
2026
BSI
EURO-MAG
PN-01 134 km
HDG 237M 240T P +0 R -58
IAS 500 kts GS 500 kts
MSL 50008 ft AGL 49890 ft
1.9 G
CG-98 68 m
HDG 145M 148T P +0 R +0
IAS 66 kts GS 66 kts
MSL 1263 ft AGL 1062 ft
1.0 G
AIM-120 AMRAAM
TOF: 00:09 / TTI: 00:34
TLAM-E
TOF: 05:51 / TTI: 01:22
STN:11733
Skyhunter
Aggregate
SA-11
BSI BATTLESPACE SIMULATIONS
Don't settle for only part of the battlespace

MACE 2025 to MACE 2026

- Based on user feedback
- Major improvements in performance
- Upgrade to latest .NET
- All forms moved to common Avalonia UI elements

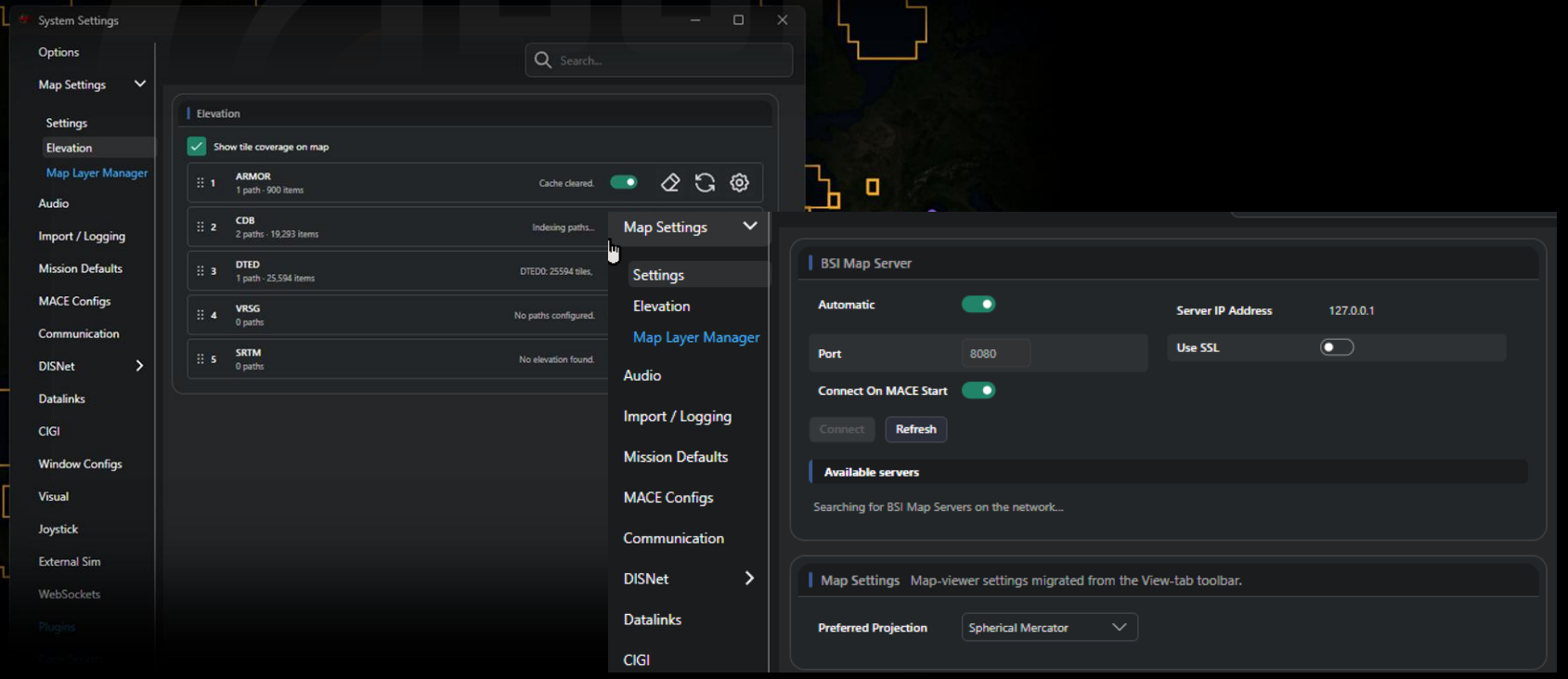
GIS Data Setup

2025

- System Settings>
  - Communication
    - Worldwide Map Server Connection
    - Worldwide Imagery Connect
  - Data Paths
    - Elevation
    - Imagery (of some type)
    - Maps (of some types)
- Connection Menu
  - Online Tiles
  - Imported Tiles
- Layer manager – Display or not

2026

- System Settings Map Settings –
  - Connect to BSI Worldwide Maps (Automatic)
  - Map Datum
  - Elevation Data – colon coded map coverage
- Map Manager – Everything Else – Next Slide



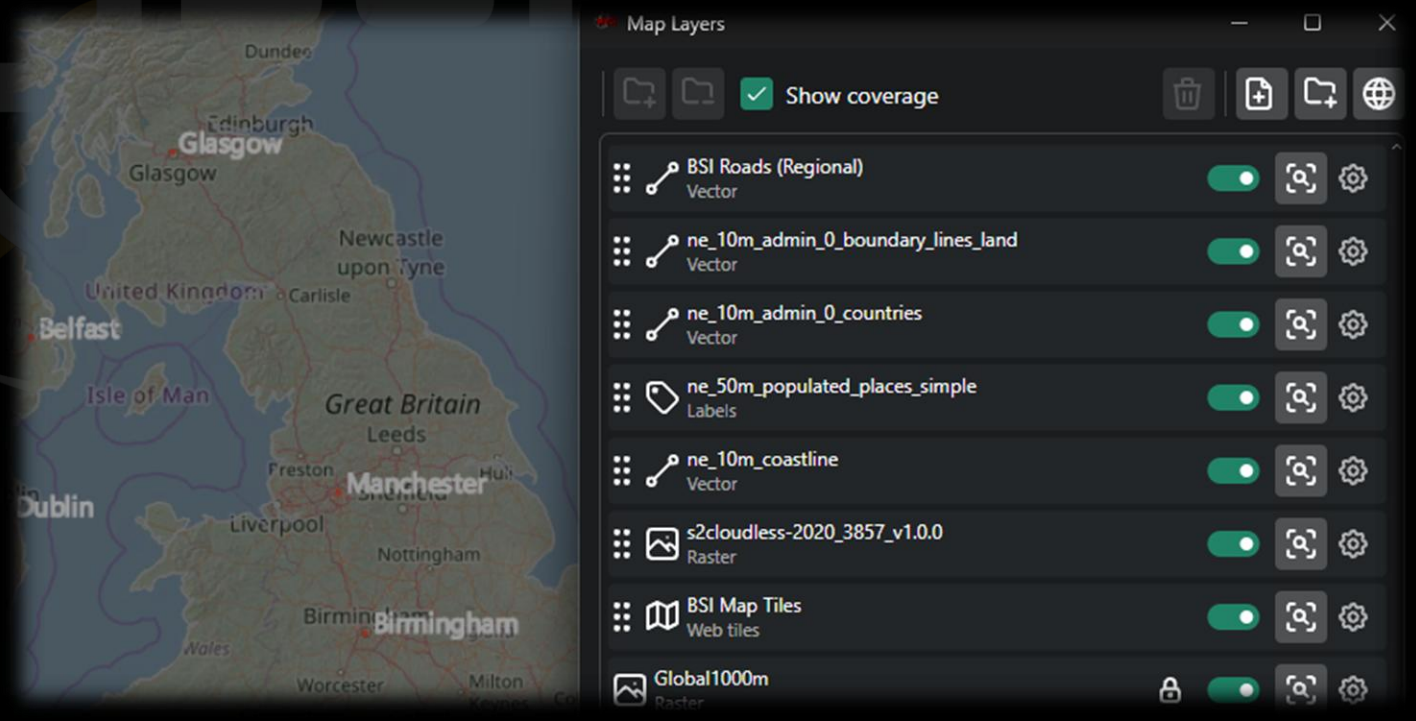
GIS – Map Manager

2025

- System Settings>
  - Communication
    - Worldwide Map Server Connection
    - Worldwide Imagery Connect
  - Data Paths
    - Elevation
    - Imagery (of some type)
    - Maps (of some types)
- Connection Menu
  - Online Tiles
  - Imported Tiles
- Layer manager – Display or not

2026

- All raster – maps – tiles – vectors – imagery
- Drag and Drop data into the manager
- Managed as movable layers
- Display or not – Auto display at scales



Multiple Map Windows

2025

- Just one map

2026

- Up to 3 additional at different scales
- Independent platform follow (moving map)
- Independent grid display
- Independent mission toolbars (Next slide!)

