BATTLESPACE SIMULATIONS INC.

MACE R2 2015

What's New?

If you have questions or comments, please contact us at support@bssim.com**.**

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MACE R2 2015 – What's New

Hello everyone! Once again, a heartfelt "thank you" to all of you who help us continuously improve MACE. It is very fulfilling for us to see people using MACE in a variety of different ways to meet diverse training needs. 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.

Also, sincere thanks as well to all of our Beta testers, those power users that we know are great at finding bugs ☺. We've packed quite a bit of good stuff into this release, and we hope that you will find the new features valuable.

As usual, you can get the latest MACE at www.bssim.com/MACE/Latest_Release

MACE is now a 64-Bit Application

First and foremost, the most significant change to MACE is that it is now a 64-bit application. This has many benefits for you, our end users. First, it means that MACE has access to a much larger amount of RAM than it did when it was a 32-bit app. 32-bit apps can consume no more than 4GB of RAM, while 64-bit apps have access to orders of magnitude more. For Windows 7 Professional, MACE can address up to 192GB of RAM.   For Windows 8 Professional, it is 512GB (for specifics, please see this article). Note that for most use cases, you will not need to address this much RAM, and you likely will not have this much installed. However, we do recommend 16GB of RAM in any computer running MACE now that it is 64-bit, and 32GB of RAM if you anticipate simulating very large battlespaces (tens of thousands of square miles) with 30m or better elevation data sources (DTED2 or similar) or for pathfinding in large urban areas.

Note 1: from this point on, MACE will only be offered as a 64-bit application; MACE 2015 R1 was our last 32-bit release. If you are still running on a 32-bit version of windows, it is time to upgrade!

Note 2: As a 64-bit application, MACE will now be installed to *C:\Program Files\Battlespace Simulations\MACE* by default, as opposed to the old location under *C:\Program Files (x86)\Battlespace Simulations\MACE.*

New Fire Plan Interface

We are very excited to introduce a Fire Plan interface in MACE 2015 R2. The MACE Fire Plan Form can be used to coordinate the following:

- up to 4 different Call for Fire forms
  o each of which can be used to task a full ARTY battery
- up to 4 different 9-lines
  o each of which can task up to 4 different aircraft, with each of those aircraft supporting an unlimited number of DMPIs (with each DMPI supporting a separate laser PRF code)
- 2 different 5-line forms
  o each of which can task 2 rotary-wind assets, or AC-130 gunships

