

USMC G-BOSS System Optimizes Sensor Coverage and Anticipates Enemy Surveillance Capability Using STK

USMC Improves G-BOSS Sensor Coverage Using STK

THE SITREP: United States Marine Corps (USMC) forces need to provide optimum surveillance coverage from their own assets. The G-BOSS can provide around-the-clock electro-optical and infrared surveillance coverage around operating bases, along major supply routes, and areas of known adversary activity. AGI's Systems Tool Kit (STK) software has helped set the ideal number and placement of G-BOSS for maximum coverage.

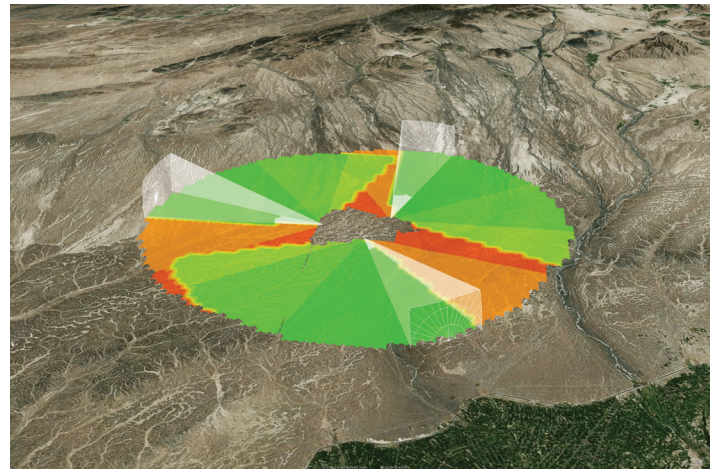
DEPLOYMENT: The G-BOSS consists of cameras and sensors mounted on portable 80-foot and semi-permanent 100-foot towers. These sensors can all be fed to one location to allow personnel to monitor several cameras or sensors at once for security and situational awareness. In late 2015 USMC-deployed analysts working on G-BOSS placements reached back to Operations Analysis Directorate (OAD) for help. The analysts had seen the USMC successfully use STK software on Unmanned Aerial Vehicle (UAV), counter-battery radar, ground camera sensors, and communications studies. OAD relies on STK's ability to display sensor coverage, import terrain features, and generate topographic maps. This also convinced them of the software's abilities to handle the current problems. As a result, OAD employed STK for base analysis and gap coverage with the G-BOSS.

"What makes STK workable for us is the visual aspect. We can place G-BOSS units in different locations to see what coverage we get and compare the percent coverage."

— BRITTLEA BROWN, ANALYST

"The visual ability of STK is vital and allows us to quickly identify missing areas and gaps in coverage—as well as determine which sensors will have a positive effect and which will not."

— DAVID GIBBONS, ANALYST



As modern warfare evolves; equipment, strategy, and tactics must keep pace. Nowhere is this more apparent than in Intelligence, Surveillance, and Reconnaissance (ISR), which allows combat forces to employ sensors, imaging, and other assets to gather and manage information. The United States Marine Corps (USMC) Ground-based Operational Surveillance System (G-BOSS) is one of the systems used for security that fuses many ISR sensors into one system.

THE INTEL: The USMC analyzed placing the G-BOSS at two overseas US bases using AGI's Systems Tool Kit (STK). STK's ability to show sensor coverage and terrain impact on those sensors revealed G-BOSS locations that would help improve sensor coverage. They also analyzed coverage to show the impact that additional systems might provide. The findings provided qualitative and quantitative basis for decision-makers to determine if additional assets were required by informing the USMC of potential gaps in coverage due to terrain.