of Unit's ability to perform its mission**

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Sample Pies</th>
</tr>
</thead>
<tbody>
<tr>
<td>No problem in any area</td>
<td><img src="image" alt="No Problem" /></td>
</tr>
<tr>
<td>Some problems in Weapons</td>
<td><img src="image" alt="Some Problems" /></td>
</tr>
<tr>
<td>Major problems in Weapons</td>
<td><img src="image" alt="Major Problems" /></td>
</tr>
<tr>
<td>Cannot perform missions: Weapon Problems</td>
<td><img src="image" alt="Cannot Perform" /></td>
</tr>
</tbody>
</table>

Fix List Items
- JLOD-1186

Reference ADRP 1-02: Chaper4-6, Chapter 10-4
Entity Effectiveness / Status Pie Charts (2/2)

➢ Combat and Weapon Status Example
  ➢ Progressive Kill to ships in Unit
    ➢ Black circles indicate dead ships
    ➢ Green circles indicate alive ships
  ➢ Combat Goes Green to Red
  ➢ Weapon Status also updated

➢ Values are rolled up hierarchically
  ➢ Lower echelons change status fastest

➢ Ammunition and POL status not implemented at this time

➢ Reports status for external entities
  ➢ Uses shared health state of entities

Fix List Items
• JLOD-1186
Range Bearing Roses

- Generates Ranging and Bearing Overlays
- Accessible on all right clicks
AVLB Bridge Appearance

- AVLB Status Support
- Filter Support of “Has AVLB Capability”
- Controller Support on Appearances Tab
- Engineering Overlay Displays
- Cross Model Status (i.e. Show JCATS or others)

Fix List Items
- JLOD-1218
GUISE Controls

- GUISE controls moved to Appearance Tab
- Same controls as the Entity Info Tab

Fix List Items
- JLOD-1249
Improved Color Cues

- Enhanced display to include color box for each type of overlay
- Enhanced both Overlay and Engineering overlay controls to display color boxes
Engineering Overlay Controls

➢ Engineering now has Overlay Controls
  ➢ Display Engineering by class / instance
  ➢ Standard Create and Deletion controls
  ➢ Color Preferences controls
  ➢ Extended FIND support

➢ Extended Filtering Controls
  ➢ Internal / External

➢ Show / Hide Display Status
Emission Scheduler

- Support the grouping of emissions
- Supports Multiple Groups
- Mix of Radars and Jammers
- Notification of changes (i.e., New emitter)
- Groups saved in UOB file

Changes to original Set

Fix List Items

- JLOD-1178
Range / Bearing Displayed during Rubber Picks

➢ While building a sequence of locations, the ranges and bearing from the last selection will be displayed
  ➢ Distance is displayed in kilometers
  ➢ Bearing is displayed relative to compass North

➢ Tools / Editors Supported
  ➢ Route Editor
  ➢ Movement Order Editor
  ➢ Slowdown Area Editor
  ➢ Distance Tool

➢ Optionally Disable the feature from the raster DISPLAY menu

Fix List Items
• JLOD-1170
• JLOD-1171
• JLOD-1172
• JLOD-1168
• JLOD-1220
Position And Tasking Tool (1/7)

- Replacement of Existing Tool
- Can inject orders from Workstation
  - Does not require TechControl to inject files
- Support Richness of each Order Types
  - Itinerary can support “Cycles”
  - Routes can support “Round Trips”
- Summary of Orders
  - Quick view of Entities
- Order Details
  - Each Order Type has specific input needs

Fix List Items
- JLOD-1202
Order Overview – List of Entities and Orders
Orders can be injected from any workstation, not required to involve TechControl
Files can be saved in OLD format – CSV
Orders now saved in XML to support full richness of orders
Selecting row displays order details on the bottom of the window

CSV or XML Files
Entity List and Orders
Quick Data Entry
Orders Sent to Simulation

Fix List Items
- JLOD-1202
Position And Tasking Tool : No Plan (3/7)

- All Orders share the following window Items
  - Ability to change the type of Order given to the Entity
  - Display Distance and Speed units (Meters, Km, Miles, Nautical Miles)
  - Ability to assign Initial Position (Magic Move Entity)

- Example Magic Moves Entity to location Specified
  - Different Order Types are selected using the Order Type Combo box
Position And Tasking Tool: Navigate (4/7)

- Navigate order type commands the Entity to move on a given Graph
- Based on the Entity, the expected Graph will be displayed
Route order types commands the entity to use the given route
- Route will be created
- Support for Round Trip