Using the Fire Plan, all of these can easily be scheduled around the user-selectable 'H-Hour' using simple slider bars, as shown below. Each can also be executed at any time by clicking the 'Execute' button:
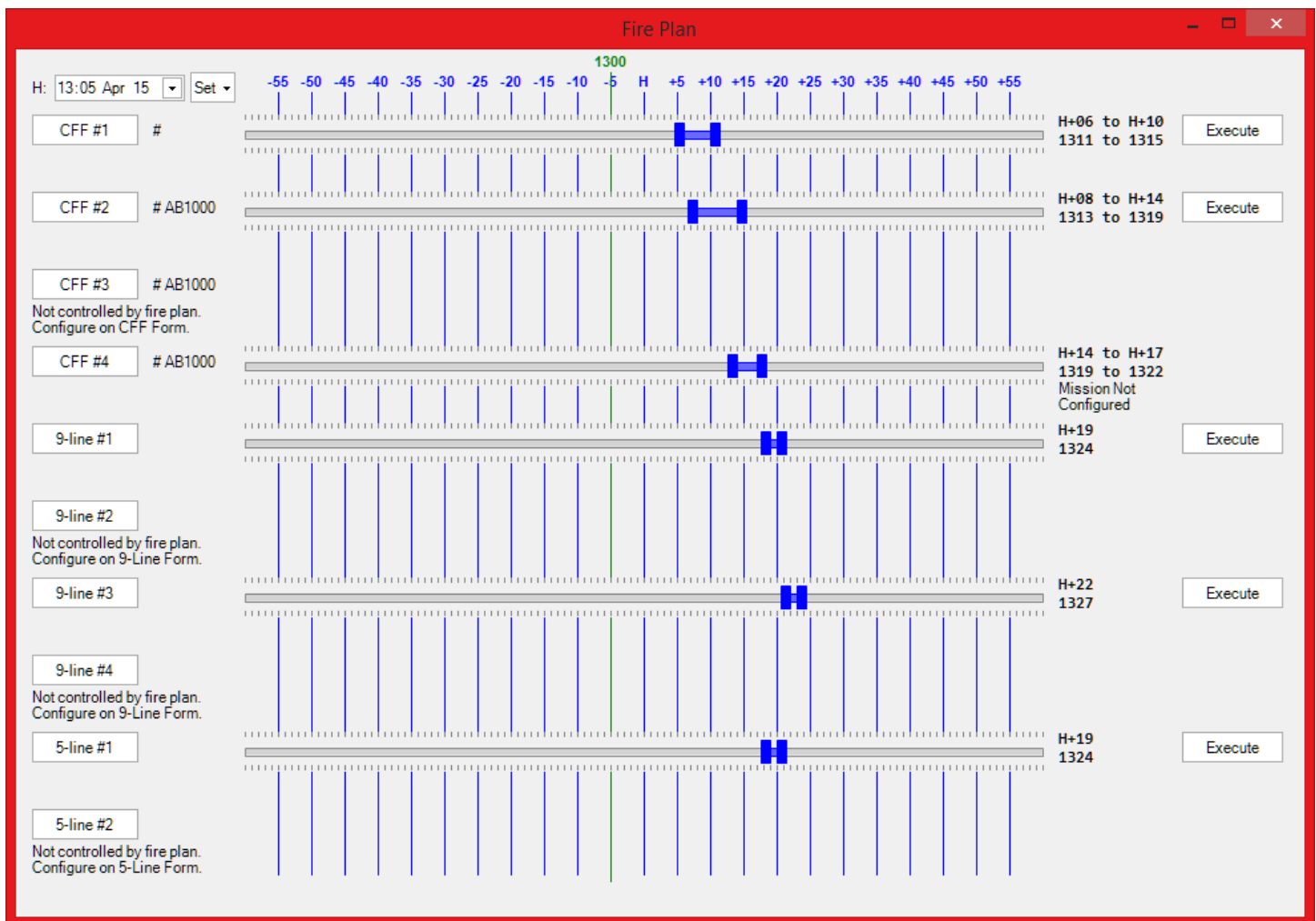
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Figure 1: New Fire Plan Interface in MACE

CIGI Support

We are very happy to announce that MACE now has native support for CIGI v. 3.3. CIGI viewports can be defined on the new CIGI tab on the MACE System Settings form (please see the MACE R2 2015 User's Manual for more about MACE's CIGI support).

Support for new VBS-IG

With CIGI support we are pleased to also announce support for Bohemia Interactive's VBG-IG.   BSI and Bohemia have worked very closely over the last several months to ensure MACE and the VBS-IG work together seamlessly.

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Figure 2: MACE A-10/HUD shown with VBS IG