Coming Later

- Independent Map type (e.g. Air chart on one, imagery on another)

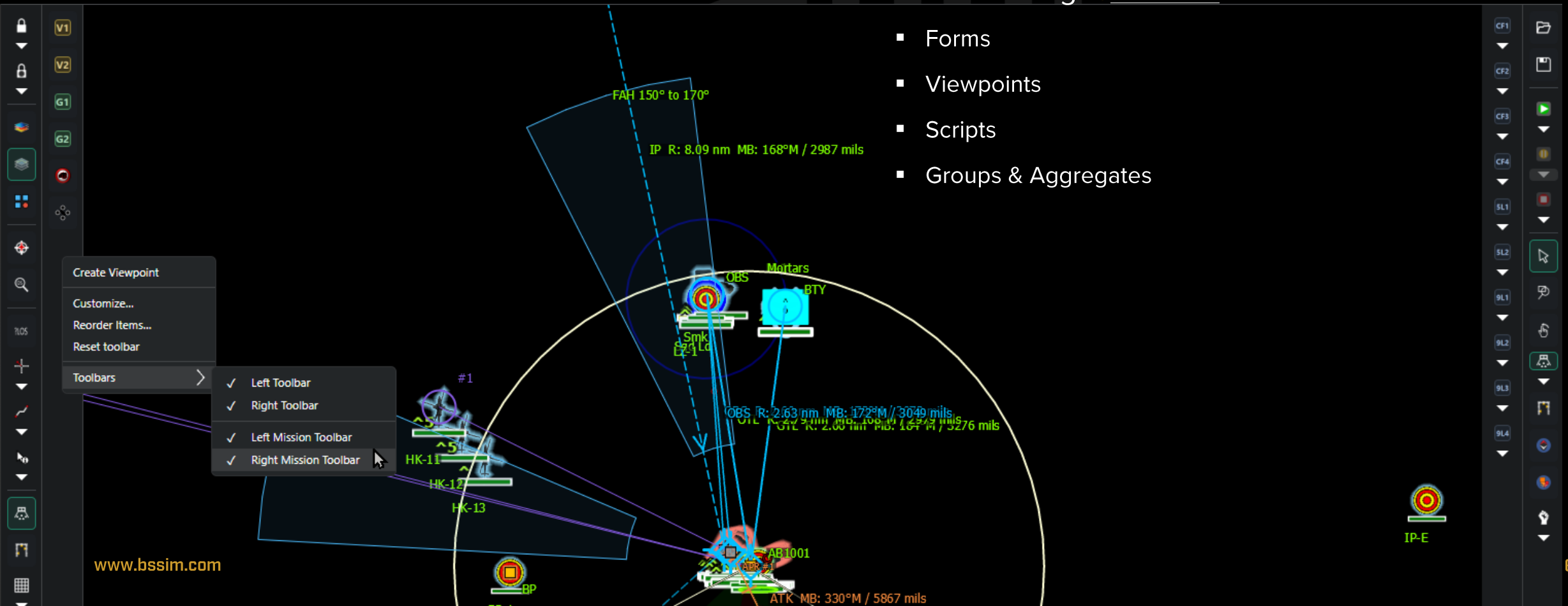
System and Mission Toolbars

2025

- Quick access toolbar only – buttons only

2026

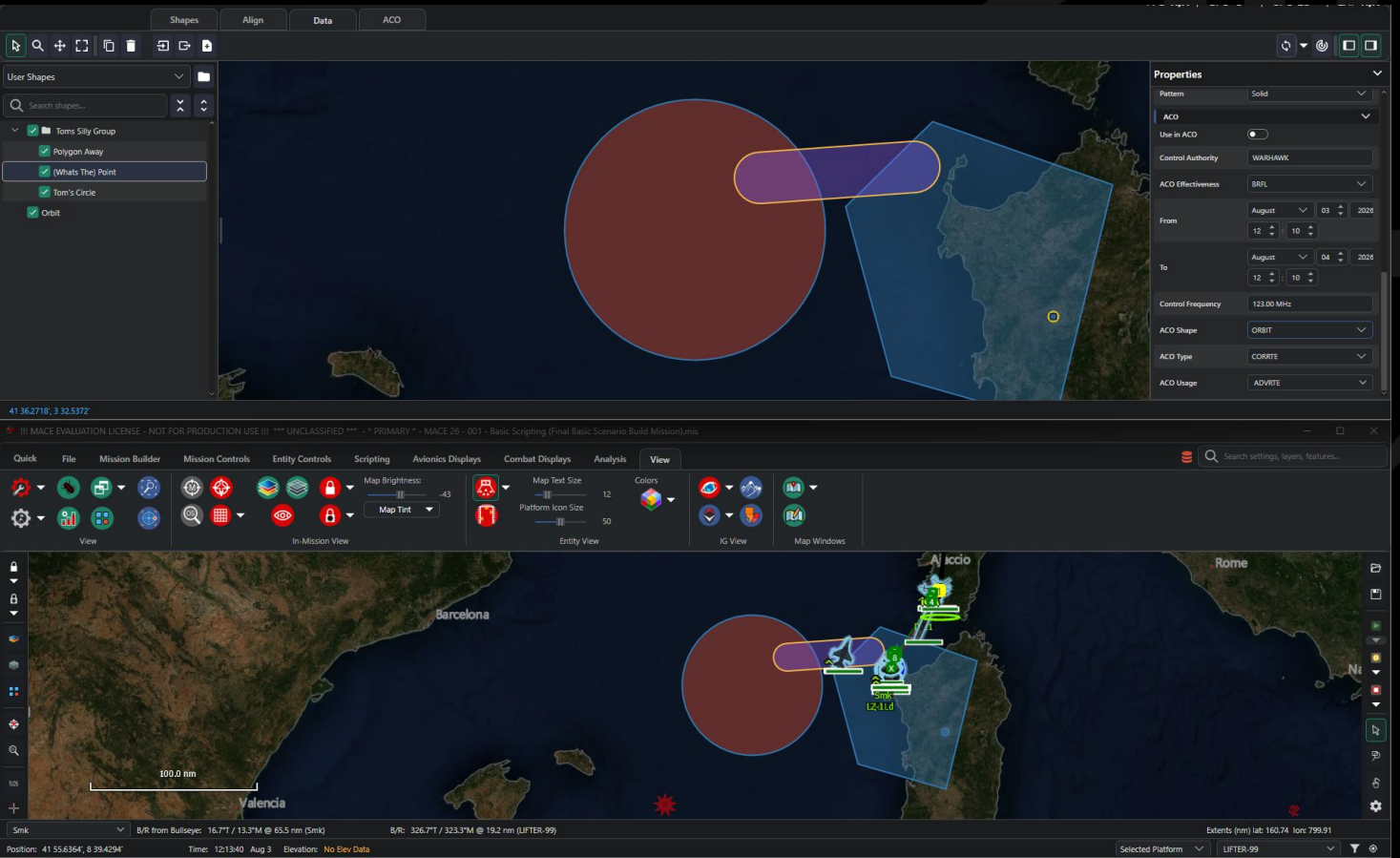
- Left and right system toolbars – for all missions
- Left and right mission toolbars – save with mission
- Forms
- Viewpoints
- Scripts
- Groups & Aggregates



Map/Shape Editor

2025

- Shape tool on main map
- ACO export from tool



2026

- Separate window with Map – show entities or not
- All shapes consolidated and saveable with mission – including ACO
- Make groups and categories to organise
- Point edit and import from csv/text
- Copy shapes and groups
- Import/Export including ACO
- Live update in ARMOR

