



AN/BYG-1(V) Submarine Combat System



AN/BYG-1(V) Submarine Combat System is the world's most advanced submarine combat system now tailored to conventional submarine configurations.

Benefits

- Open architecture
 - Interfaces with new or existing ship systems
 - Seamless technology and capability upgrades
- Flexible human machine interface
 - Any function/any seat
 - Tailored to user needs and requirements
- Automated system functions
 - Increases system performance while reducing operator workload
- Integrated onboard training
 - Hands-on training for system operations and maintenance
- Comprehensive offsets
 - In-country involvement in software tailoring
 - High degree of independence for maintenance, upgrades and additional sensors

Raytheon's AN/BYG-1(V) for conventional submarines is based on the U.S. Navy's proven combat system and is tailored to meet the unique requirements of diesel submarine operations. AN/BYG-1(V) capabilities provide unrivaled flexibility, reliability and performance to support today's varied submarine missions.

AN/BYG-1(V) exploits the power of sonar, ESM, radar, navigation, periscopes, communication, command and weapons to provide a fully integrated combat system. The system was designed using commercial open standards that provide interoperability, portability, scalability and supplier independence for all hardware and software components. The flexible system design allows rapid integration of additional sensors and/or weapons.

Integrating the ship's new or existing organic sensors with off-hull data allows AN/BYG-1(V) to combine maximum situational awareness with automated decision aids to deliver superior platform performance. AN/BYG-1(V) provides an integrated operating picture, concisely displaying information to the crew, to facilitate situational awareness and enable accurate, timely decision-making.

Operators are able to "drill down" into the detailed information for further analysis of the situation as necessary.

The modern backbone enables monitoring/control from remote stations around the submarine.

AN/BYG-1(V)'s flexible human machine interface delivers "any function at any seat" flexibility. Standard windowing features and a high-speed network

backbone combined with Virtual Network Computing facilitate the use of true multi-function common consoles while providing complete management of all operator displays and controls.

By involving Navy operators in the development process, Raytheon is able to deliver systems that meet the customer's exact "look and feel" requirements. Customers are also given the tools needed to make any changes throughout the life of the system.

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Sonar

The Underwater Surveillance Subsystem provides acoustic detection, tracking and localization, recording, analysis, classification, audio, sonar data handling and support.

Data sources include: the Flank Array Sonar; Cylindrical Array Sonar; Passive Ranging Sonar; Intercept Array; Towed Array; Mine and Obstacle Detection Sonar; and Own-Noise Monitoring. Open architecture allows the selection of a variety of sonar suites to meet unique customer requirements.

ESM

Several modern, capable ESM suites are available. In addition, through the use of Sensor Interface Units and Interface Design Language (based on CORBA standards), national proprietary ESM components may be integrated into the core combat system without visibility into sensitive or classified information.

Radar

The Sensor Interface Unit design applies to the radar components as well. Any radar may be integrated without the need to reveal national classified or sensitive data. Also, by virtue of the high-speed network backbone, radar scan displays may be shipped as complete windows to multifunction common consoles thereby eliminating the need for dedicated hardware in some consoles and the point-to-point connections found in traditional systems.

Navigation

Any navigation suite may be integrated with AN/BYG-1(V) using the Sensor Interface Unit concept. Weapons data senescence requirements and other critical timing requirements are easily fulfilled via the high-speed network backbone.



Fully integrated sonar suite provides excellent capabilities in blue water and littorals



State-of-the-art configurable command center



Robust, integrated and adaptable weapon control affords full ship safety/self protect, torpedo attack and strike capabilities

Periscopes

The AN/BYG-1(V) open network architecture offers the customer a wide range of options for all imaging requirements. Analog and digital video in both standard and high definition black and white or color can be supported through the high-speed local area network without need for dedicated imaging workstations requiring special hardware configurations.

Command

Today's complex target motion analysis problems are easily solved with the state-of-the-art TMA algorithms included in AN/BYG-1(V). These algorithms, jointly developed by Raytheon and the U.S. Navy as part of a \$1 billion plus research and development initiative, are supported by an intuitive, color-coded parameter evaluation plot, which is easily configured to incorporate new algorithms according to customer requirements.

Weapons

Raytheon is the most experienced submarine weapons integrator in the world, having been responsible for the integration of every submarine launched torpedo and missile in the U.S. Navy's inventory for the past 20 years. AN/BYG-1(V) system architecture allows the integration of any new or existing weapon with ease.

AN/BYG-1(V) has been designated the baseline system for the entire U.S. Navy submarine force and the replacement combat control system for the Royal Australian Navy's Collins-class diesel submarines. As the combat-proven system of choice, AN/BYG-1(V) delivers the capability, reliability and affordability that customers demand and the flexibility and performance to ensure mission success for U.S. and allied forces worldwide.

Raytheon Company
Integrated Defense Systems
50 Apple Hill Drive
Tewksbury, Massachusetts
01876 USA

www.raytheon.com

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Customer Success Is Our Mission