Figure 3: MACE Soldier/Tank shown in VBS IG

Pattern Of Life Improvements

We've also improved pathfinding and the 'random walk' feature. You can now tag entities themselves as valid 'random walk' destinations. For example, you might add a street vendor and tag his cart as a valid random walk destination. Entities placed into 'random walk' mode will occasionally walk over to the vendor and remain there for a minute or two (some randomization is applied). Also, humans and animals in 'random walk' will also now vary their speeds slightly, so that not everyone is walking at exactly the same speed.
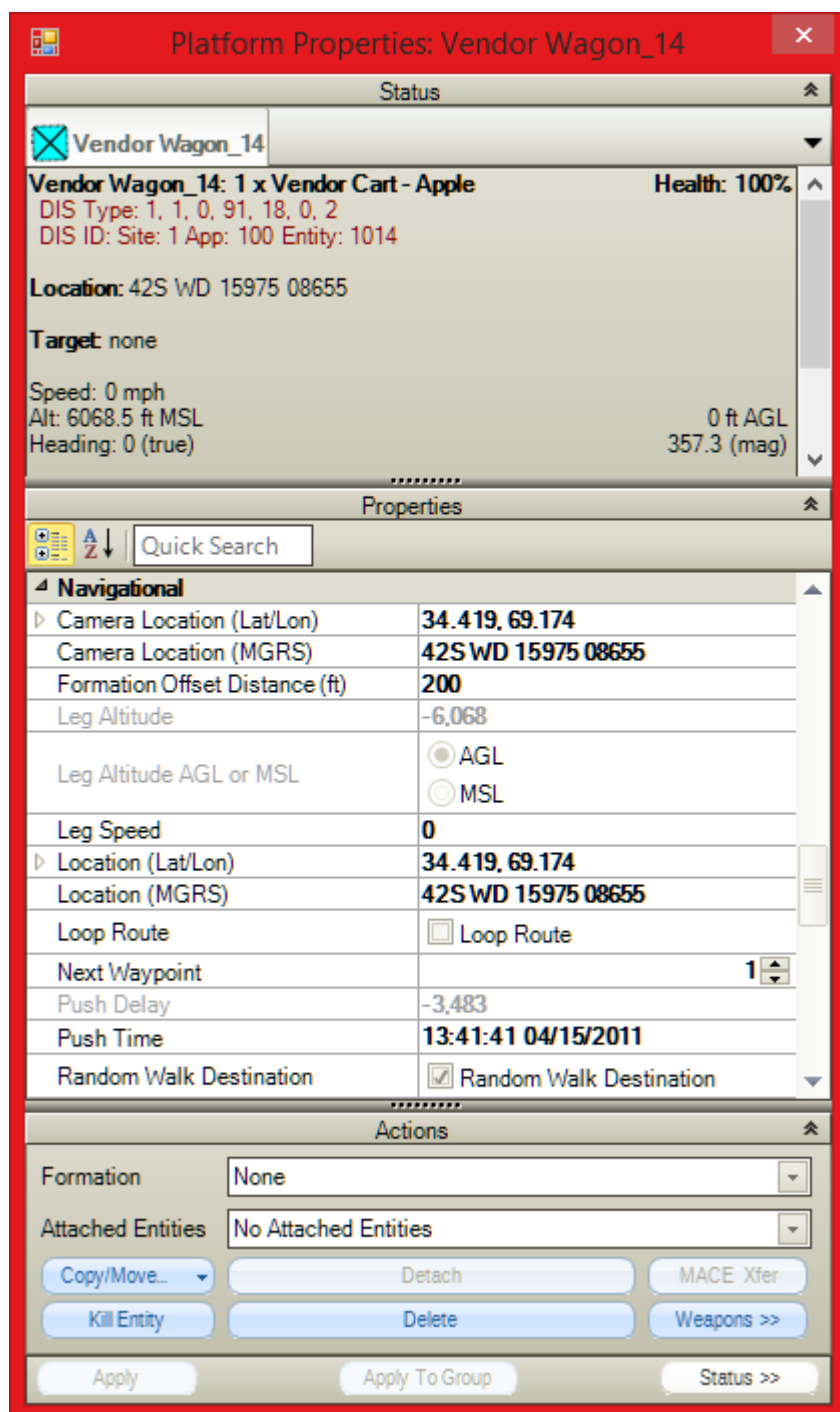

Figure 4: Set Entities as Random Walk Destinations

Enhanced Interactions & Attachment Points

In MACE R2 2015 and with MetaVR's VRSG 5.10 image generator, you can now define attachment points for buildings as well as for vehicles. And now, you can also shoot weapons (or use equipment, such as your laser range finder/laser designator) from these attachment points.

