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Joint Conflict and Tactical Simulation (JCATS) What's New in JCATS

2023 JCATS International Users Conference

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NNSA National Nuclear Security Administration

JCATS Current Status

- **The CSL supports the version in development, the latest version released and one version back**
- **Supported Release Versions:**
  - V17.0
    - Patch 17.0.1
    - Patch 17.0.2 (in development)
  - V17.1
    - No patches currently scheduled
- **RHEL Versions For Current Releases:**
  - V17.0.x – RHEL 7.9
  - V17.1.x – RHEL 7.9, 8.7, & 8.8
- **Version in development: JCATS v18.0**
  - Anticipated Release Date: January 2024
  - Anticipated Release to FMS: March 2024
  - RHEL version: 8.8

Casualty Auto-Recovery

- **Concept: A capability to define a network of recovery, repair, and treatment nodes that automatically recover damaged/injured systems from the battlefield and transport them to the associated treatment facilities; utilize recovery resources; consume supplies; transfer to higher treatment facilities as necessary; and return to unit in the manner defined (return or replace)**
- **This will still require the entirety of the logistics system to be defined in Vista and the Force Organization**
  - All units, systems, supplies, and casualty information must be defined
  - Nothing will be notional; just automatic
- **This project is being funded primarily by Australia**
  - Some additional funding from LLNL
- **Version 18.0 development**
  - Start building the framework of the Casualty network into the software architecture
  - Will integrate some work performed for a series of logistics analysis projects performed in 2023
- **The expectation is to have the first full implementation ready in JCATS v19**
  - Patches and bug fixes will follow as necessary
  - Recommendations for further enhancement is welcomed as well

Google Earth CAC KML Importer

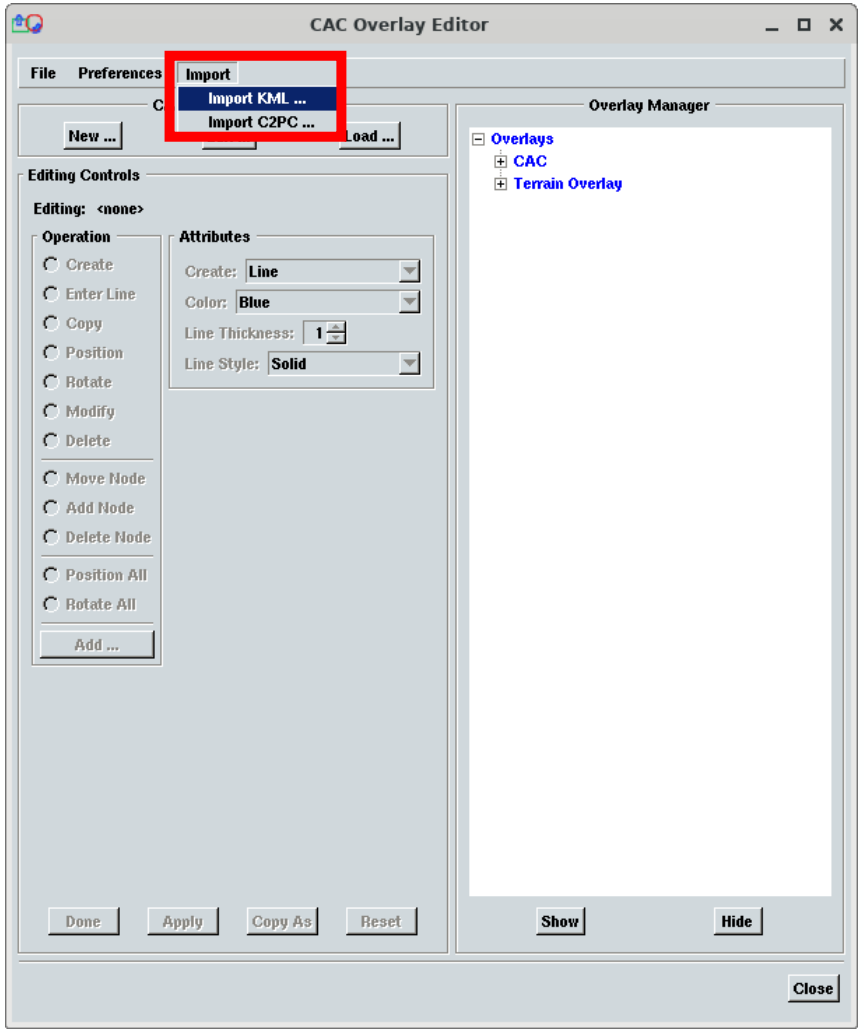
- **Google Earth allows the creation of rudimentary CAC overlays that can be exported in a KML format**