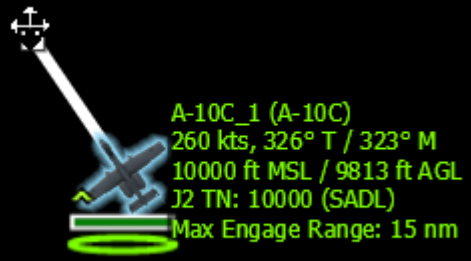
Platform Vector Controls

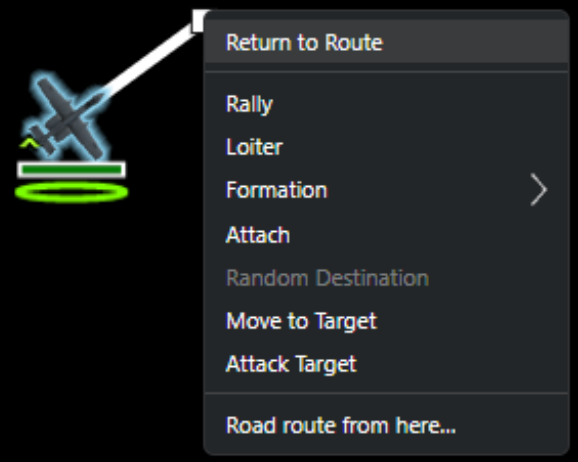
2025

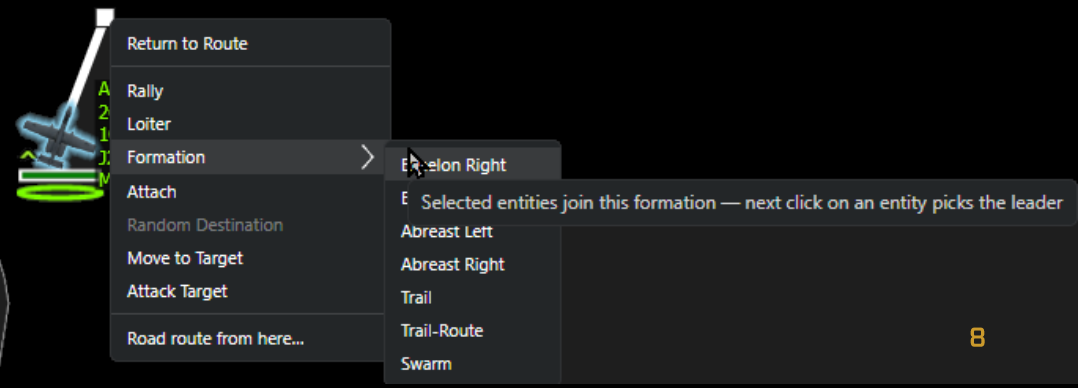
- LMB Click on vector to start LMB to set vector direction
- RMB to Return to Route (intent)

2026

- CTRL LMB to move like platforms / waypoints etc
- RMB on End of Vector -■ to
  - Return to route
  - Attack
  - Move to target
  - Loiter
  - Rally
  - Formation
  - Attach
  - Road Routing







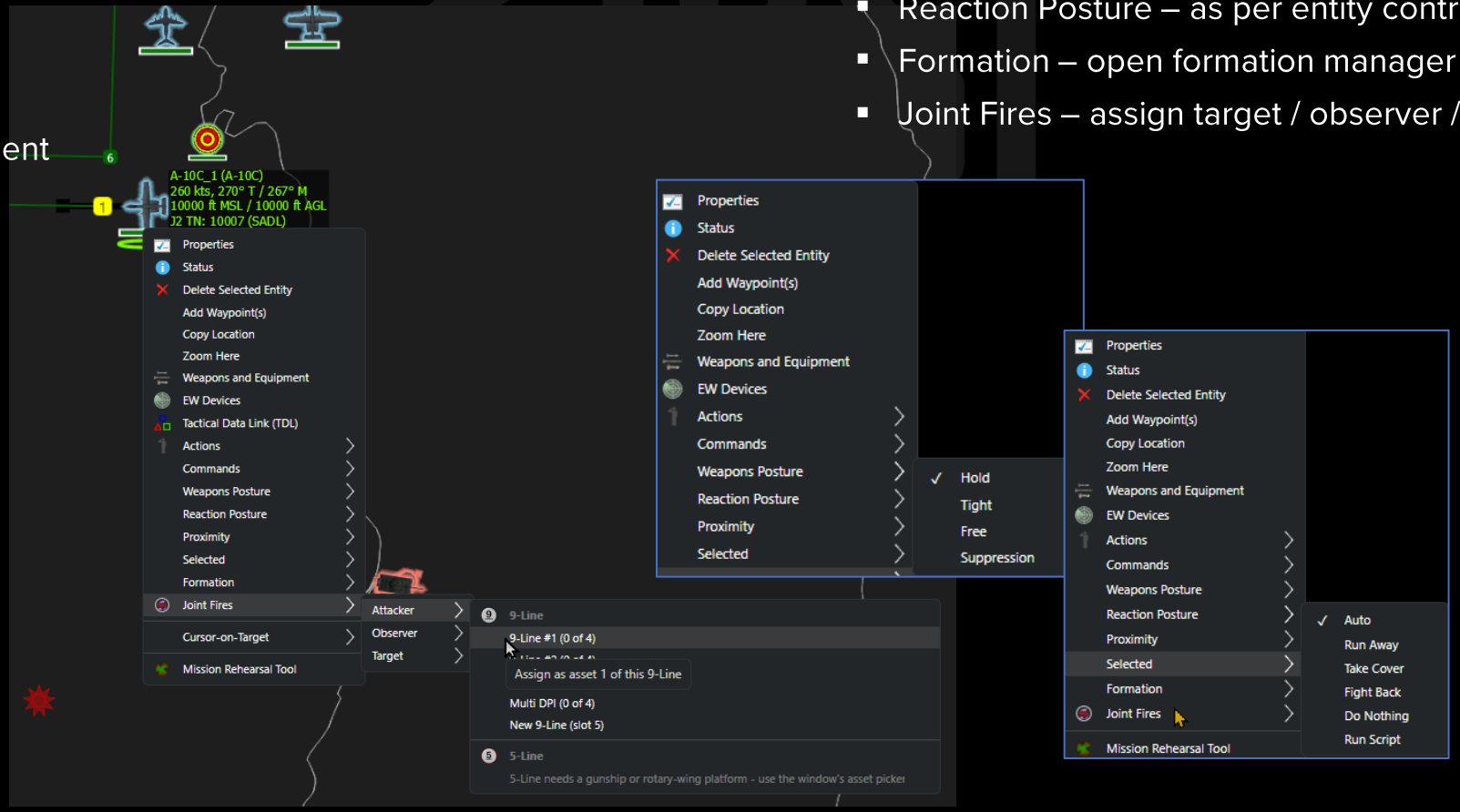
Extended Platform Context Menu

2025

- Context Menu (not many entity control actions available)
  - Script Templates
  - Commands
  - Create Aggregate
  - Weapons & Equipment
  - EW Devices etc

2026

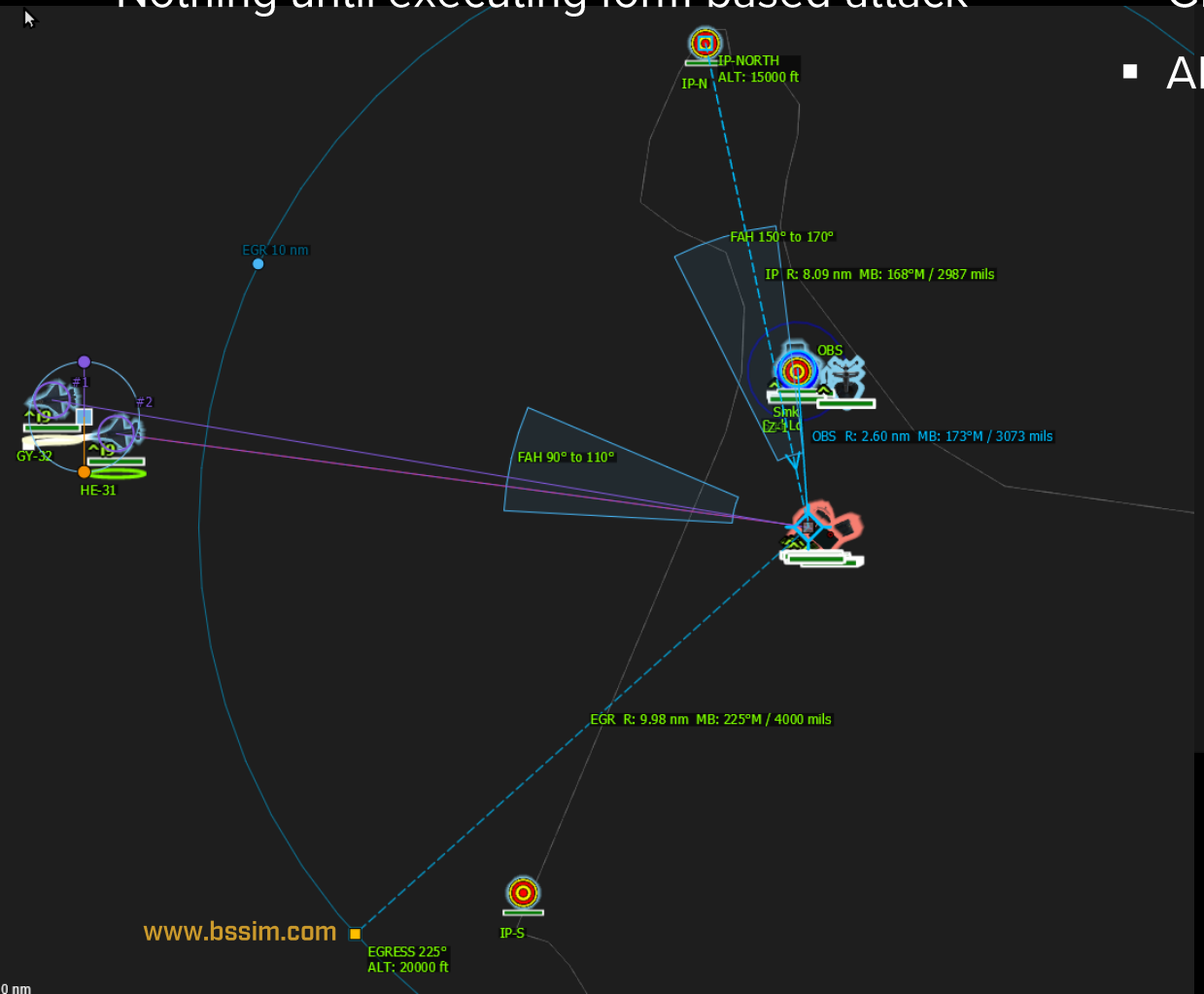
- Entity controls available from context menu
  - Weapon Posture – as per entity controls
  - Reaction Posture – as per entity controls
  - Formation – open formation manager
  - Joint Fires – assign target / observer / attacker to any form



