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MACE 2017 R1

What's New?

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MACE 2017 R1 – What's New

Hello everyone! Today we are happy to announce that MACE 2017R1 is now available for download as an official release. Before we get into our summary of the new features, I would once again like to extend a sincere “thank you” to everyone who helps us continuously improve MACE. It is extremely fulfilling for us to see people using our software. If you are a MACE user and find yourself saying “if only these guys would add such and such a feature, it would make my life so much easier/help meet additional training objectives” – then please tell us! Many of the best ideas for MACE improvements come from you, our existing customers.

User Interface Improvements

In 2017R1, we implemented several major user interface improvements, primarily designed to simplify and improve entity control while minimizing the number of ‘clicks’. The two main UI improvements are the new ‘Platform Tape’ overlay and the new ‘Platform Actions’ menu.

New Platform Tape Overlay

The Platform Tape overlay provides a much simpler way to control entity heading, speed and altitude. There are three tapes; the Heading Tape will appear as a circle around the selected platform, the Speed Tape will be along the left border, and the Altitude Tape along the right (see figure below).

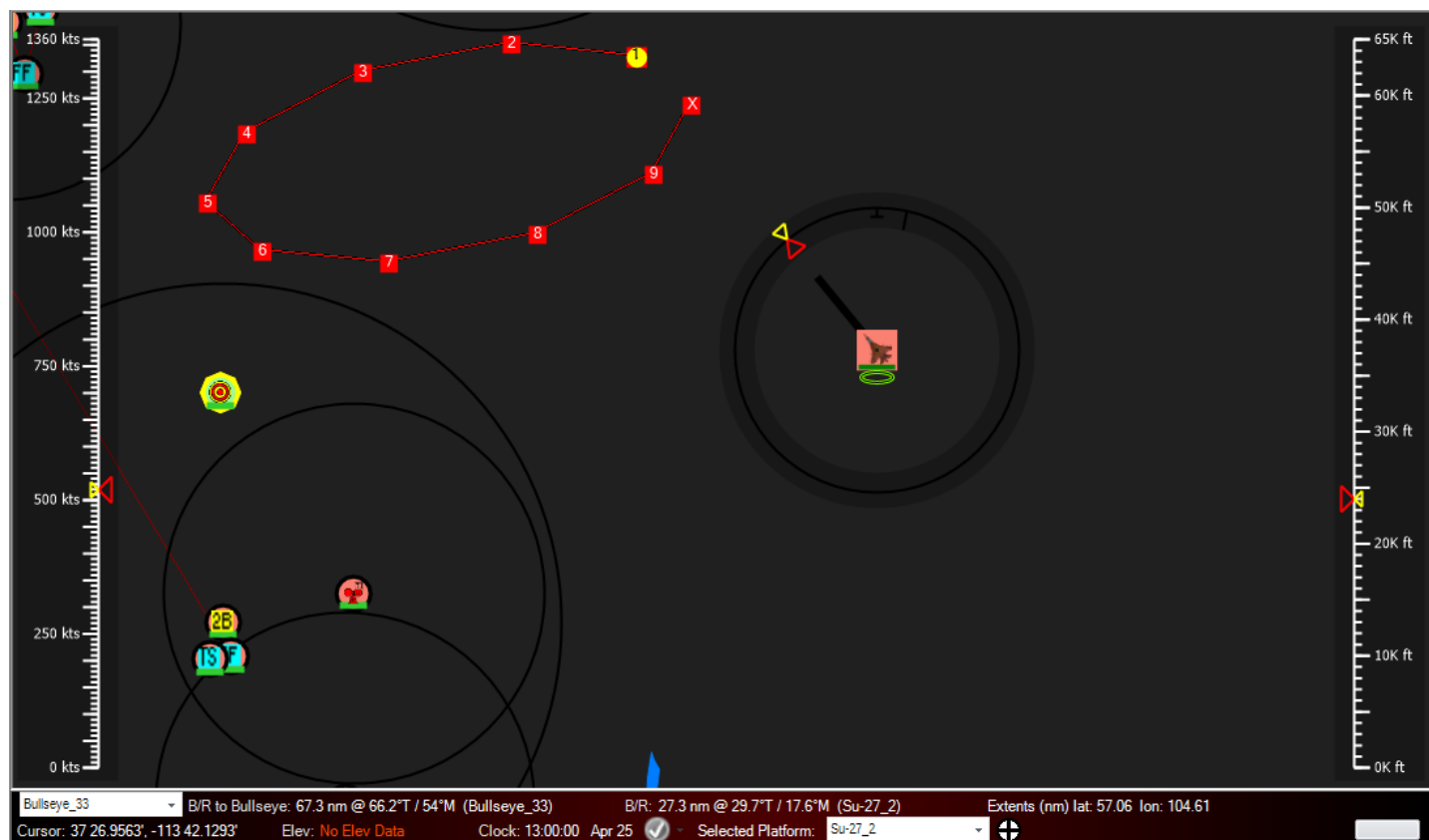


Figure 1: HUD-Style 'Platform Tapes' Overlay (Heading, Speed and Altitude)

Each of these serves both as a means to quickly see and optionally, to **set** either the selected platform's *current* heading/speed/altitude or *target* heading/speed/altitude.



For each tape, there are two arrows, a yellow arrow which indicates the selected platform's *current* heading/speed/altitude, and a red arrow which indicates the selected platform's *target* heading/speed/altitude. For a non-maneuvering platform, these should be the same, as shown in the figure above.