- **JCATS can import this KML format into a Playbox**
  - The overlay has lat/lon position data associated with it and must be imported into a playbox with the area in which the overlay was placed in Google Earth
  - Google Earth currently only supports lines, polygons, and markers with a heading
  - The Heading is imported; the marker is not

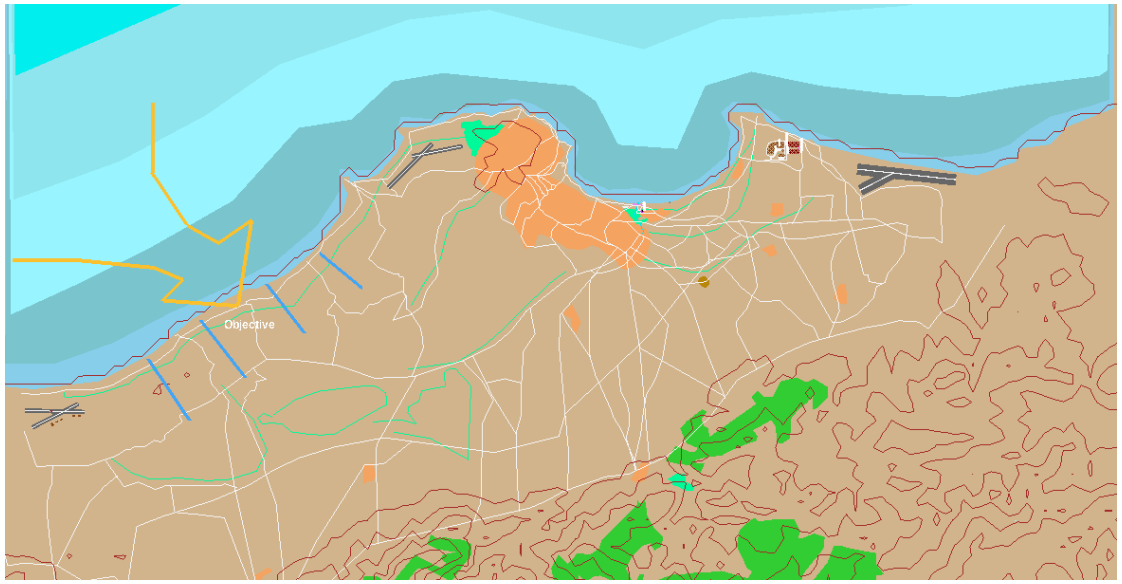
- **Editing imported KML overlays**
  - Each object created in Google Earth is imported as a whole object
  - Objects can mostly be edited by the JCATS CAC editor in the same way as standard JCATS CAC overlays.
    - the object can be positioned or rotated, or the color changed
    - the shape of the object is fixed; nodes cannot be moved, deleted or added