Graphical Attack Plan/Preview (GAP)

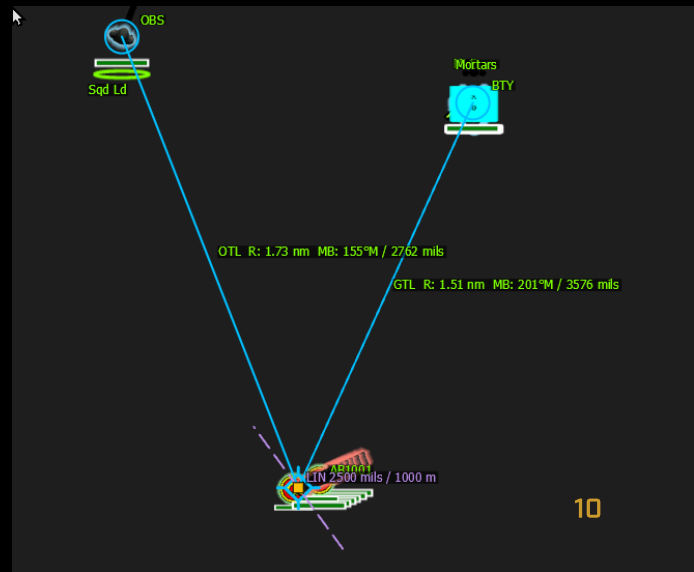
2025

- Nothing until executing form-based attack



2026 – Mind the Gap!

- Graphical representation of key elements of attack on map
- All can be dragged-and-dropped to change parameters
  - Observer position
  - Target position
  - IP / BP / Egress point
  - Attacking assets
  - Attack direction FAH arcs – GTL – OTL
  - Laser Arcs



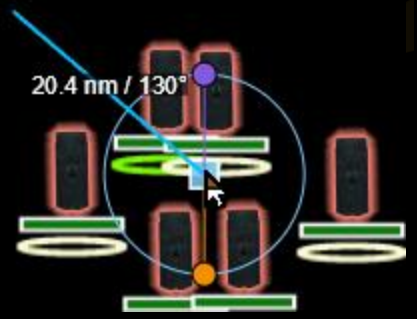
Groups on The Map

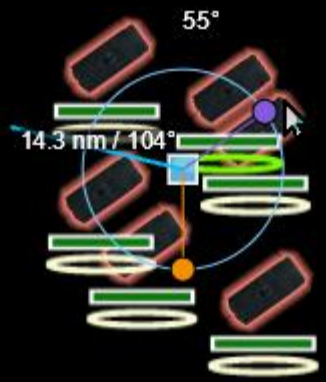
2025

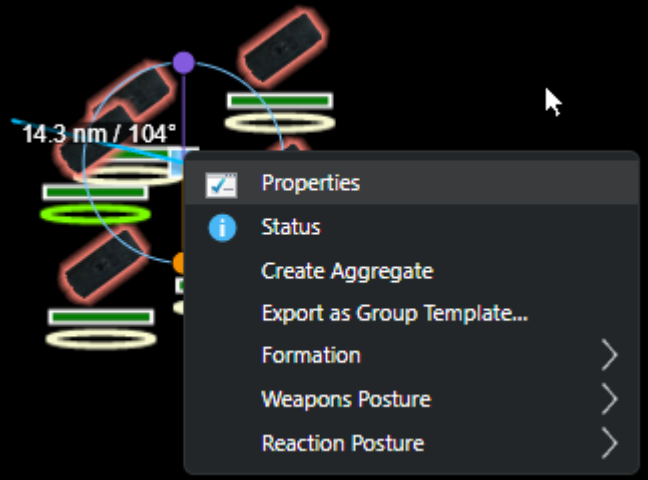
- Move Group
  - CTRL LMB anywhere on map that was empty to drag and move
- Rotate Group
  - Through mission builder tab
- Formation – individually through each platform's properties

2026

- Move and Rotate via Group Anchor
- Assign as Group in Group manager
- Assign as Aggregate
- Assign formations
- Assign weapons & reaction postures







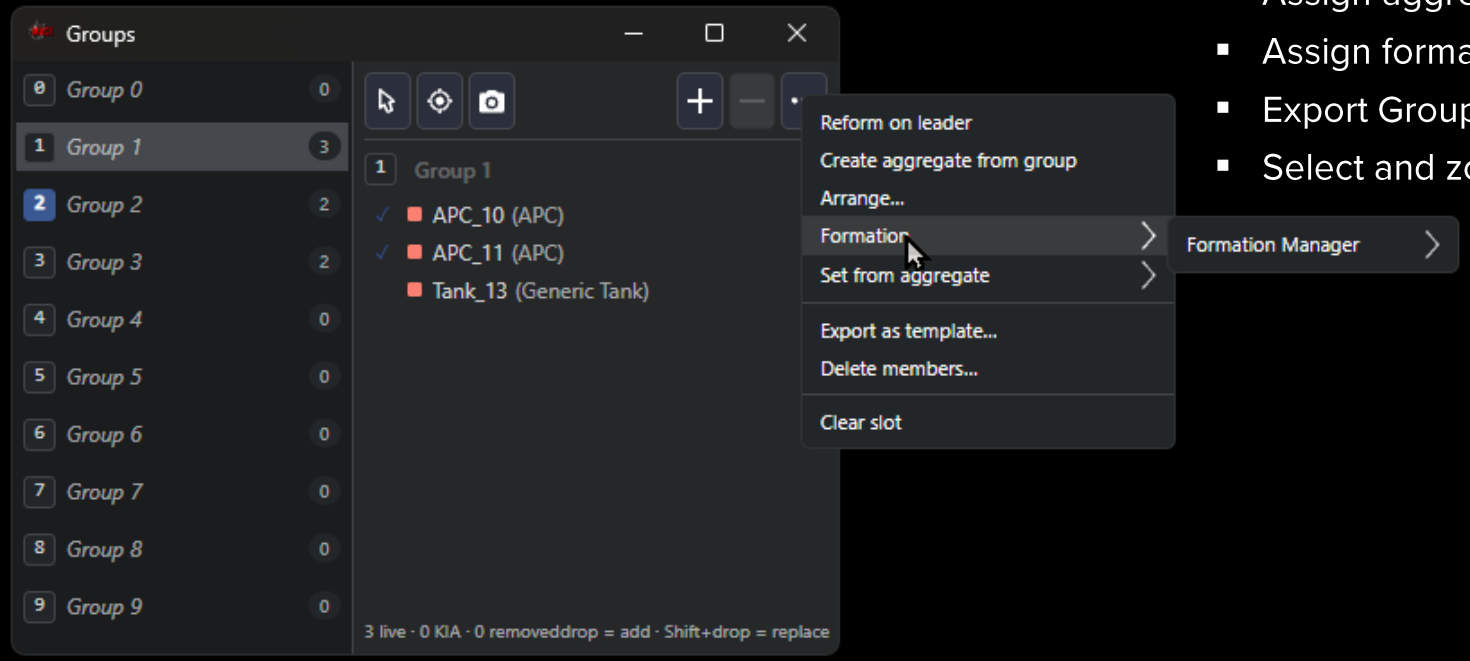
Groups Manager

2025

- Assign with CTRL + 0 to 9
- Recall with ALT + 0 to 9
- No edits or visibility of what was in each group