As mentioned above, *you can click and drag (while holding the ALT key) either of these arrows* to command the selected platform(s) to change either their current (yellow) or target (red) heading/speed/altitude. For example, in the screenshot below, I've dragged the red target heading arrow to 120 degrees magnetic (note that the line color of the circle changes to match the color of your heading bar, in this case white to indicate the platform is now in a delta mode):

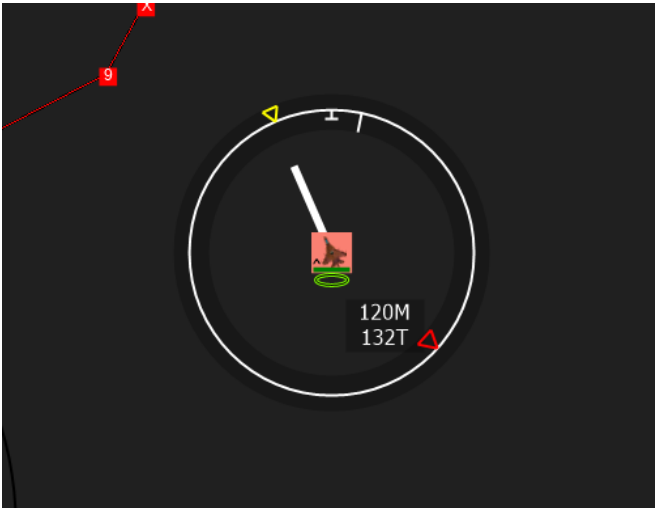


Figure 2: Drag Red Arrow to Set Current Heading/Speed/Altitude

After releasing the mouse button, this will issue the command to the selected platform(s) to change their target heading to 120 degrees. If your MACE mission is running, you should see the yellow arrow (current heading) start to move towards the red (target heading) arrow as the platform maneuvers towards its target heading, as shown in the figure below:

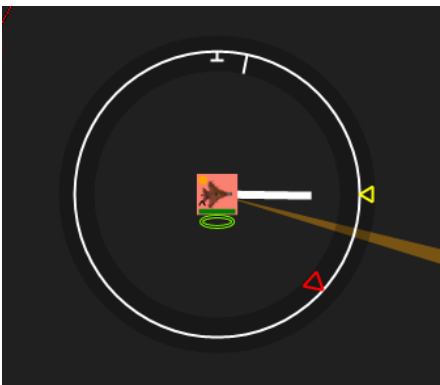


Figure 3: Current Heading Indicator

Note that you can also drag the yellow arrow, which will instantly change your heading (or speed or altitude) regardless of whether the mission is running or not.



Save/Restore Visible Extents

Ever finding yourself zooming way in and then back out in a mission with both standoff air platforms and lots of ground entities? Now you can quickly save (and restore) up to 4 different visible map extents; these are mission-specific and will save and load with your mission. To store a visible extent, hold CTRL and press F5, F6, F7 or F8. To retrieve (zoom to) a visible extent, press ALT and F5-F8 (whichever one corresponds to the extent you wish to zoom to).

Action Templates and the Action Menu

As the full potential of buttonized scripting became more apparent, we realized we needed to create a framework for users to organize their buttonized scripts and quickly activate the desired behavior(s) at runtime. Thus we've introduced Action Templates and the Action Menu in 2017R1.