Figure 5: Soldier attached to Building Balcony (currently only works with MetaVR's VRSG IG, shown here)
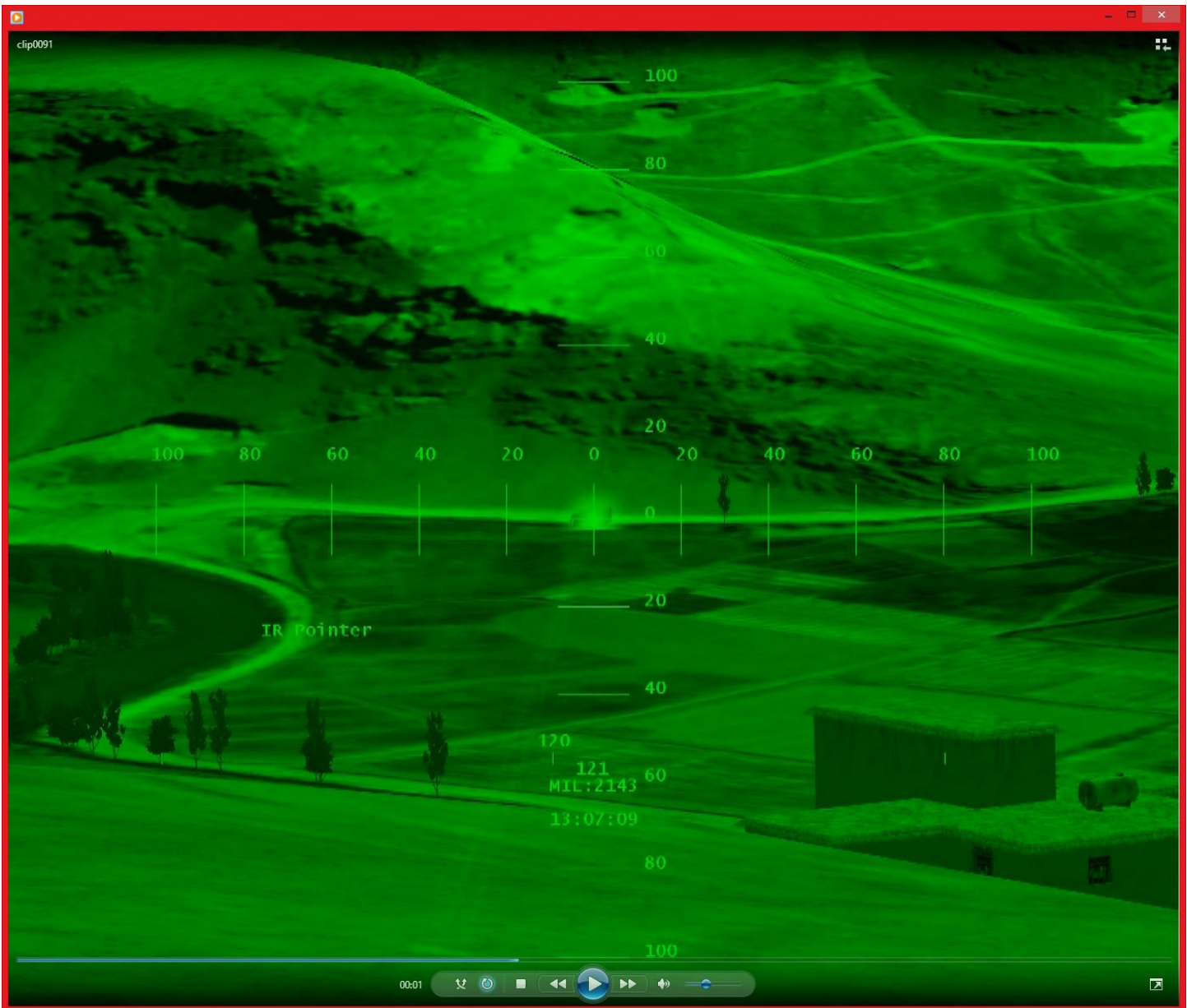
Figure 6: Sparkling a Truck from a Balcony (currently only works with MetaVR's VRSG IG, shown here)

User Interface Changes

Add and Edit SHAPE files from MACE

You can how add and edit SHAPE files directly from MACE. These tools have been added to the Mission Controls Tab, in a new group called 'Shape Tools'. These features are documented in the new MACE R2 User's Manual and demonstrated in this YouTube video: http://youtu.be/LhKEKlOx9Zk
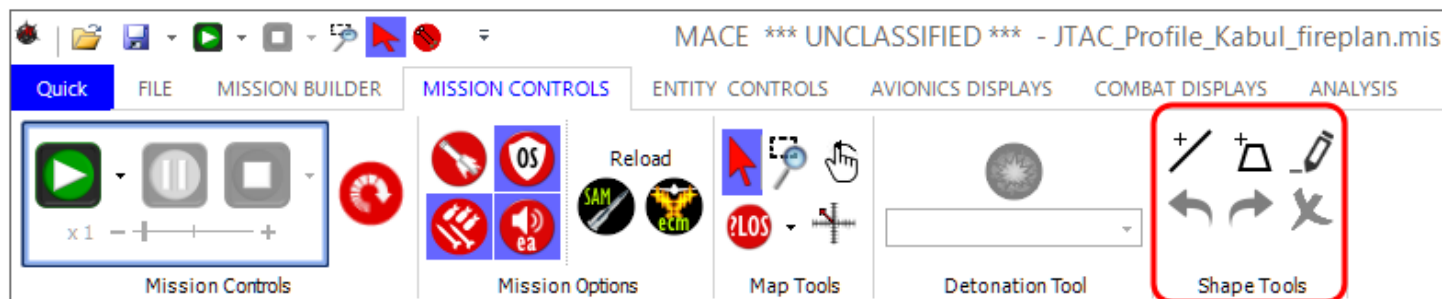
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Figure 7: Shape Tools

Group Selection and Group Drag

You can now select all entities in your mission of the same type by holding SHIFT and double-clicking on one of the entities. Also, once a group of entities are selected, you can hold CTRL and move your mouse to move all the selected entities at once (no need to use the Platform Property grid anymore for this, unless you would also like to move the waypoints at the same time).