2026

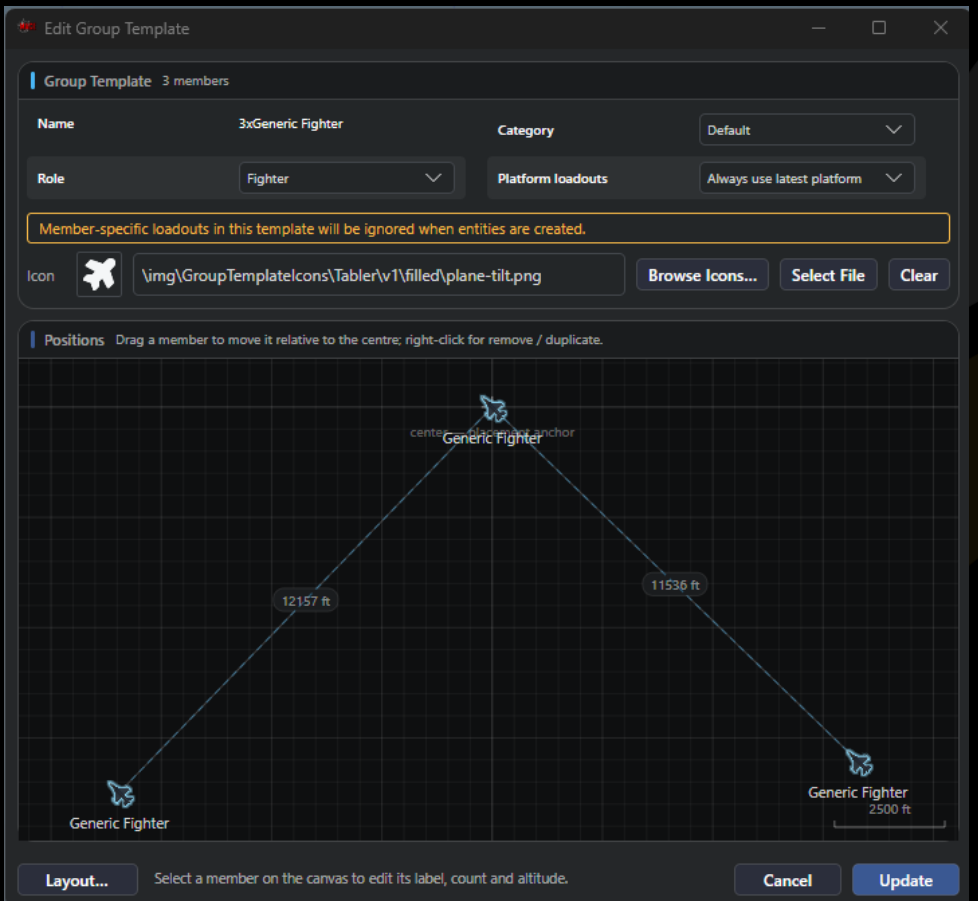
- Group manager
  - CTRL+ 0 to 9 still works AND opens group manager
  - ALT + 0 to 9 still recalls these Quick Groups
  - ‘n’ number of additional (non-quick) groups
  - Drag and drop in and out from map / between groups
  - Assign group from selected platforms on map
  - Assign aggregate from group
  - Assign formation to group
  - Export Group Template
  - Select and zoom to group

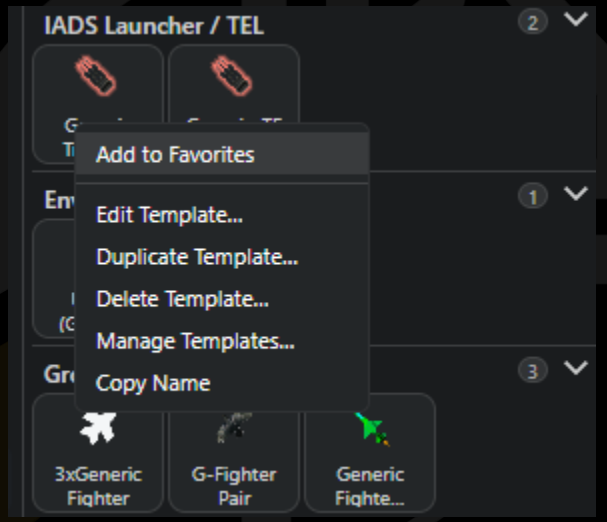


Group Template Edit

2025

- Export Group Templates
- No Template Post Export Edit – just overwrite





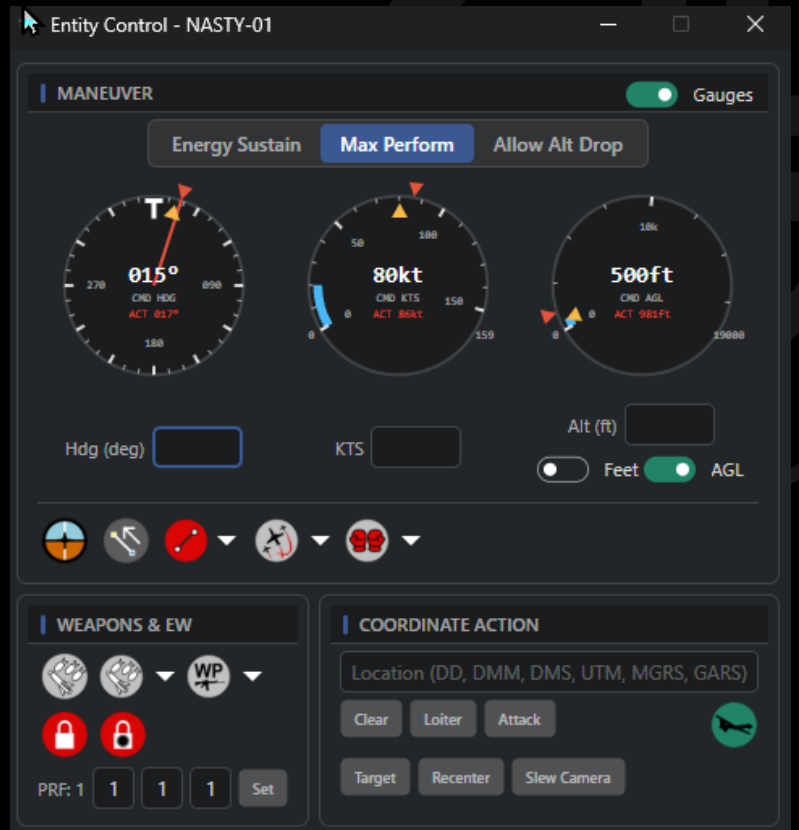
2026

- Editable - Right mouse click on group in mission builder
  - Update: Reposition / Reclassify / Different Icons

Popout Entity Control Form Improved

2025

- Basic platform control Hdg/Alt/Spd
- Coordinate actions – attack, slew camera, centre, loiter
- Release weapons, Next WP
- PRF
- Manoeuvres



2026

- All that +
  - Maneuver State
  - Weapon Posture
  - Reaction Posture
  - Open sensor control
  - Assign Target
  - Open Weapons & Equipment
  - Change Energy State
  - (Optional) Basic instruments with Hdg/Alt/Speed control