---

<table>
<thead>
<tr>
<th>Location</th>
<th>Spacing Radius (m)</th>
<th>Vertical (m)</th>
<th>Type</th>
<th>Step Distance</th>
<th>Total Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>0:43:20.582N</td>
<td>130:51:19.128E</td>
<td>0</td>
<td>MSL</td>
<td>133.6 NM</td>
<td>133.6 NM</td>
</tr>
<tr>
<td>3:07:34.772N</td>
<td>130:52:56.689E</td>
<td>0</td>
<td>MSL</td>
<td>151.2 NM</td>
<td>284.8 NM</td>
</tr>
<tr>
<td>5:37:39.638N</td>
<td>132:21:00.869E</td>
<td>0</td>
<td>MSL</td>
<td>173.1 NM</td>
<td>457.9 NM</td>
</tr>
<tr>
<td>8:10:42.361N</td>
<td>132:13:46.694E</td>
<td>0</td>
<td>MSL</td>
<td>152.0 NM</td>
<td>810.7 NM</td>
</tr>
<tr>
<td>10:59:11.679N</td>
<td>129:45:29.857E</td>
<td>0</td>
<td>MSL</td>
<td>222.7 NM</td>
<td>833.3 NM</td>
</tr>
<tr>
<td>13:12:23.718N</td>
<td>129:38:57.979E</td>
<td>0</td>
<td>MSL</td>
<td>132.8 NM</td>
<td>966.1 NM</td>
</tr>
</tbody>
</table>

Fix List Items
- JLOD-1202
BeeLine Orders will be given to the Entity
Added ability to have more than ONE point
Position And Tasking Tool: Itinerary (7/7)

- Itinerary Orders will be given to the Entity
- Arrival Times are computed based on Entered Speed
- Support for Reusing the Plan (Cycling)
Depreciated “Position And Tasking” Tools

➢ New Position And Tasking GUI replaces existing Tasking GUI AND ATOPlanning Tool
➢ Old capability will be kept until next release

➢ Depreciated GUIs can only be accessed from the Simulation / Planner Tools
➢ Tools moved from “Tool Menu” to “Admin Menu”
JLVC Federate State

- Access from Admin Menu
- Use the HLA Controller GUI
- Fed State Window
  - Displays cross federation information
  - JCATS / JLOD Scenario Files shared

Fix List Items
- JLOD-1214
Close all non-raster Windows

- Access from the Windows Menu
  - Main Window only

- Sends Close to all Non-Raster windows
  - All Database Windows
  - IFF Editors
  - Entity Simulation Reports
  - HLA Report Windows

Fix List Items
- JLOD-1191
JLVC Support for IFF Mode S & 5

- New Entity Controller IFF Pane
- Removed all controls to update IFF values
- Relocated IFF Controls to IFF Settings Editor
- Access to Update IFF settings
- Button opens IFF Settings Editor
- New Mode-S / Mode-5 Aircraft Information
- Aircraft or ATO information now shared via the IFF object.
- Right click to Access the IFF Settings
JLVC Support for IFF Mode S & 5 (Continued)

- New IFF Settings Editor
  - Window for each entity (ie. Multiple open)
  - Edit IFF Settings for one entity at a time
  - Can have multiple IFF Settings Editors open simultaneously
  - Can update IFF Configuration dynamically

- New IFF Configuration Editor
  - Supports creating IFF definition on the fly without taking down the simulation for data
  - Uses all FCHAR IFF definitions
  - Window for each entity

NOTE: Windows Menu “Close All” will close these windows
Extended Engagements in Missile Flyout Report

- Tracks Federation Engagements
- Uses Weapon Fire, Munition Det
- Uses JLVC’s BDA or GroupBDA info

- Engagement Types Logged
  - Air to Ground/Air/Naval
  - Naval to Ground/Air/Naval
  - Ground to Air/Naval
  - Missiles (TBM, Cruise)
  - No Ground to Ground

- Includes Implicit Entities BDA
  - JLOD’s Populations
  - Warsim’s Units
  - Damage Codes per equipment group

**Damage Reasons**

<table>
<thead>
<tr>
<th>Entity Type</th>
<th>Alive</th>
<th>M-Kill</th>
<th>F-Kill</th>
<th>MF-Kill</th>
<th>K-Kill</th>
<th>Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRL CGO ST MTV M1655</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>Engagement Success</td>
</tr>
<tr>
<td>HIMMR/ARMORED M114 TOW</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>Failed Random Dmg</td>
</tr>
<tr>
<td>TRL CGO 1.6T M1452</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>Engagement Success</td>
</tr>
<tr>
<td>GENERATOR TRL</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>Engagement Success</td>
</tr>
<tr>
<td>PLS M1075</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>Failed Random Dmg</td>
</tr>
<tr>
<td>MTV TRACTOR M1085</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>Failed Random Dmg</td>
</tr>
<tr>
<td>SEMI TRL LOADED 25T M1724</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>Failed Random Dmg</td>
</tr>
<tr>
<td>PERSONNEL REPLACEMENT</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>No Damage Mapping</td>
</tr>
</tbody>
</table>