Loop Route Feature

We've added (as a result of popular user request ☺) a 'loop route' option on the Platform Properties grid. This will be checked by default for all air and surface platforms, and unchecked for all ground platforms.   'Loop Route' is the same behavior you're used to; platforms will proceed back to the beginning of their route upon reaching the end (unless you'd manually added a 'stop' action). If de-selected, the platform will stop when reaching the end of its route.

Append Route Feature

You can also now import a MACE route but instead of creating a new route, you can append the imported route to the route of the selected entity. To do this, just select 'Append MACE Route(s)(.xml)' from the Import drop-down button on your File menu and the route will be appended to the route of your currently selected MACE platform:
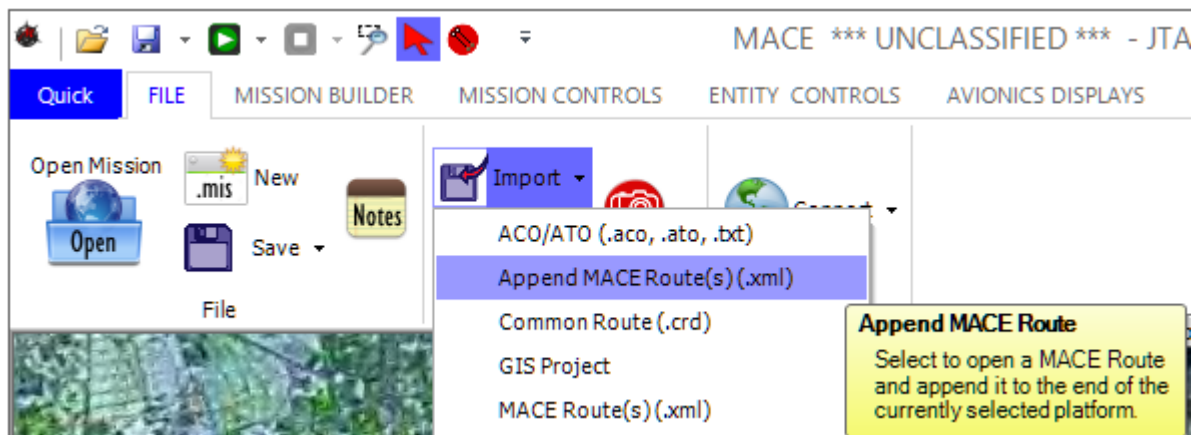

Figure 8: Append MACE Route feature

Tactical Data Link Improvements

We've also improved our implementation of Link 16 and SADL over DIS. Each platform now has its own start and end track numbers, meaning that you can simulate multiple C2 platforms in a single MACE mission, each with their own range of track numbers. Also, the NPG# can now be assigned on a per-message basis (see screenshot below):

Figure 9: Improvements to Link 16/SADL over DIS

ELINT Pod

MACE now has an 'ELINT Pod' that can be added to any aircraft, and will enable generation of J3.5 messages against radiating ground entities. The user can now effectively add ELINT Pods to platforms as needed and gives great flexibility to the user if a platform gains ELINT capabilities in the future. In the example below, an ELINT pod was added to an F-22 and it will now generate J3.5 messages if it detects radiating ground entities.

Figure 10: ELINT Pod enables generation of J3.5 messages for signals received from radiating ground platforms