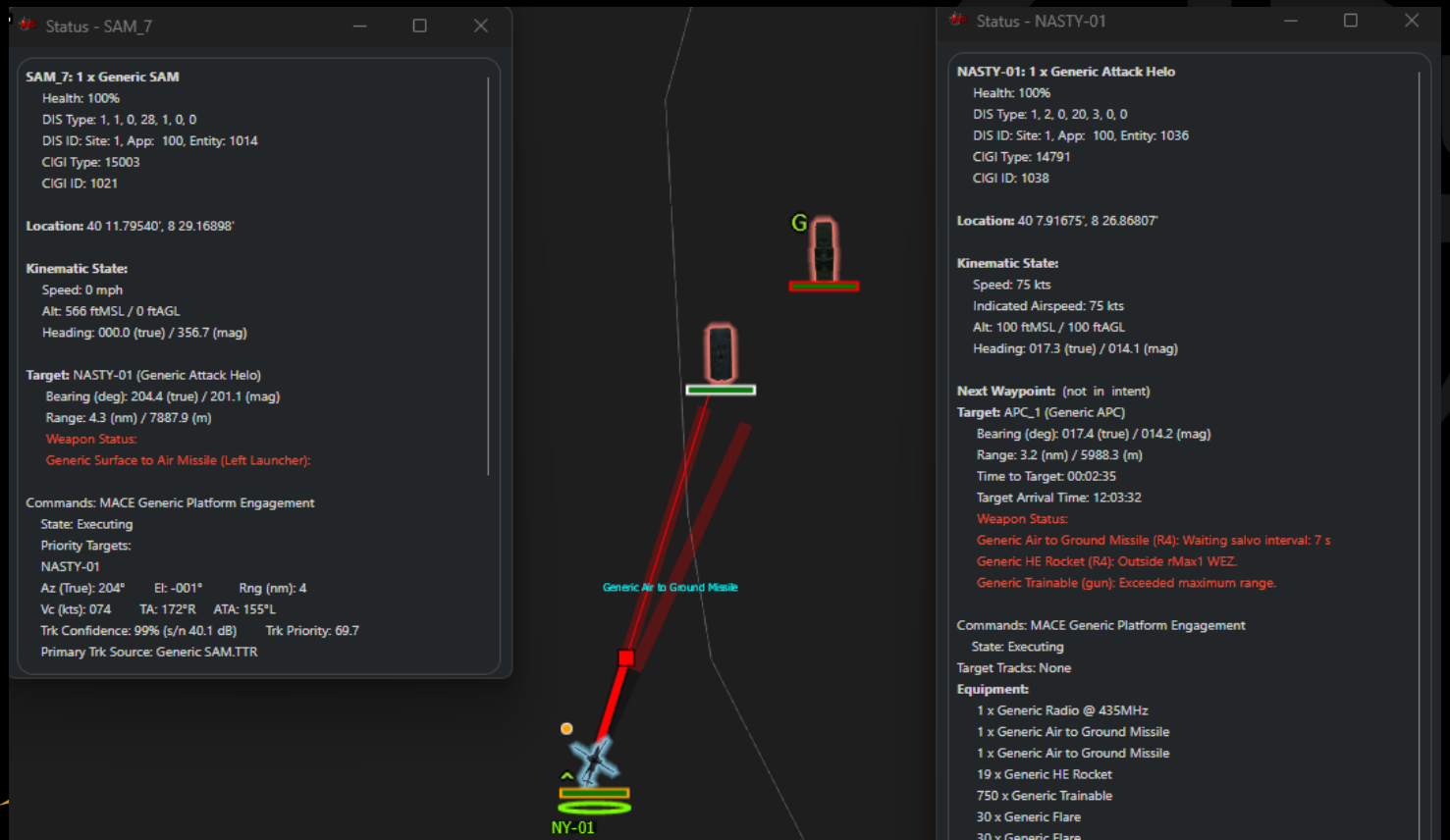
Multiple Status Windows

2025

- Just status from active platform in platform properties

2026

- Multiple status windows – enables better monitoring of scenario
- E.g. threat system engagement vs aircraft targeting ground target – who is in WEZ / being jammed etc



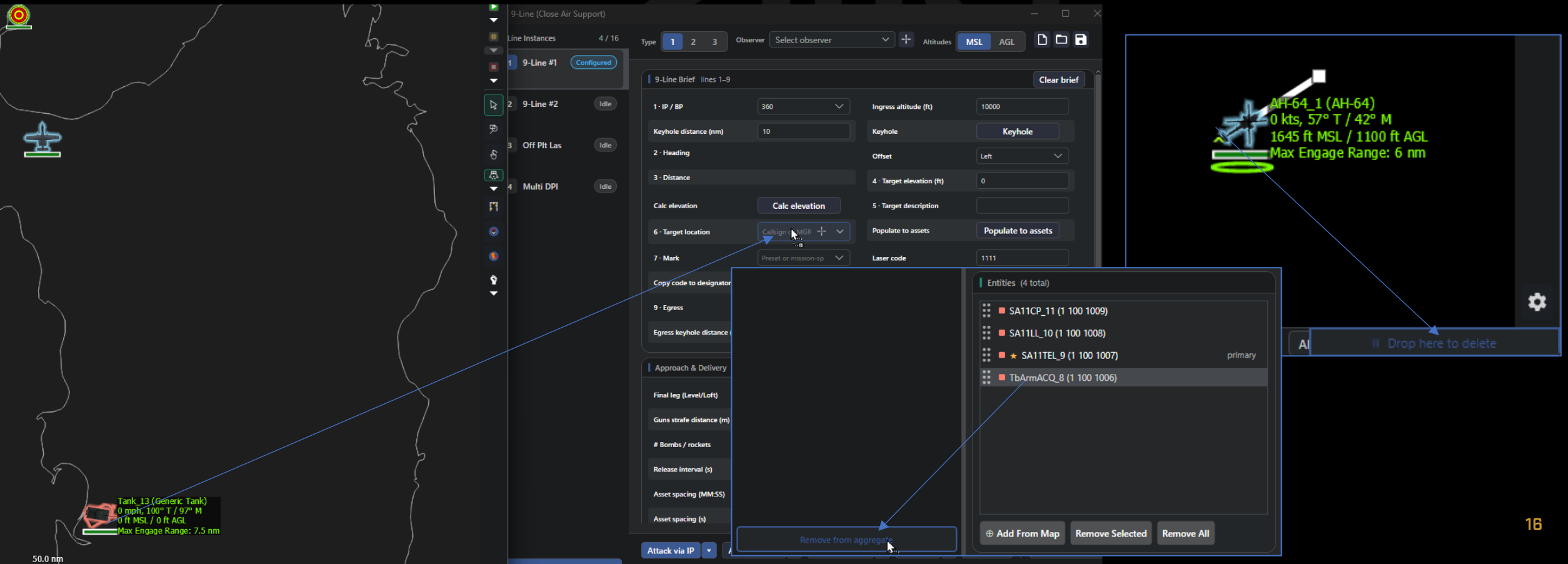
Data Entry – Drag and Drop

2025

- No Drag and Drop – copy paste only and/or select from map

2026

- Most data entry fields – LMB on map object/location drag into data field
  - OR Drag and drop to bin



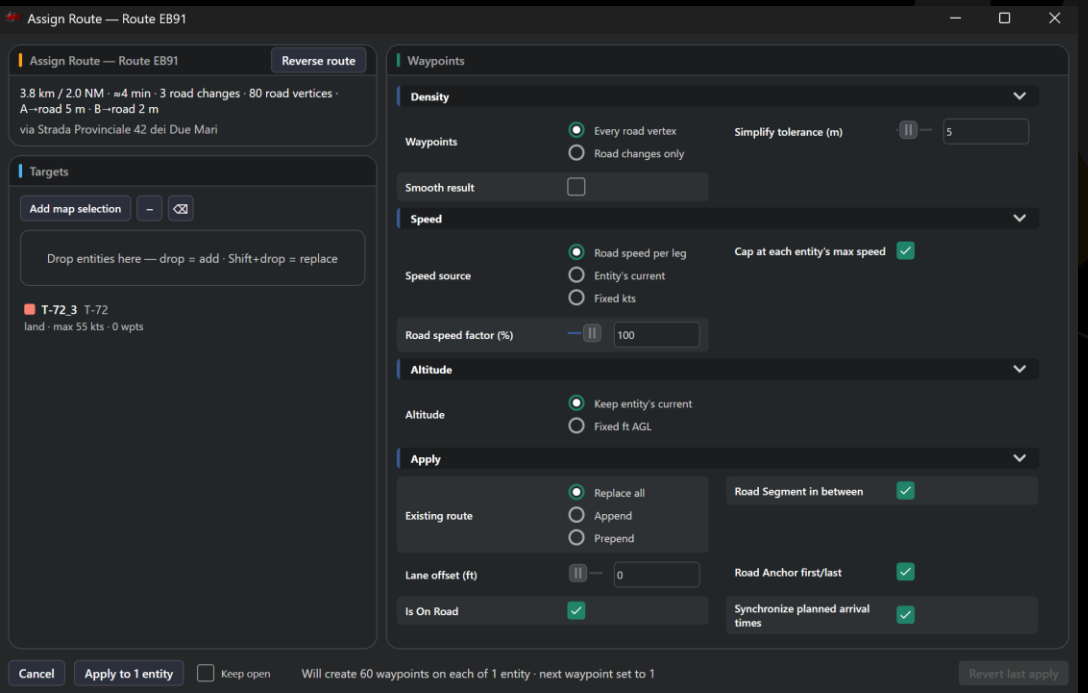
Road Routing

2025

- Attach to road – by Segment
- Pathfinding & CTRL+RMB

2026

- New regional & local road routing algorithms
- Create routes and allocate to multiple platforms or groups
- Available from platform vector context menu inc. quick routing
- Pathfinding & CTRL+RMB still available
- Make routes to be applied later with map routing tool