**Fix List Items**
- JLOD-1213
- JLOD-1216
Improved Missile play with MDA / DIS models

➢ Munition Flyout Report captures results from External Engagements
  ➢ External shooters and targets can be captured in engagement reports

➢ Supports Delayed Discovery of Weapon Fire Entities
  ➢ Delayed discovery of flyout object enables tracking to determine if shot was intercepted
  ➢ Delayed discovery of shooter enables proper tracking of shot origin

➢ Support of MDA’s Shots
  ➢ Shooter of Munition detonation is flyout object (expected launching system)

➢ HOWEVER, issues remain
  ➢ On single stage shots, Shooter on Weapon Fire is the missile and no flyout object provided
  ➢ DIS federates have no ability to send a BDA
  ➢ JLOD uses BDA to build all the engagement reports

Fix List Items
- JLOD-1205
- JLOD-1207
- JLOD-1210
Scenario Menu

- Concentrated all Scenario Related functions
- Moved Change Task Org
  - Was on Controller Window
  - Added ability to change sides
- Export Federation to OBS
  - Capture position, aggregate state, etc
  - Transfer state, mounting
  - Generates files injected into JTDS
- JLOD Database Tools
  - Moved from Admin menu

Fix List Items
- JLOD-1193
Change Task Organization

- Accessed from Scenario Menu
- Moved capability from Controller Window

- New Ability to change Sides
  - Top level unit can be reassigned sides
  - All subordinates also change sides
  - JLVC federation does not expect to change sides
  - Can be done in Planner and exported as OBS
  - Expected use case to repair OBS file
  - JLOD can “play” all game pieces in the OBS
  - Then export a new OBS file

- Enables changing the Superior
  - Impacts roll ups for logistics
  - Shared into the JLVC federation
  - Can be done while in JLVC with no ill-effects

- Can remove Superior
  - Moves Unit to Top level
  - Unit displayed under the Side

Fix List Items
- JLOD-1200

NOTE: Windows Menu “Close All” will close these windows
Improved OBS Export

- Accessed from Scenario Menu
- Captures All Entities in the Exercise
  - All Entities published will be captured
  - Current health, mounting, Task-Org, Owner
- Supports Different versions of OBS
  - JTDS tested version 4.1 and 4.0 formats
  - Created and updated JTDS scenarios
  - Supports 1.4, 2.0, and 3.0 formats
  - Not tested with JTDS
- Writes OBS Class Data, optional Scenario
- Uses original OBS ownership or current ownership based on transfers
- Federation Entities with no Side Data
  - DIS Entities
- Save Health States

NOTE: Windows Menu “Close All” will close these windows
Scenario Magic Jammer Group

- Accessed from the Scenario Menu
- Moved from Controller Group menu
- Supports Adding Jammers to Group of Entities
  - Same Jammer added all entities
  - If IFF exists, reconfigured to new values
- Select the Jammer to Add
- Select the target Entities
  - Press Selection Modes
  - Next Select Entities
- Submit command to simulation

NOTE: Windows Menu “Close All” will close these windows
Scenario Magic IFF Group

- Supports Adding IFF to Group of Entities
- Same IFF added all entities
- If IFF exists, reconfigured to new values

- Same Controls as IFF Configuration Tool
- No ability to Remove IFF from Entity

- Select the target Entities
- Press Selection Modes
- Next Select Entities

- Submit command to simulation

NOTE: Windows Menu “Close All” will close these windows
Scenario Magic Passive Radar Group

- Accessed from the Scenario Menu
- Moved from Controller Group menu

- Supports Adding Passive Radars to Group of Entities
- Same Passive Radar added all entities
- OBS Export does not support Passive Radars

- Select the Passive Radar to Add
- Select the target Entities
- Press Selection Modes
- Next Select Entities
- Submit command to simulation

**NOTE:** Windows Menu “Close All” will close these windows
Scenario Magic Radar Group

- Accessed from the Scenario Menu
- Moved from Controller Group menu
- Supports Adding Radars to Group of Entities
  - Same Radar added all entities
  - Radar must exist in Fchar to be added
- Select the Radar to Add
- Select the target Entities
  - Press Selection Modes
  - Next Select Entities
- Submit command to simulation

NOTE: Windows Menu “Close All” will close these windows
Scenario Magic Radio Group

- Accessed from the Scenario Menu
- Moved from Controller Group menu

- Supports Adding Radio to Group of Entities
  - Same Radio added all entities
  - Only ADD operation supported at this time