The Action Menu is accessed by right-clicking on a platform to bring up a context menu. In the figure below, I've right-clicked on an entity (human lifeform) and navigated to the Actions menu; the actions shown in this case are those I've placed in an Action Template called 'Pattern of Life':

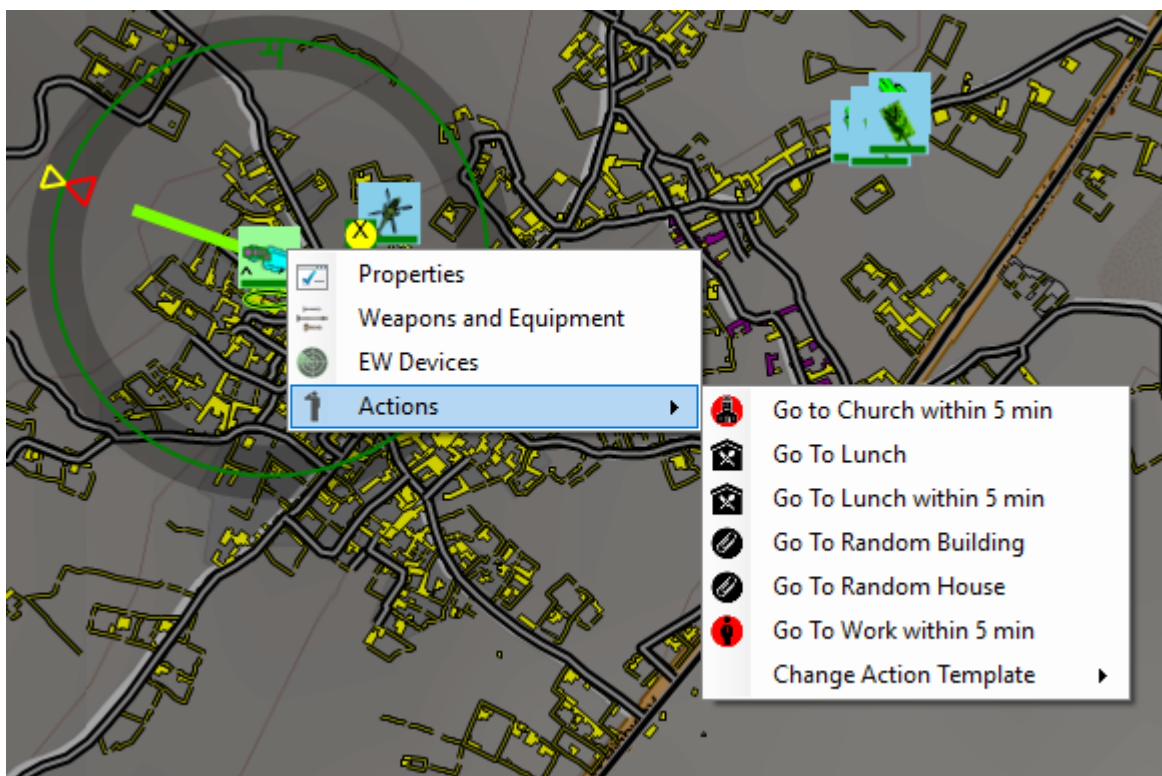


Figure 4: Pattern of Life Action Template

To illustrate the utility of the Action Templates, here's an F-16 entity in that same MACE mission, with actions organized into a template for air-to-air maneuvers:

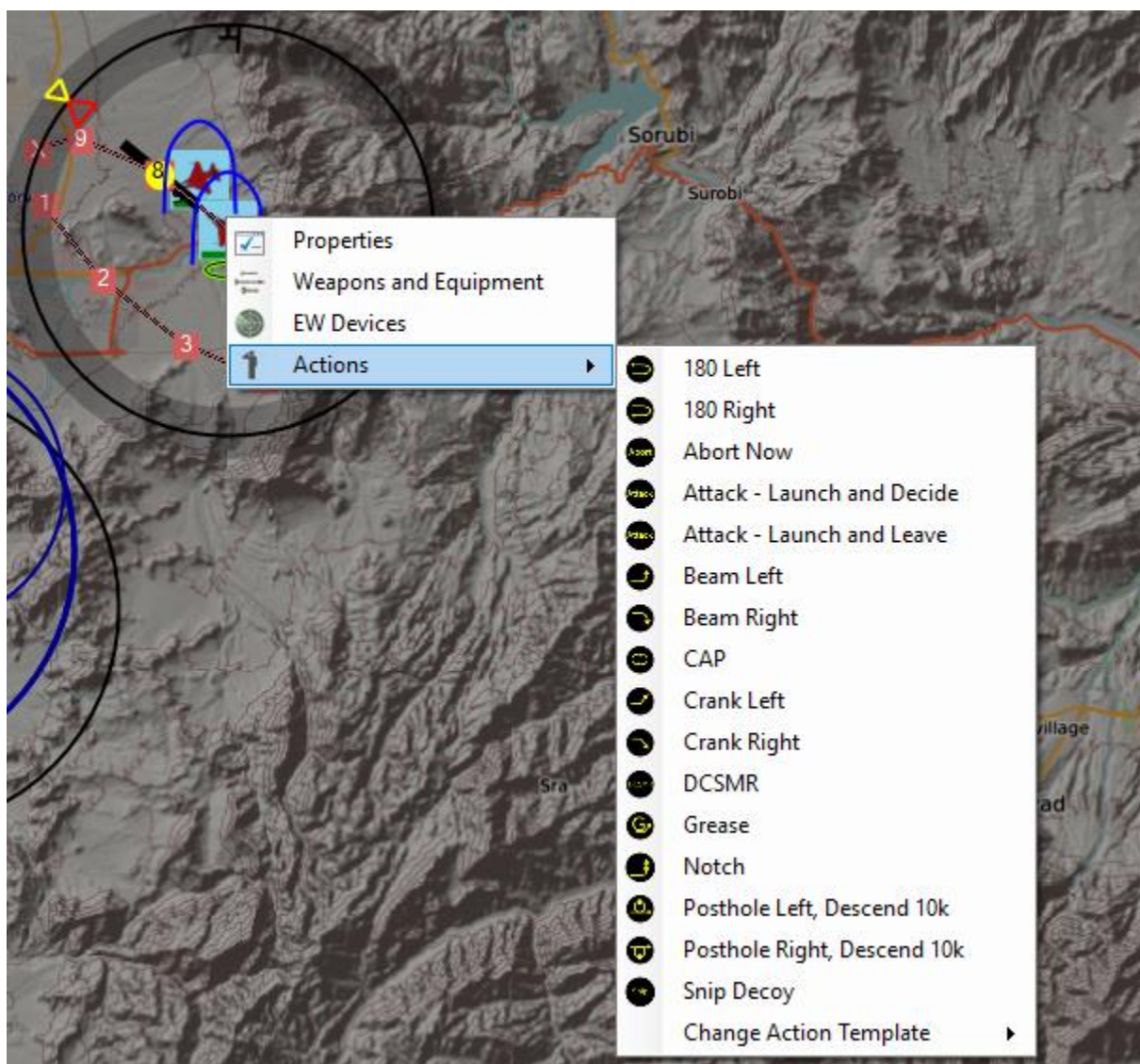


Figure 5: Air-to-Air Action Template

You can also assign a buttonized script as a platform's default reaction posture; this is a great way to have an entity enter a building or take cover in one or more definable locations when a nearby detonation occurs.

Simulation Improvements

Datalink Improvements

MACE 2017R1 contains several significant improvements related to the simulation of datalinks. Specifically, you can now simulate datalink Gateways in MACE (SADL, Link16, SATCOM, etc) and can manually create J3 tracks. You can also change the data being passed in your J3 messages – for example, to lower track quality or change the team identifier. In addition, the J12.6 (Target Sorting) message is now supported.

Improvements to IR Physics

This release includes a major upgrade to how infrared is simulated within MACE. This applies to air-to-air and air-to-ground IR seekers and IR warning receivers. Please see this video for more information on this improvement:

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<https://www.youtube.com/watch?v=jbb9U8DZATY> Note that while the 'weapon view' plugin shown in the video is only available in MACE-EW, the underlying IR physics are the same in both MACE and MACE-EW.

