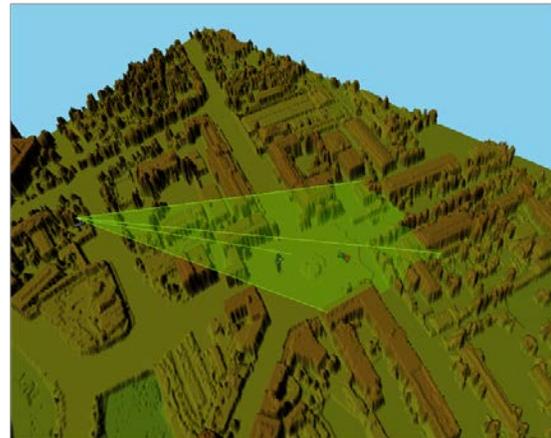




FOCUS is an entity-level, event driven, stochastic, ISR-centric simulation. FOCUS simulates ISR processes, including sensor performance, tasking and collection; the exploitation and processing of data from all sources, the fusion of this information into tracks, and the communication of current predicted tracks to a visual simulation of entities and events in a three-dimensional battle-space. FOCUS is developed by AMSAA for use in the analysis of the impact of ISR on tactical decision making in the Acquisition, Analysis, Operations, Testing and Experimentation Communities. FOCUS can be used to rapidly assess the performance of ISR systems in small, operational vignettes in complex environments such as urban and mountainous terrains. A typical use case is the comparison of a mix of aerial systems conducting search and tracking missions using Single or Multi-INT sensors.

FOCUS represents entities at the platform (vehicle, aircraft, dismounted soldier, etc.) and sensor (Electro-Optical/Infrared, Moving Target Indicator and Synthetic Aperture Radars, Signals Intelligence) level. Behaviors such as movement, collection, acquisition, and communications are defined for each entity by the user when setting up the vignette. Behaviors can either be manually generated by placing waypoints on the terrain or by constructing a flow diagram of built-in, autonomous “missions” along with dynamic conditionals and events. Vignettes are built using an easy to use graphical user interface that enables a user to quickly generate a scene, entities, and behaviors using point and click operations. Terrain can be selected from an included database for low resolution elevation data (30-100 meter intervals) or can be imported from external text files for high resolution elevation data (1 meter intervals). Buildings and other environmental features can be added to the terrain surface. A post-processing analysis toolkit is integrated into FOCUS to filter the output file and extract the desired results. The results can be viewed using the internal FOCUS graphs or exported for further spreadsheet analysis.



AMSAA is continuously improving the sensor representations and overall ISR process including the ability to simulate Level 1 Fusion, the association of sensor measurements into tracks while maintaining fused position and velocity estimates and elliptical errors. Current applications of FOCUS include ISR sensor performance analysis (sensor mix comparisons, platform/sensor cueing impacts, complex terrain impacts, etc.), sensor coverage analysis, and Tactics, Techniques and Procedures comparative analysis. FOCUS has been utilized in several Aerial Reconnaissance and Surveillance Mix studies to compare and analyze the systems in urban and mountainous environments by examining the area search and target tracking performance. Sample metrics include the number of detections, identifications, and line of sight blocks for searching and the target “track” lost intervals over time for tracking.