Support for multiple AWACS/C2 platforms in one MACE mission

The picture below illustrates a MACE mission with multiple C2 platforms, all capable of generating tracks over DIS, within their assigned range of track numbers. In this case, we have two AWACS and two JSTARS. Tracks are built dynamically, depending on distance, LOS, if the track has aged out, etc. If one C2 platform detects another is already issuing a J2/J3 for a particular track, it will not re-issue it.
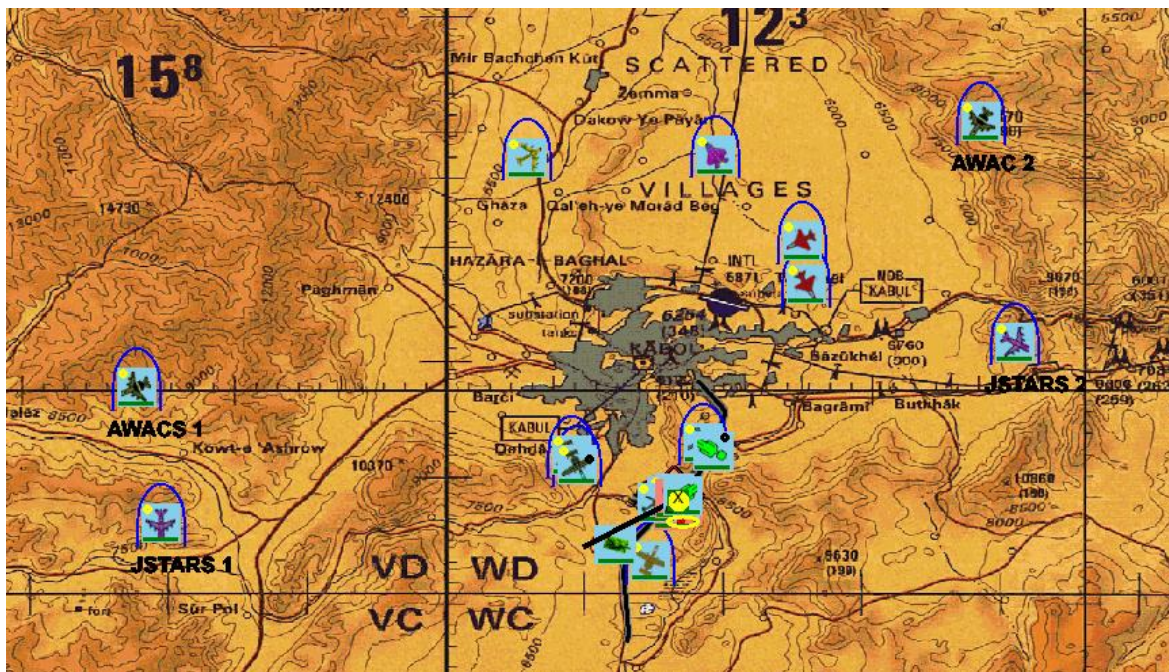

Figure 11: Multiple C2 Platforms generating J2/J3 messages in the same MACE mission

Also, if an entity begins issuing its own J2, any C2 platform issuing a J3 will suspend the J3 for that entity. In the figure below, the F-16's track is being generated from the AWACS since the F-16's Link-16 J2 (PPLI) isn't activated:
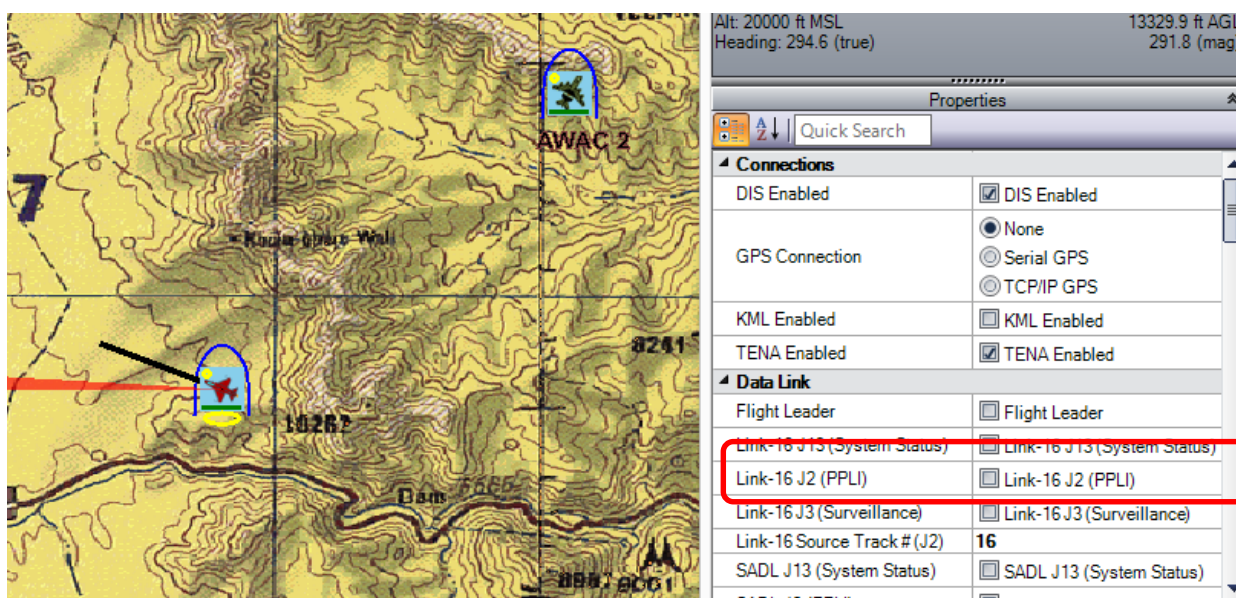