The figure below shows the 'EW devices' on an F-16 in the Sample_Mission that ships with MACE. There are 3 different IR Signatures assigned to the F-16; the F-16's plume signature is shown in the figure below, and can be dynamically changed by changing the highlighted fields:

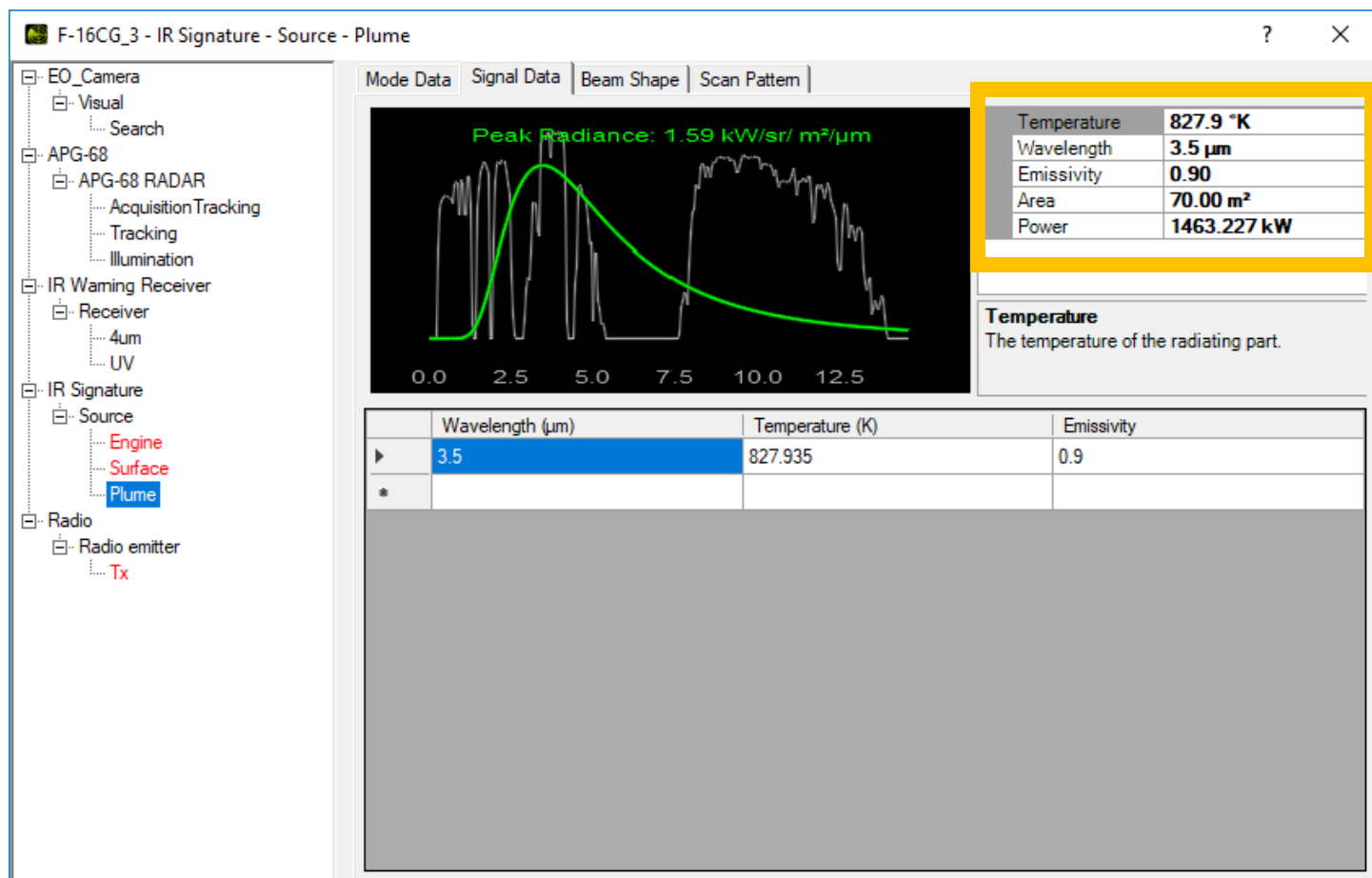


Figure 6: IR signatures and detectors accessed via Platform's EW Devices

Radar/Jamming Improvements

MACE can now simulate both stand-off and stand-in noise jamming against both the main-lobe and sidelobes: <https://www.youtube.com/watch?v=w8PMZEzI31Y>. Also, a radar will now automatically switch modes (if you have an alternate mode defined) if it detects that it is being jammed.

