

**Multi sensor resource manager that provides emplacement, search planning and resource coordination from force to unit level.**



**OVERVIEW**

Military (Army, Navy, Air Force), State Department (embassies), Municipality (vehicle traffic management), Airport (Air Traffic Control), and Weather (storm tracking) managers have a need to maximize sensor-based threat detection to determine courses of action. This need includes full-area sensor resource coordination and re-allocation to reduce utilization and provide the best opportunity to identify threats. Stadium is a powerful resource manager software tool that serves as a high-speed, accurate planner and tasker that provides four key sensor actions: Placement, Search Pattern Planning, Load Spreading and Dynamic Real-Time Updating.

**TECHNICAL**

Stadium achieves three primary objectives to optimize system-level performance of heterogeneous sensor types:

- 1** Computes optimal emplacement or operating areas in order to best achieve early detection, discrimination, and fire control quality timelines.
- 2** Computes optimal search sectors for emplaced sensors in order to maximize coverages of the highest priority spatial volumes.
- 3** Tasks sensors to balance duty cycles among multiple sensors.

Stadium performs these objectives with efficiencies that enable dynamic adaptation during battle. For emplacement/operating areas and search sector determination, Stadium exploits a prioritized mapping of the space over an operating area, spatial masks that capture each sensor’s capabilities and threat intelligence, and a rapid binary classifier technique that optimizes high priority space. For sensor tasking, innovative algorithms ensure each sensor performs the most productive tasks while minimizing over-loading. Once battle begins, search sectors dynamically adapt to observed enemy patterns while maintaining the original intelligence. Search volumes automatically resize, and new sensors can be added in real-time, and degraded sensors accounted for. Coverage metrics allow the user to compare multiple plans.