- Select the Radio to Add
- Select the target Entities
  - Press Selection Modes
  - Next Select Entities
- Submit command to simulation

NOTE: Windows Menu “Close All” will close these windows
### Airport/Seaport/Named Location - Pick Location

#### Forward Location NAME
- Use Name for ease of reading
- Converted to Lat/Lon when needed

### Location Type

<table>
<thead>
<tr>
<th>Location Type</th>
<th>JLOD-1211</th>
</tr>
</thead>
</table>

---

**Fix List Items**
- JLOD-1211
Operations Log (1/2)

- Accessed from Tech Control Window
- Displays Simulation Events
- Events not saved in UOB

NOTE: Windows Menu “Close All” will close these windows
Operations Log (2/2)

➢ Filter Displayed Events
  ➢ Events managed in simulation
  ➢ Workstation sync Events
  ➢ Displayed locally based on selections

➢ Events displayed in Table
  ➢ Table can be saved to CSV
  ➢ Table can be sorted by any column

Quick Reference Icons

NOTE: Windows Menu “Close All” will close these windows
Chem/Bio Creation and Display

- Create and Display Chem/Bio Regions
- Different Agents Supported
- Geometry either polygon or circle

- JLVC Federation Supported
- Publish Contam2D clouds
- Subscribe and inject external clouds
- All can be displayed on JLOD screens

- JLOD does not compute damage effects
- Regions are for situational awareness
Hover Tip on TOE Tree

- Hover Tip on Raster and TOE Tree
- Same information on both windows
- Entities, Rosters, Populations are supported
- Facilities also have tips on Facility tree

- TOE Hover Tip

- Raster Hover Tip
New Filter Attributes

- Filter Attributes used in Reports, Raster Displays, TOE filtering

<table>
<thead>
<tr>
<th>Grouping</th>
<th>Attribute</th>
<th>Description</th>
<th>Range of Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capabilities</td>
<td>Has AVLB</td>
<td>Is the Entity AVLB Capable</td>
<td>Has Bridge Capability, No Bridge capability</td>
</tr>
<tr>
<td></td>
<td>Towable</td>
<td>Can the Entity be towed by another</td>
<td>Can be Towed, unable to be Towed</td>
</tr>
<tr>
<td>DataBase</td>
<td>DIS Entity Type</td>
<td>DIS Entity type shared as a simple string (x.x.x.x.x.x.x)</td>
<td>DIS Entity Type encoded as a string</td>
</tr>
<tr>
<td>Game State</td>
<td>AVLB State</td>
<td>Current State of the Bridge Launcher</td>
<td>None, Stowed, Deploying, Recovering, Deployed</td>
</tr>
<tr>
<td></td>
<td>Towing State</td>
<td>Current towing State</td>
<td>Not Tordable, Hitched, Unhitched</td>
</tr>
</tbody>
</table>
NETN FOM Support

- Uses NATO’s FOM Set
  - RPR 2.0 schemas
  - NATO specific schemas (Unique-Physical / Unique-Aggregate / Area_Of_Interest)

- Tested at CWIX
  - Used Pitch RTI

- JLOD Master extra options
  - Requires JLVCIDs
  - Use Static Aggregate SilentEntities
  - Use RPR 2.0 Silent Entities

Fix List Items
• JLOD-1192
• JLOD-1246
Other Improvements

➢ **Federation Driven Saves** – JLOD honors the JLVC “Save” command that request each federate perform a checkpoint with the current simulation state.

➢ **Communication Improvement** – The method to sync data between the simulation and workstation changed, resulting in both a minor reduction in bandwidth used and the number of data syncs.

➢ **Entity Capabilities Improvement** – The method of determine speeds and movement graphs has been extracted from the simulation. It can now be accessed by all GUIs and other estimators.

➢ **ForceGen Improvement** – Ensured the default directory to search for OBS files is now exercise instead of scenario. It is now consistent with the simulation.

➢ **Harden Workstation Data Feeds** – The workstation was processing the simulation feed, as well as the duplicate HLA data feeds. It was fixed to only process the expected data stream.
Questions?

Mark Piscotty – CSL Program Lead
925-422-2052

Will Belue – CSL Operations Manager
925-424-5654
Backups
OLD Position And Tasking Tool: Overview (1/2)

➢ Old Tool is now Deprecated; But can still be accessed until JLOD V6.0
➢ Added ability to quickly populate Initial Position with Entity’s current position
➢ Edit an existing order by selecting row and then using the “Edit Order” menu item
➢ Build a new order by selecting the “Mission Timing” menu item

Quick Load of Initial Position Data

Fix List Items
• JLOD-1217
OLD Mission Timing Tool: Overview (2/2)

- Similar to new Position and Tasking Tool
- BUT, not as rich

Fix List Items

- JLOD-1217