Improvements to Visual Detection

The visual detection model in MACE has been improved to support user-definable horizontal and vertical fields of view. For example, the 'visual canopy' can be assigned to aircraft and is an example of a visual detection pattern with limited horizontal and vertical fields of view:



Figure 7: Visual Detection - Canopy example

Pattern-of-Life Improvements

In the last release (MACE 2016R2), we introduced the ability to 'buttonize' your scripts. MACE 2017R1 includes some pre-made buttonized scripts for pattern-of-life behaviors, such as 'Go to Work within 5 minutes'. This script will tell the target platform(s) to proceed to a random platform in your mission whose 'Tag' property (which was added for this release) contains the word 'Office'. There are a few other variants of this behavior included as well, such as 'Go to Church', 'Go to Lunch' and 'Take Cover' (with the latter having a detonation trigger, rather than a time lapse trigger). In addition, you can also now pathfind around building footprints in our worldwide OSM database. Both your starting and ending locations can now be inside of a building – in other words, you can now pathfind out of a building and into another building, while walking around all buildings in between. EZ-traffic generation has also been improved to support multiple lanes and vehicles that detect and pass other vehicles in front of them.

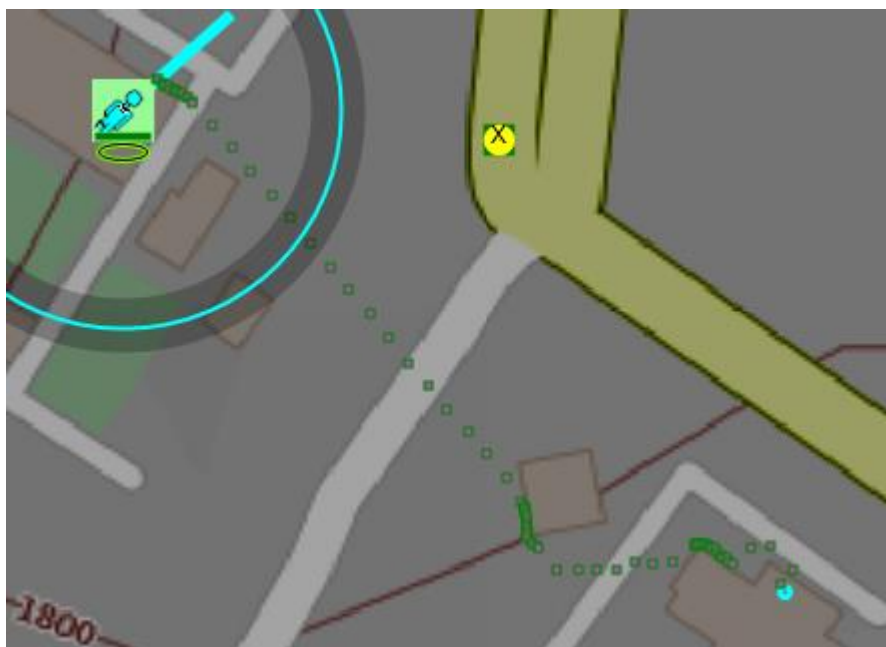


Figure 8: Pathfinding out of a building, into another building

Other Improvements

There are many other improvements in 2017R1 – too many to go into detail on all of them. Here's a quick list of additional improvements:

- New guidance types / further support for more network enabled weapons.
- Improvements to simulation of C3 networks (radio, datalink, etc)
- Major Scripting Improvements:
 - "Delay Until" script action.
 - Execute script from reaction posture.
 - "Check Triggers" Once option.
 - Map select for buttonized scripts.
- Added support for multiple flares types including Kinematic
- Set Mission Time based on computer's clock time.
- Selectable maneuvering states for aircraft.
 - Standard Rate
 - Energy Sustaining
 - Max Performance (Maintain Altitude)
 - Max Performance (Allow Altitude Drop)
- Support Air to Air TACAN.
- Ability for tanks to defensively deploy smoke when designated.
- Mouse over weapons to get info / remove in flight.

Get Your MACE!

As usual...you can get it here: http://downloads.bssim.com/MACE/Latest_Release/ (usr: JT@C pwd: @Irp0wer).



Note: Before installing this latest MACE, you should download and run the latest version of our pre-requisite installer. This will ensure you have the correct version of DirectX, Visual C++ runtime, and a few other required files. You can download the latest version of the prereqs from the parent folder, here: <http://downloads.bssim.com/MACE/> (same login credentials as above).

Thanks again everyone, and please let us know if you have any suggestions or encounter any issues with this new MACE.

Regards,

The BSI Team

PS... please stay tuned for more information about our upcoming MACE User's Group (MUG) meeting at IITSEC in Nov 2017 and another expanded MUG meeting at Hurlburt in 2018.