Integrated Battle Management System (iBMS)

Delivering Situational Awareness and Command and Control Capabilities
Situational awareness (SA) is a precondition for good decision making. The building blocks of SA include knowing the following information:

- Where am I?
- Where are my buddies?
- Where is the enemy?

Northrop Grumman’s Integrated Battle Management System (iBMS) provides commanders with automated situational awareness (SA) information displayed in near real-time. Given this knowledge, commanders can use the iBMS command and control (C2) capabilities to synchronize their units mission execution. iBMS C2 planning and decision tools include graphic control measures, overlays and various message formats.

Legacy C2 systems featured voice-only C2, manual force tracking, limited connectivity and very limited SA. Commanders had to make decisions without the benefit of current SA gained by viewing an automated map displayed common operational picture (COP).

A modern Command, Control, Communications, Computers and Intelligence (C4I) system must offer voice communications, a shared COP using digital map displays, automated force tracking, enhanced connectivity and near real-time SA. In short, a modern land force requires an integrated battle management system to reduce uncertainty, enable faster and better command decisions, resulting in
mission accomplishment with fewer casualties and incidents of fratricide.

iBMS is a scalable C4I system for brigade and below ground units built upon a robust network of hardware, software and communications components. iBMS ensures that information is shared between national command centers, service command centers in addition to deployed command posts, vehicles and dismounted troops. iBMS is comprised of five key modules that are fully integrated and linked. They are the following.

**iBMS — Handheld**
The iBMS-Handheld (iBMS-HH) is for the dismounted warfighter and includes an affordable, ruggedized, commercial off-the-shelf smartphone, equipped with C2/SA software that features a tactical map display coupled with an advanced meshnet radio that is integrated on the warfighter’s tactical vest. The C2/SA software is simple and easy to learn and use. Furthermore, the C2/SA software is capable of transmitting and receiving voice, data, video, and sensor information. iBMS-HH also includes a flexible communications suite that provides terrestrial and/or satellite connectivity for operations over extended ranges and in complex terrain.

**iBMS — Vehicle**
The iBMS-Vehicle (iBMS-V) solution includes a flexible communications suite that provides terrestrial and/or satellite connectivity for operations over extended ranges and in complex terrain. The common suite of hardware adapts to any vehicle through tailored installation kitting. The iBMS-V software is configured for ease of use in a moving vehicle and provides full-featured SA/C2 capabilities, which are delivered using a ruggedized touch-screen tablet computer mounted in vehicles. Multiple computers can be mounted to support multiple staff positions in command vehicles. Each vehicle solution includes a common suite of communications and network equipment using radios and workstations and is operational while at-the-halt or on-the-move.

**iBMS — Command Post**
A command post system must provide a deployable working environment for commanders and their staffs. Key components are a shelter, power and environmental conditioning units. The iBMS-Command Post (iBMS-CP) communications and software package integrates friendly and observed enemy SA data sent from subordinate units synchronized to create the COP display. This common map display of the current situation is presented to the staff on large projection screens. Individual staff members have access to internal call groups as well as access to specific communications networks from their workstations.

**iBMS C2 Software Suite**
iBMS-C2 Software provides a
mature combat-proven C2 and SA information exchange system for joint and multinational interoperability for both brigade and below operations and for integration with echelons above brigade. The software accommodates customer-tailored messaging interfaces while providing common functions across the brigade that enable the shared COP.

**iBMS - Network Operations**

iBMS provides a hybrid network solution to the land force tactical problem. This network contains both terrestrial and satellite communications (SATCOM) radios ensuring connectivity over extended ranges and when operating in complex terrain. The open architecture supports numerous combat net radios (CNR) and integrates them with an affordable L-Band SATCOM solution that provides a robust force tracking capability. iBMS’ network operations (iBMS-NetOps) manages the network from a centralized location in order to simplify operations for troops in the field. The network enables battle management by transporting the necessary data, voice and video required for leaders to act decisively and effectively.

**iBMS Summary**

*Proven interoperable, resilient and reusable C4I solution*

iBMS delivers a C4I solution for brigade and below ground units that is built using mature, combat-proven hardware and software components. It provides the basic building blocks of SA and C2 in an integrated package that can be adapted to almost any vehicle or command post configuration. Once the basic package is fielded, additional functionality such as indirect fire control, specialized intelligence applications or combat engineering can easily be added by using a number of established interoperability standards and common message formats. iBMS provides the C2/SA capabilities that enable leaders to make faster and better command decisions.

**For more information about iBMS, please contact:**

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