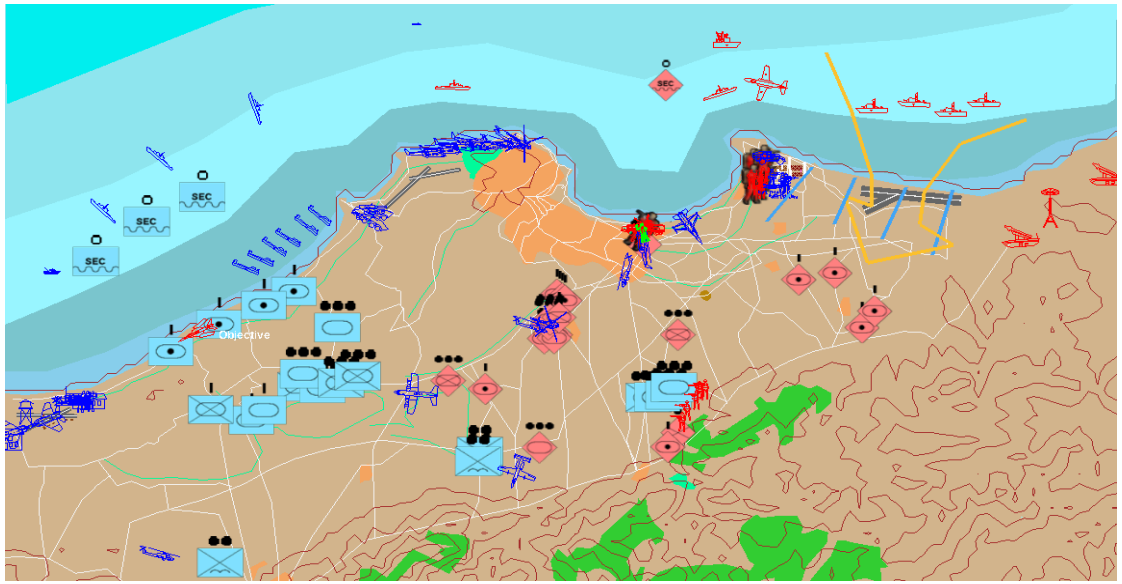
Google Earth CAC KML Importer

Google Earth



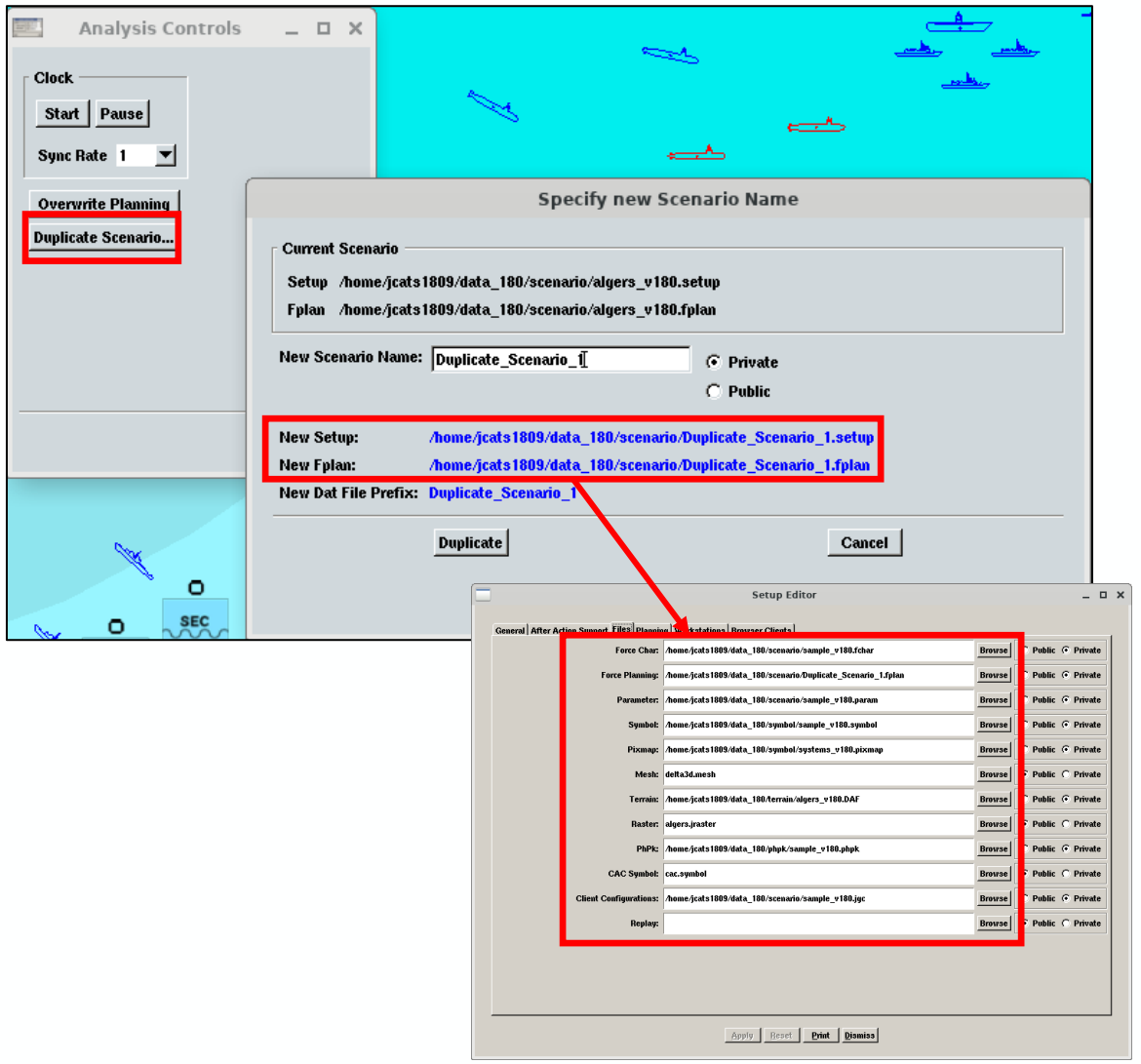
Google Earth CAC KML Importer



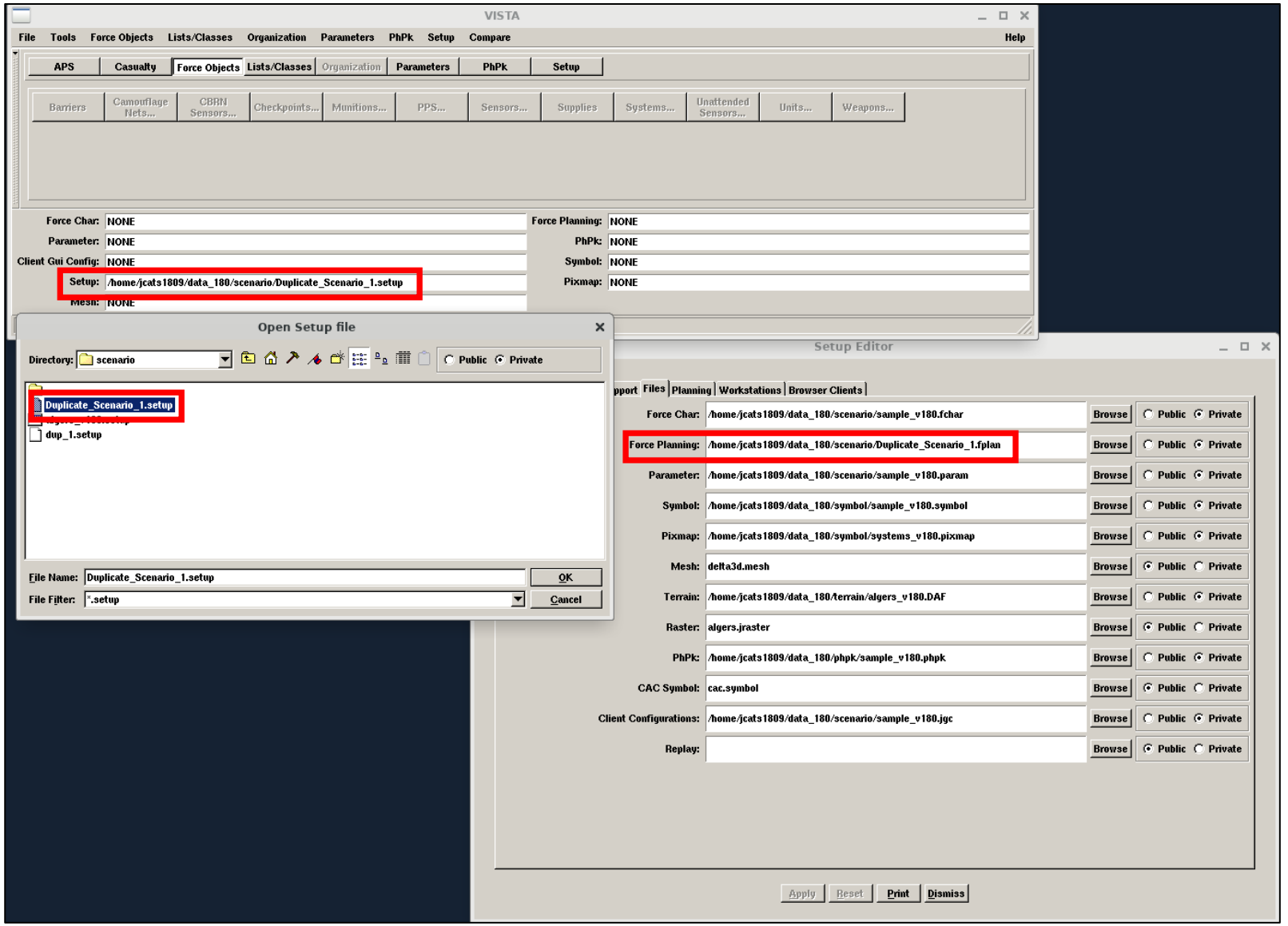


Analysis Duplicate Scenario

- **The Analysis controls have an option to duplicate a scenario; it acts as a combination Save All and Save As**
- **In analysis projects, it's sometimes necessary to take the existing scenario, make changes to it, and save it as a new scenario**
- **In some cases, many of these excursions may be required to capture many different contingecies**
  - Duplication saves the modified Fplan file with a new, user-defined name and associates the fplan with a new Setup file created in the same process
  - Duplication is limited to only and both the Setup & Fplan files
- **The enhancement lets the operator choose which file(s) to duplicate; similar to the Setup-Files editor**



