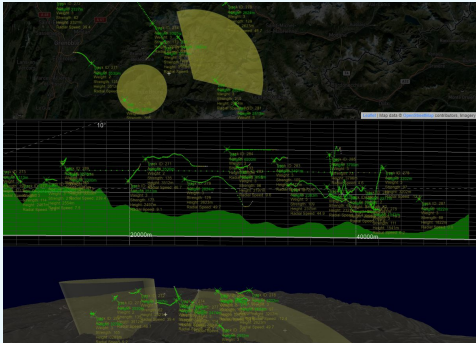


SPx Tracker-3D



Features:

- Primary/IFF Radar Tracker
- 3D radars and E-scan radars
- Automatic track initiation
- Fully configurable through parameters
- Area-dependent parameter values
- Track-plot association
- Kalman filter-based tracking
- Terrain visibility processing
- Plot input in ASTERIX, SPx or proprietary radar formats
- Plot input recording
- Track output in ASTERIX CAT-48
- Web-based configuration GUI:
 - Plot display
 - Track display
 - Terrain display
 - Range-height indicator
 - 3D visualisation
 - Map display
- Remote API for control, configuration and reports
- Optional external fusion (with SPx Fusion Server)
- Optional external plot extractor (with SPx Server)
- Configurable target dynamics
- Up to 4000 targets
- Linux and Windows support

SPx Tracker-3D is a software-based radar tracker for applications of 3D tracking and tracking from electronically scanned (non rotating) radars. The software receives plot detections from the radar sensor to create and maintain target tracks, which can then be output in ASTERIX format for external display or fusion processing.

SPx Tracker-3D complements Cambridge Pixel's SPx Server, which is focused on target tracking for conventional rotating radars.

Input Plots

The inputs to SPx Tracker-3D are plot detections. A plot detection is a measurement, typically characterised with a position, size and statistics derived from the radar. These plots may be generated directly from processing embedded in the radar, or may be provided by an external plot extractor (for example SPx Server) that converts radar video into plots. Plots may be input in SPx, ASTERIX or one of a number of proprietary formats. The modular construction of the software makes it easy to add new input formats as a custom extension.

Track Processing

The processing inside SPx Tracker-3D seeks to associate new plots with existing tracks, so that track positions can be updated using a Kalman filter. Where new plots cannot be associated with existing tracks they become candidates for new tracks. After a configurable integration period related to a build-up of confidence in a provisional track, a track may be promoted to a full track. This process needs to balance the desire for rapid acquisition of a track with the need to minimise false alarms.

Parameter Configuration

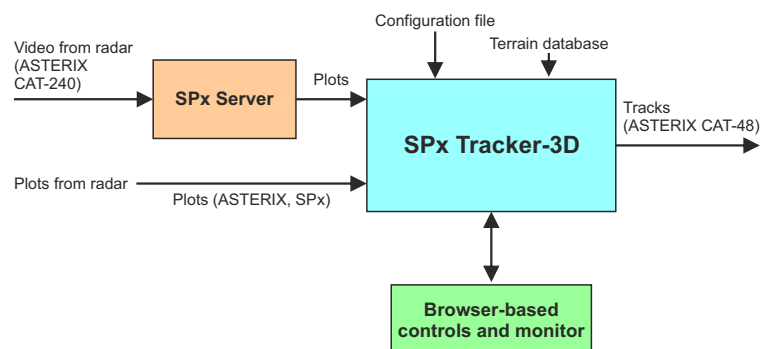
Building on the techniques originally developed for SPx Server, the parameters that affect the behaviour of SPx Tracker-3D may have area-dependent values. Parameter areas can have minimum and maximum heights, allowing parameters to be set as height-dependent. This is an important tool in allowing the behaviour of the track processing to be adjusted in different areas, for example to cope with different conditions or different needs.

3D Visualisation

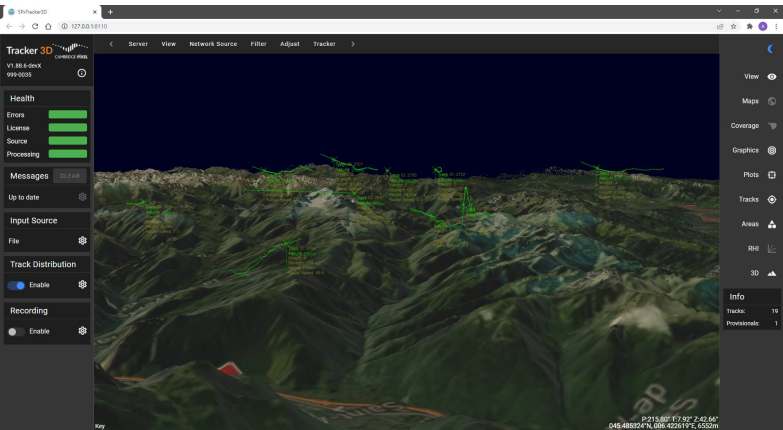
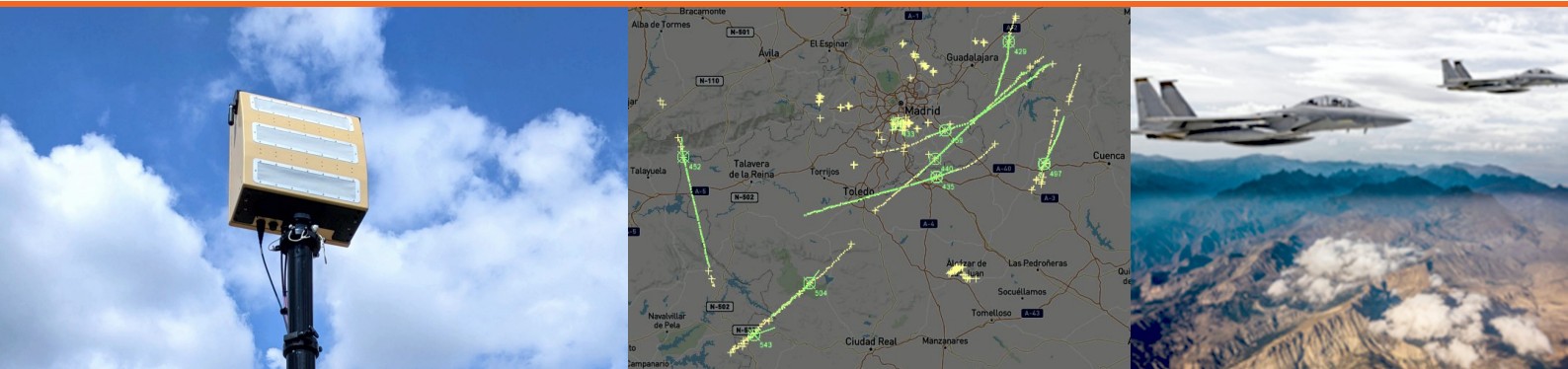
A browser-based user-interface provides the method of visualising plots, tracks, terrain and the associated configuration data. Track processing is sensitive to terrain, which is read from a database at startup to define the 3D space surrounding the sensor and permit the tracker to assess whether targets may be lost because of terrain. The user interface provides an intuitive display of terrain, plots and tracks, permitting the viewpoint to be moved in real-time to visualise the incoming radar detection and terrain.