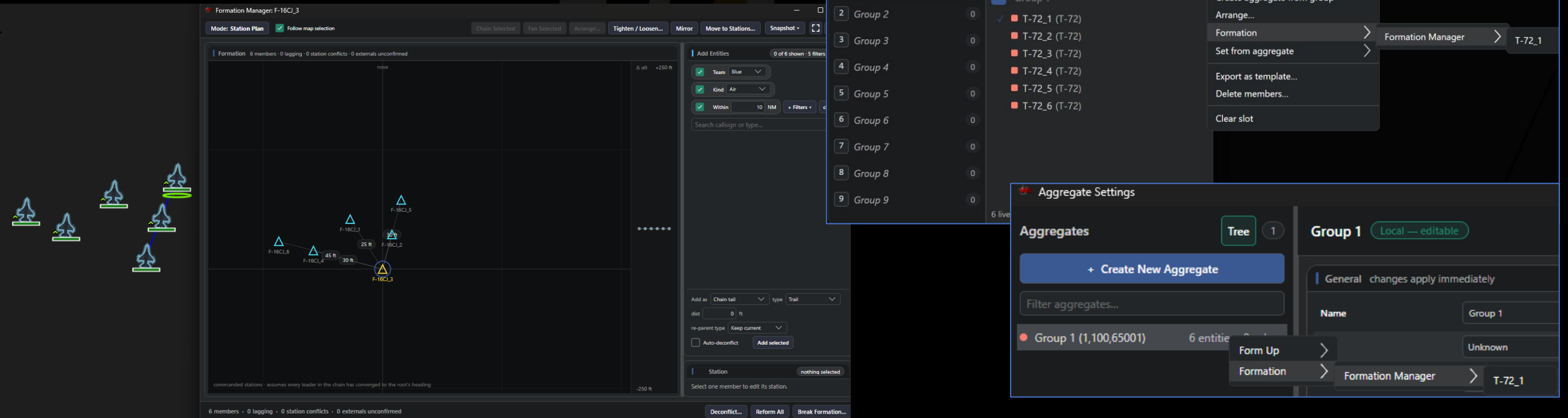
Complex Formations

2025

- Formation from platform properties
- Advanced formation edit form

2026

- Still available in properties – also Vector Context Menu
- Formation editor + force platforms to snap to position
- Apply to groups/selections/aggregates



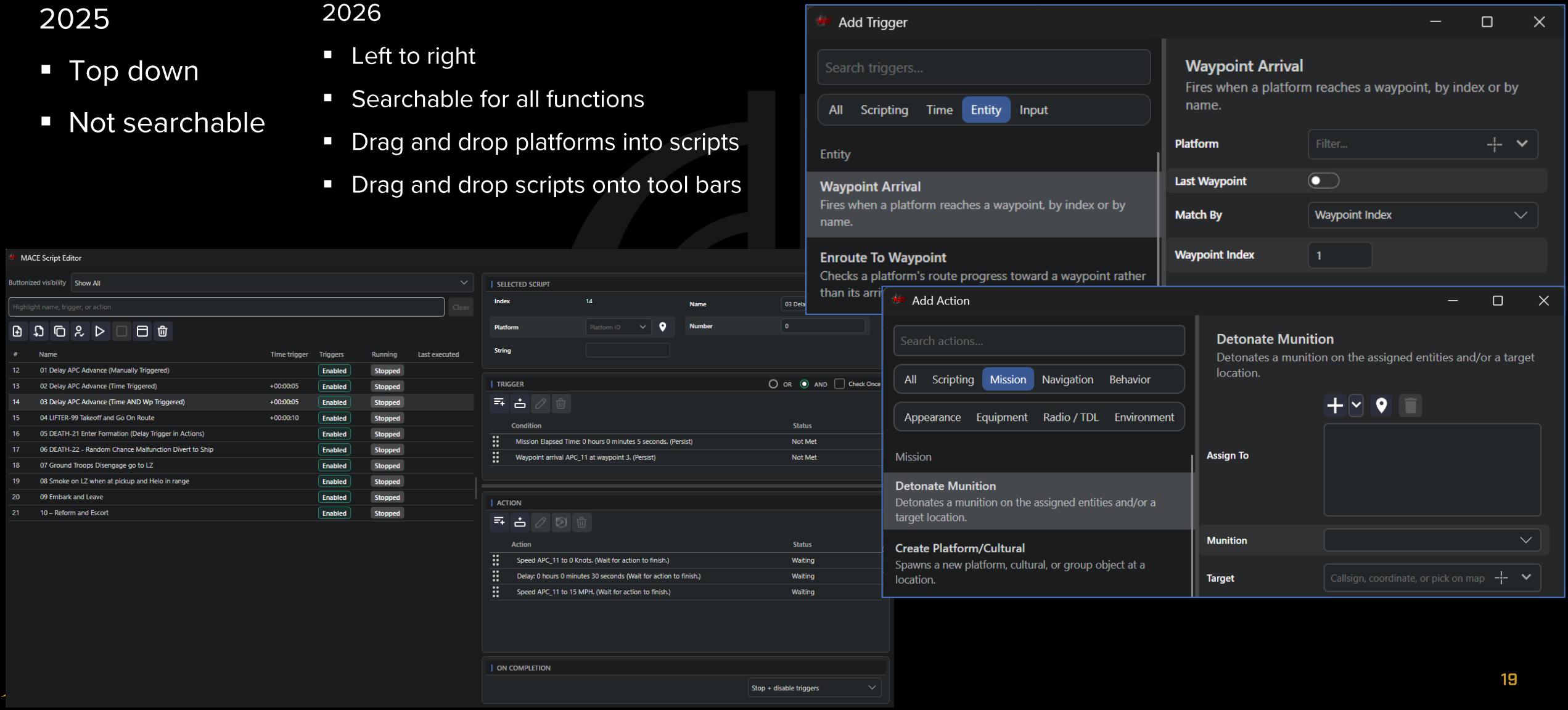
Scripting UI

2025

- Top down
- Not searchable

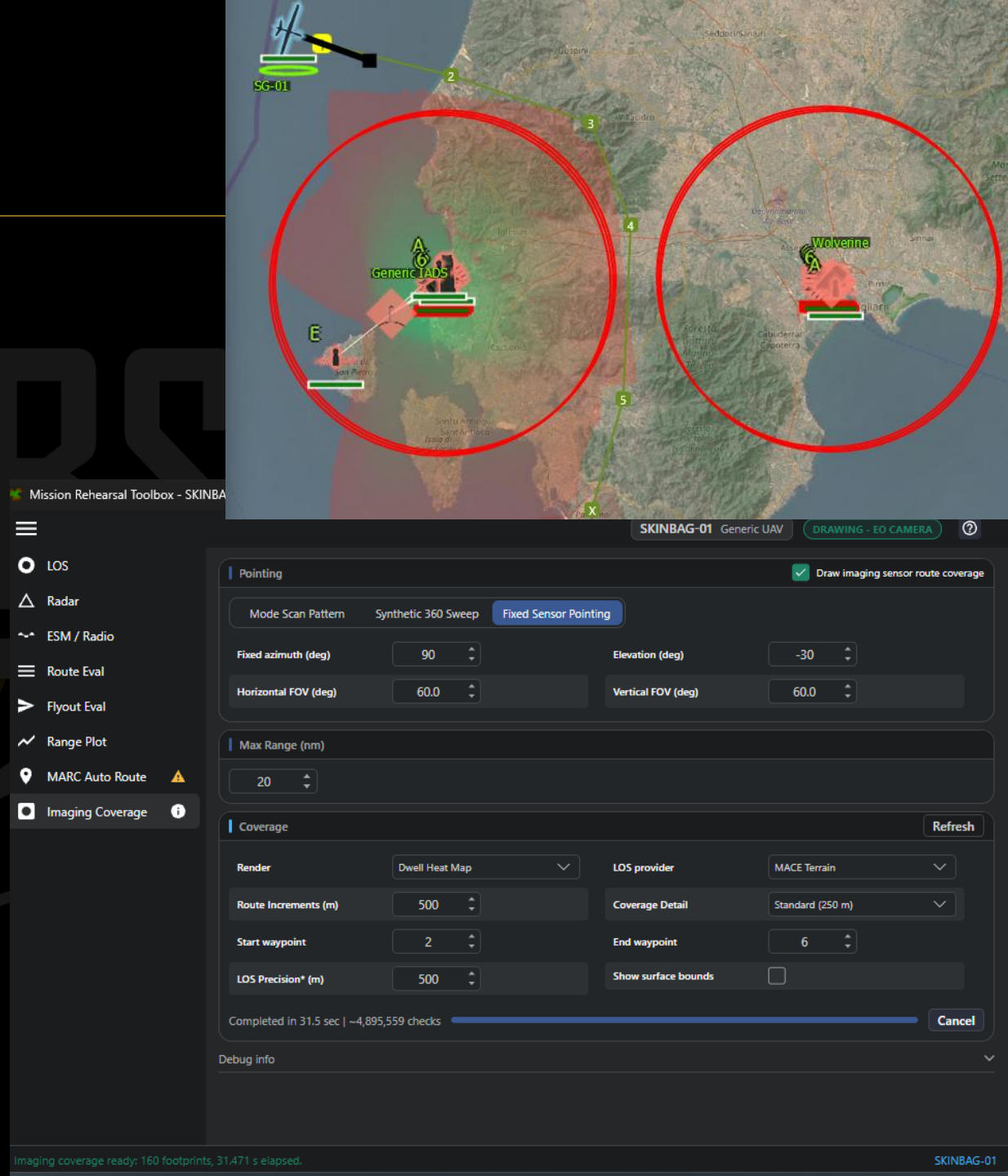
2026

- Left to right
- Searchable for all functions
- Drag and drop platforms into scripts
- Drag and drop scripts onto tool bars