Analysis Duplicate Scenario



Other Analysis Upgrades

- **Option to set the Batch Random Seed from SimExec**
- **Behavior code allows comments**

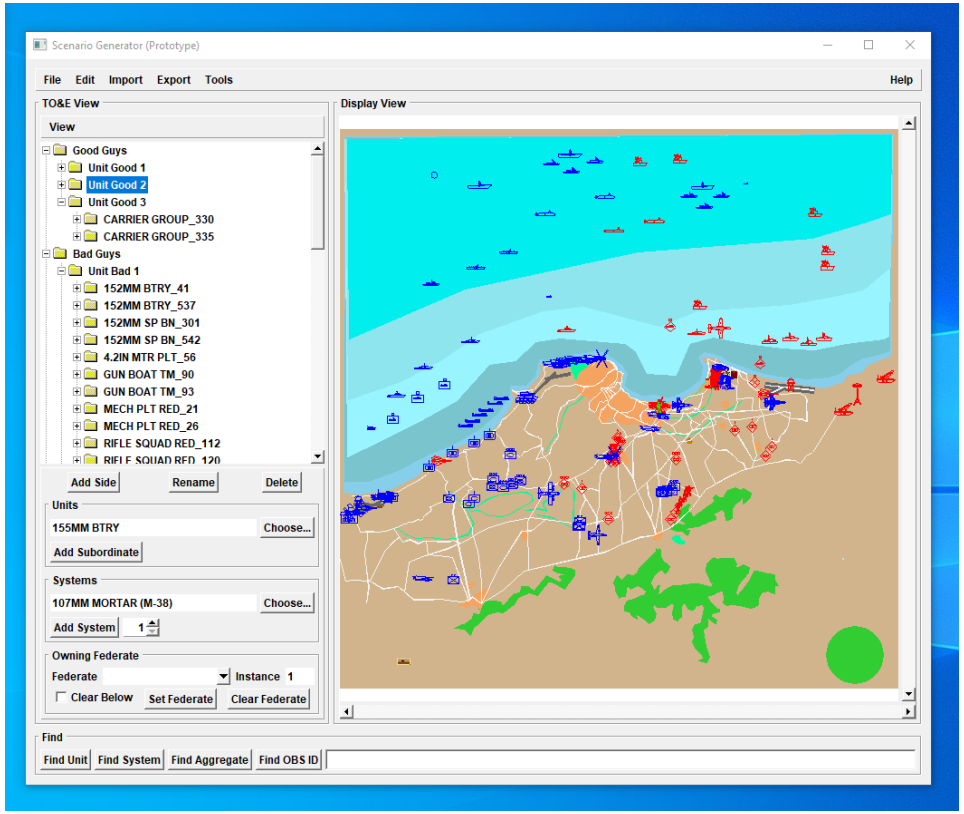
Other Enhancements

FOM compatibility:

- NETN-MRM (Multi-Resolution Modelling)
  - Consume & process order to activate/deactivate, aggregate/deaggregate, & split/merge
- NETN-ETR (Entity Tasking & Reports)
  - Process requests to performs tasks and report state to the federation
  - Generate reports
  - Performs tasks
- NETN-ORG (Organization)
  - Dynamically create the Force Organization from Federation information
  - Publish Force Organization into the federation and assign modeling responsibilities to other federates
- RPR3 based on JLVC FOM

Windows-based Scenario Generator

- Currently only provided to JFTC in v17.1



Containerized Web Server

- **Use a container for the Web Server**
- **Enhances Security**
  - Isolated from OS
  - Restricted access to resources
- **No noticeable change to JCATS operation**
- **Future work may extend containers to other aspects of JCATS**
- **Portable, isolated, self-contained environment with everything an application needs – binaries; configuration files, etc.**
  - Easy to modify and iterate upon
- **Operate in layer above OS**
- **Multiple containers may be run simultaneously – limited only by HW capability**
  - Only contain high-level software
  - Highly scalable
  - More efficient use of resources than VMs

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