Track Output

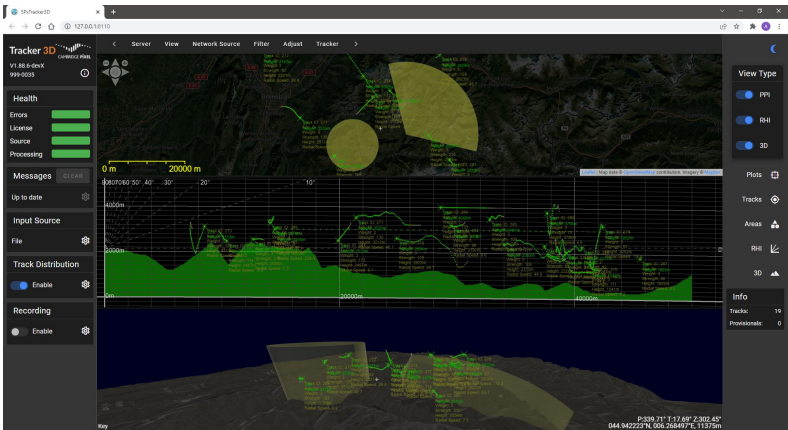
Track reports are sent through a configurable network interface in ASTERIX CAT-48 or SPx formats. Other formats may be supported for specific versions of the software. An SDK is available to support remote control and receipt of track reports using C++, C# or Java-based client code.



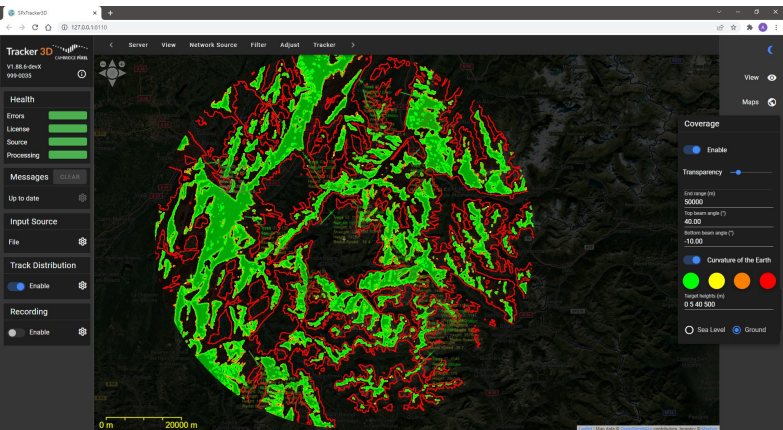
System Configuration



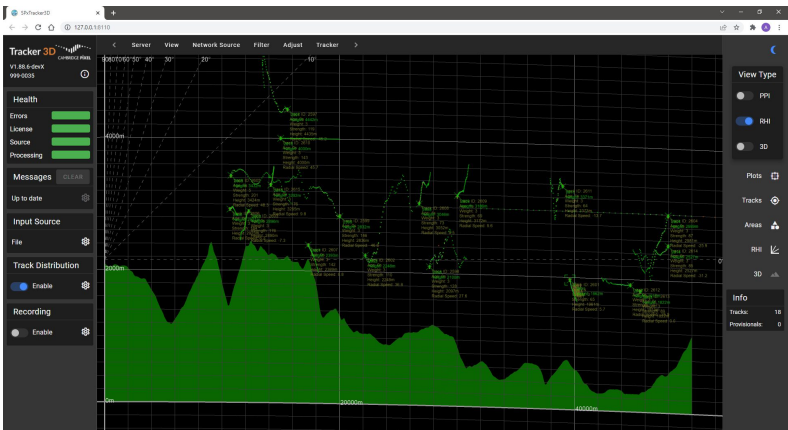
3D visualisation mode



Area-dependent parameter support



Radar coverage prediction



Radar Height Indicator (RHI) display

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