Figure 12: J3s will be generated on tracked entities not issuing their own J2s

This figure now shows the F-16 track being self-generated by activating its Link-16 J2 (PPLI). You'll notice the AWACS generated track starts trailing the F-16 and will eventually disappear.
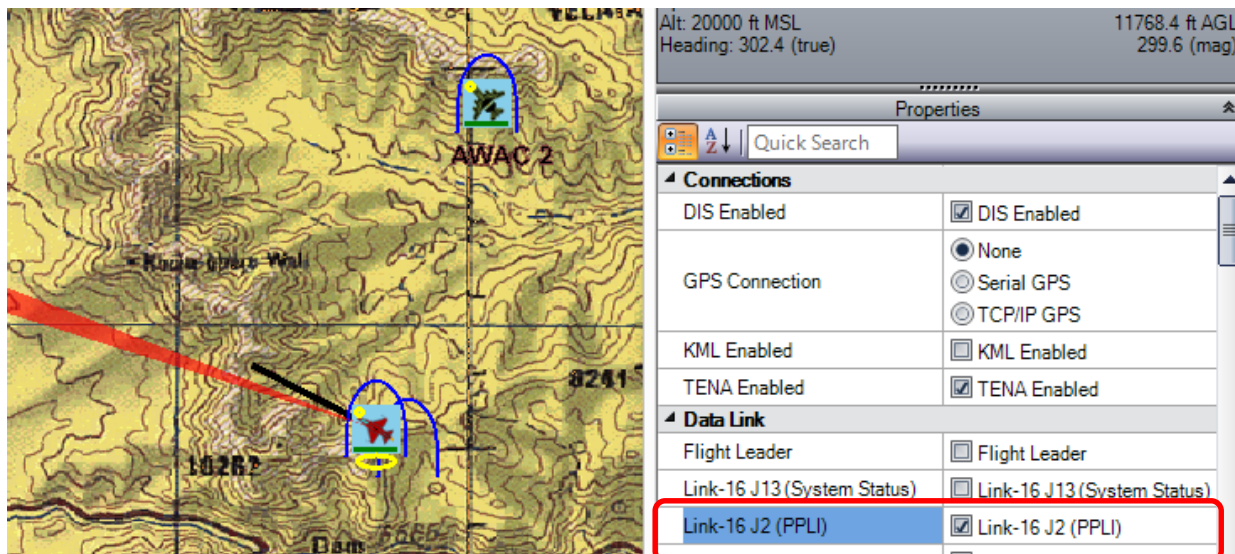

Figure 13: J3 will 'age out' after platform begins sending its own J2

What's coming next...

Our next release will include one of the most significant improvements we've made to MACE since it was first introduced. We've developed a way to describe electronically scanned 5th generation radar systems over DIS, predictively, which we hope to submit to the CAF DMO working group as a potential standard in the future. Our goal is to have this integrated into MACE in our next release (either very late in 2015 or more likely, in early 2016).

We will be able to simulate multiple AESA/PESA radar systems on a single platform, each with a separate scan. The ability to define pulse descriptor words is also a feature on our roadmap for next year.

Along with this will come an enhanced GUI for building emitters, including beam, pulse and scan patterns, that will be significantly easier and more user-friendly than the current tools in the MOCT.

For a sneak peek... please see this video: https://www.youtube.com/watch?v=TXRlYjEXnHQ

Note the beam visualization shown in the video is a feature we've developed that works exclusively with MetaVR's VRSG Image generator. It will have utility for both real-time simulation and for EW-related after-action review and debrief.

Once again, hearfelt thanks to all of you for choosing MACE over your many other CGF/SAF choices ☺

Regards,

The BSI Team