

AIMS-ISR® at the Heart of New UK NPAS Mission System



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Scott Gallagher - UK National Police Air Service

The UK's National Police Air Service (NPAS) commenced a project in 2014 to upgrade the mission system of seven EC135 T2 helicopters.

NPAS is one of the highest profile and leading police air support services in the world. Consequently the new mission system needed to satisfy a range of demanding requirements many of which had not been implemented on any other police aircraft before. CarteNav's AIMS-ISR® was selected as the mission system software for this cutting-edge solution.

The software integrates with not only the EO/IR camera but other sensors too, including a searchlight and RF tracker. AIMS-ISR® ingests all of these sensor outputs and geo-spatially overlays them onto the moving map as well as the live video. Providing augmented reality functionality by overlaying tactical data and street address information on the video presents information to the operator in an intuitive and efficient manner. This capability, as well as being able to interact with the video window to control the camera are key elements of the AIMS-ISR® Tactical Vision feature set. In addition, Sentient Vision's Kestrel Moving Target Indication software product is provided in a fully integrated manner.

The AIMS-ISR® user interface is flexible and incorporates multiple filter options ensuring that the display remains de-cluttered. Although only a subset of all available data may be being displayed, it is all recorded into the mission file and available for review and analysis post-mission.

At the beginning of the project, CarteNav flew with NPAS on several occasions to understand firsthand how NPAS operate. It was immediately apparent that this is an extraordinary high-tempo operation – the crew can be airborne within a couple of minutes of a new task being received. It was therefore paramount to enhance operator performance. To ensure this, AIMS-ISR® has been streamlined for touchscreen operation with features such as:

- One screen press to take a video snapshot
- Double touch anywhere in the video to slew the camera to that position
- ‘Pinch And Zoom’ for convenient map zooming
- Efficient address and POI search

As NPAS discovered just how powerful and flexible AIMS-ISR® is, the occasional *‘it would be great if we could do ...’* requests began. CarteNav is continually developing and progressing the AIMS-ISR® family of products much of which is influenced by operator feedback. CarteNav was pleased to take onboard these NPAS requests implementing a number of them for the first helicopter delivery, including:

- NPAS specific tactical aids, that support existing CONOPS used to coordinate activities between different police units, that can be overlaid on a geographic location such as a target building on both the map and in the video.
- Visual and audible alert reminding the operator to commence video

recording at a predetermined time from being on the scene

- Enhancements to the collection and presentation of RF signal direction and strength at each aircraft position. This is saved and recalled if a tracker cannot be engaged on detection due to the priority of the current task

CarteNav's commitment to delivering a solution tailored to the needs of the operator is reflected in the following quote from NPAS's Scott Gallagher:

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Looking ahead, there are opportunities to further exploit the networking capability of AIMS-ISR®. Each EC135 already has a front and rear Tactical Flight Officer with their own AIMS-ISR® license. These are networked so that when one operator, for example, creates a reference mark this is stored on the shared database and visible to all other operators on the network. The

network can be extended to the ground where AIMS-ISR® can interface with the existing NPAS IT infrastructure, and can be auto-populated with tasks generated by NPAS HQ. Similarly, reports and performance management data can be automatically loaded into the existing ground systems post-mission, all of which saves valuable time and supports the rapid response time NPAS achieves.

The first upgraded helicopter is due to return to service in summer 2015, with a phased delivery completing in 2017.



AIMS-ISR® on one of the 17" monitors installed for the rear NPAS operator.

