Remote Guardian System™

Answering the need for an affordable, all-quadrant, defensive weapon system for the V-22

With more than 50 years of airborne weapons experience, BAE Systems also is the premier architect of military flight control systems. Since the 1960s, BAE Systems has been integrating its weapon control and vehicle flight control technology to deliver unsurpassed gun accuracy for platforms such as the A-10, F-16, and F-22.

Today, BAE Systems brings this expertise to the Remote Guardian™ System (RGS), an affordable, turreted, remotely operated weapon system that meets the specific all-quadrant defensive needs of the V-22.

Demonstrated independently on a moving High-mobility Multipurpose Wheeled Vehicle (HMMWV), the RGS is the first remote weapon system capable of delivering accurate, sustained fire throughout the entire flight envelope of the V-22. Because it receives input from the aircraft’s vehicle management system, it can maximize the potential fields of fire during all stages of flight, regardless of aircraft configuration.

The system’s use of a continuously computed impact point means the gunner simply points and shoots, while the weapon control computer adjusts the weapon to compensate for wind and vehicle motion. It is limited only by the maximum effective range of the installed weapon.

The gunner’s station is a simple, intuitive design that was created through input from crew chiefs, flight engineers, and aviators with combat gunnery experience.

As a mission kit, the RGS minimizes integration costs and was designed to be completely compatible with the V-22's avionics suite. It provides the flexibility mission commanders need, without any changes to troop-carrying capacity. In addition, a fully operational RGS will have no cabin intrusion, no drag when stowed, and no negative change to aircraft center of gravity.

The system’s modular design provides greater weapon and sensor flexibility, reduces integration risk, and simplifies its supportability.

Features

- Mature solution designed and built from proven elements of fielded systems
- Mission-kit approach — modular design for quick installation and compatibility with different weapons/sensors
- Developed as V-22 solution — functions through all modes of flight and throughout entire flight envelope
- Intuitive point-and-shoot and fire-on-the-move operation

Live-fire testing from an HMMWV.

Remote Guardian System installed on V-22.
Remote Guardian System™

Key capabilities:

- Mission-kit design minimizes integration to vehicle and is compatible with existing avionics or electronic systems
- Weapon, turret, and sensor all fit within the “hell-hole” space. There is no impact on troop-carrying capacity, no intrusion into cabin, no drag when stowed, and no negative change to center of gravity
- Compact, retractable design
  - Weapon can be retracted to maintain platform radar cross-section or low-observable qualities
- Modular design
  - Supports multiple sensor capability
  - Allows integration of vehicle sensor capability
- Intuitive, inertial, line-of-sight stabilized system for point-and-shoot and fire-on-the-move operation
  - Greater than 45 deg/sec line-of-sight threat tracking
  - Sight/weapon fully stabilized against vehicle motion
  - Inertial and wind-corrected sight provides real-time lead and elevation compensation, generating a continuously computed impact point
  - Integrated training mode allows training without weapon or live rounds

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