Imaging Coverage Tool

- Composite line of sight plot for sensors – for ISTAR planning:
  - What will I see on this route?
  - Fixed FOV – Azimuth & Elevation
  - Based on sensor
  - Or Synthetic 360 sweep



Mission Planning Analysis and Rehearsal (MPAR)

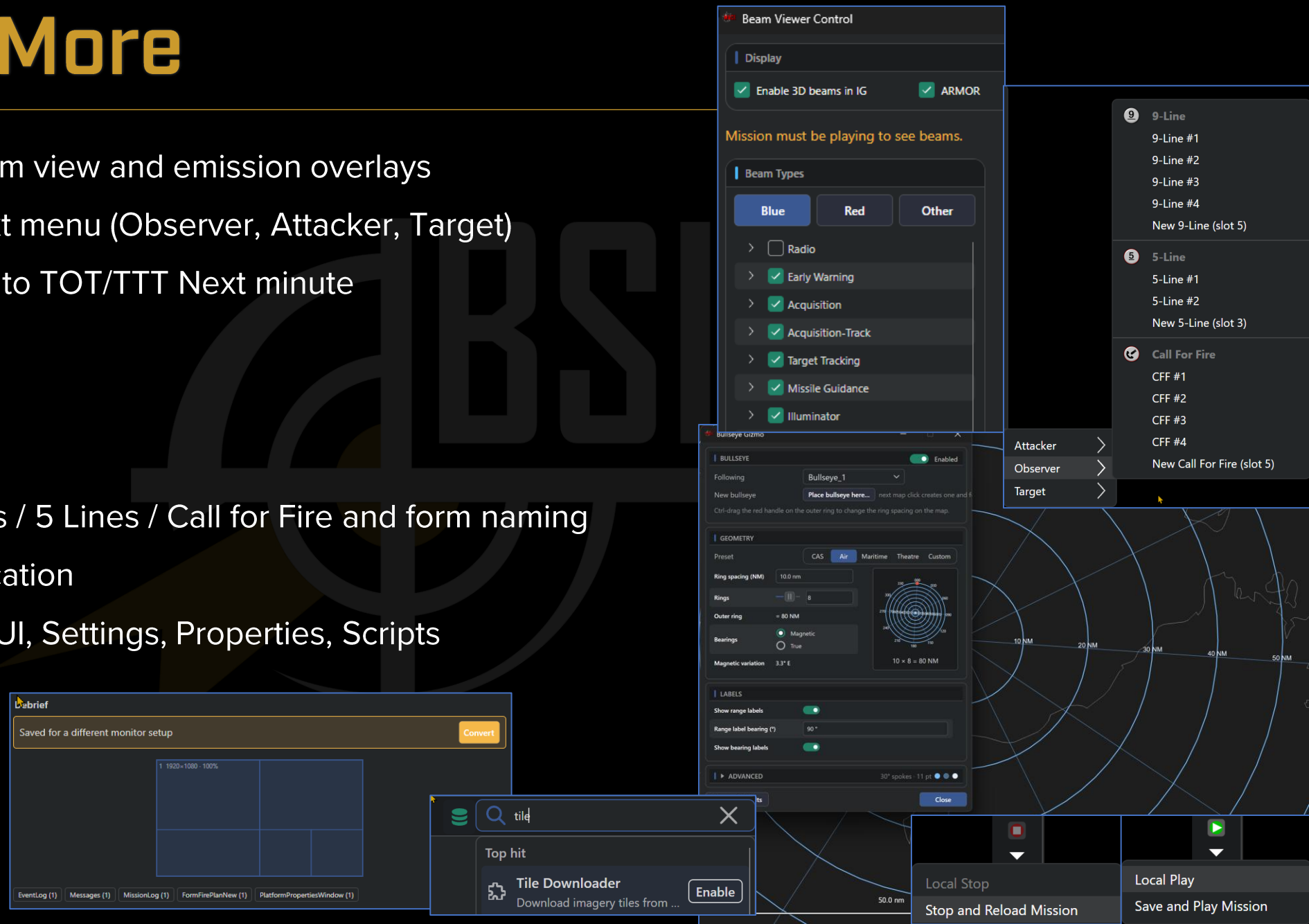
RAPID FIRES INTEGRATION IN CONGESTED AIRSPACE

Mission Planning Analysis and Rehearsal (MPAR)

UAS PLANNING – MAINTAIN LINK – MINIMISE EXPOSURE – AUTONOMY HANDOVER – ISTAR COVERAGE

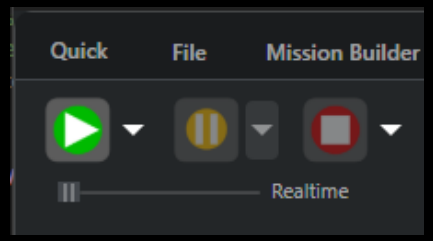
And Much More

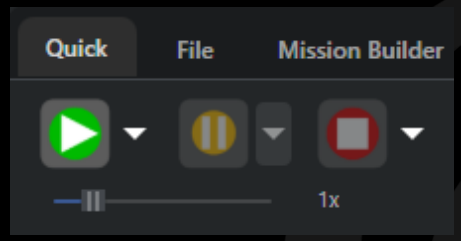
- Improved filtering on beam view and emission overlays
- Joint Fires – From context menu (Observer, Attacker, Target)
- Form Based Attacks – Auto TOT/TTT Next minute
- Bullseye Overlay
- Save-Play, Stop-Reload
- Window Layout Manager
- MACE-EW: 4 to 16 9-Lines / 5 Lines / Call for Fire and form naming
- Aggregate: Auto Classification
- Context Based Search – UI, Settings, Properties, Scripts



Under The Hood: Improved faster than Realtime processing

- Different execution sequences for Realtime and Faster-than-Realtime (1x clock multiplier and faster)
- Each phase completes before the next phase starts. Parallel work can remain inside a phase





Concern	MACE 2025	MACE 2026
Motion domains	Independent lanes could overlap.	Domains run in a defined sequence.
Entity work	Each lane used parallel work.	Applicable phases can use parallel work.
Completion	Flags and polling formed a coarse barrier.	Each phase completes before the next.
Mission clock	Separate wall-time path.	Advances after processing and cleanup.
Time step	Load could increase the wall-derived step.	Each completed update uses a fixed step.
Overload	Larger steps could preserve apparent speed.	Fixed steps remain and achieved speed falls.

Under The Hood: Improved faster than Realtime processing

- A selected playback rate is a request. The complete workload determines achieved speed

$$\text{Clock Multiplier} = \frac{\text{simulated time elapsed}}{\text{wall time elapsed}}$$

A result of 8 means eight simulated seconds per wall second

Workload limits

- Large mission entity counts
- Equipment and signal processing
- Collision processing
- Long synchronous plug-in callbacks
- Network or device waits
- External systems that cannot accelerate
- If you want to run faster, refer to performance optimization section of the MACE User's Manual

Under The Hood: Improved faster than Realtime processing

Determinism is a measured property of repeated results. It is not a selectable operating mode.

The new runtime improves repeatability

- Stable phase order
- Fixed simulation-time step

Repeatability still depends on inputs

- Controlled external input
- Fixed random seeds
- Stable plug-in processing order

Use the phrase “more deterministic scheduling.” Qualify every replay claim with test evidence.

Roadmap

- BLADE: Release
- MRT: Survivable UAS Planning Tab
- SGE: Over the horizon radar modelling
- SGE: Over the horizon GOLD – C2 protocol
- MRT: Speedup
- Native HLA: RPR2, NETN
- Merlin: Content creation (Platforms & Equipment)
- ATO Export: Improvements

BATTLESPACE SIMULATIONS

Don't settle for only part of the battlespace

For help contact: support@bssim.com

www.linkedin.com/company/battlespace-simulations-inc-/

www.youtube.com/BattlespaceSims