Tactical C4I Systems

Maritime Interdiction Operations System (MIOS™)

The most important thing we build is trust
Cobham’s C4I Maritime Interdiction Operations System (MIOS™) enhances mission capability and provides secure Blue Force Tracking and advanced Situational Awareness.

**Maritime Interdiction Operations System (MIOS™)**

Cobham’s C4I Maritime Interdiction Operations System (MIOS) is a Situational Awareness and Blue Force Tracking system specifically developed for secure Boarding Party and defence applications. The system has been designed to support Military, Coast Guard, Search and Rescue, Border Protection, Law Enforcement and Special Forces organisations who are countering the increased threat from piracy, smuggling and human trafficking.

Cobham has developed MIOS through its experience as a world leader in the design and manufacture of systems for land and marine platforms.

From design to delivery, the company has focussed on providing a solution which utilises bespoke military spec hardware that operates reliably in challenging environmental conditions.

MIOS is designed for ease of integration with existing systems and utilises Cobham’s WaveHawk™ Command Information System (CIS) Software to provide a combined picture for effective operations.

MIOS may be used with a range of legacy equipment and the Boarding Party system is designed to be radio and battery agnostic. This leads to a reduction in training, integration and support costs.

The lightweight, body worn equipment allows users to quickly capture and transmit video files and still images of ships, documents and people, without the need for separate scanners, transmitters and antennas. This dramatically increases the speed of data transfer to support improved decision making by Commanders in remote locations.

Sensors such as biometric cameras and Chemical, Biological, Radiological, Nuclear (CBRN) detectors may be used by Boarding Parties to identify suspects, hidden threats and protect crews. Automatic reports are created and transmitted to selected users with Cobham’s WaveHawk™ software. Reports quickly identify the location, type and level of threat when detected.

The MIOS system can be used on a range of platforms including RHIBs, landing craft, ships and amphibious vehicles, providing a full tactical C4I picture. This can be extended to land based units through the interoperability provided by Cobham’s WaveHawk™ and BattleHawk™ CIS software.

This level of interoperability provides a fully scalable solution for modern military and security operations.

**Key benefits of MIOS™:**

- Safer Boarding Party activities based on secure Situational Awareness (SA)
- Secure tracking of vessels and personnel
- More efficient use of assets
- Ability to share data with coalition forces
- Enhanced communications capability
- Improved tempo of operations
- System stretch to include land and airborne assets (Beach Master and Reconnaissance)
- C4I system from Mothership to RHIB and Boarding Party Officer (BPO)
- Intuitive operation and low training overhead

**Key functions of MIOS™:**

- Wide area real time SA and accurate Blue Force Tracking
- C2 capability between Mothership, RHIB and Boarding Party Officer (BPO)
- Intra-boarding party voice communications
- Capture and secure transmission of text, photographic imagery and video files
- Line of Sight (LOS) voice and data communications with high data rates
- Beyond Line of Sight (BLOS) using rebroadcast capability
- Capture of positional information to support legal actions
- Integration of Automatic Radar Plotting Aid (ARPA) data
- Ability to attach intelligence data to targets
**MIOS™ Boarding Party Configuration**

The MIOS Boarding Party configuration shown has been designed to provide maximum capability and maneuverability with minimal weight.

The system allows inflation of a life jacket without the removal of equipment and all components are waterproof and designed to withstand the rigours of boarding operations.

If required the entire system can be removed using a quick release clip. A carefully designed hydration pack is built in to the back of the system, providing the users with refreshment during operations.

**Marinised Data Terminal (MDT)**

MDT is a rugged militarised, lightweight, powerful Windows™ XP computer designed to meet the rigours of the Boarding Party Operations.

The functional unit has been designed to be easy to use and benefits from simplified Human Computer Interface (HCI).

The MDT utilises a large daylight readable high resolution touch screen display.

The MDT provides Boarding Party teams with real time situational awareness, Blue Force Tracking and full navigation capabilities. It may also be used to support a wide range of other features including translation software, video cameras and CBRN sensors.

**System Interface Unit (SIU)**

The SIU integrates a number of devices in to the MIOS system.

**Key features include:**

- Audio mixing of multiple radios in to one headset
- Generation of system audio alerts
- USB/Ethernet connectivity
- High sensitivity GPS
- Power management
- Digital Magnet Compass option

The SIU provides connectivity with sensors such as CBRN detectors and biometric devices, as well as video and still cameras.

The unit’s GPS system also provides position information to the Boarding Party Officer for accurate Blue Force Tracking.

**User Data Terminal (UDT)**

Cobham’s UDT is a large daylight readable touchscreen unit which processes and displays WaveHawk™ CIS software and AIS information.

The full Windows™ XP system supports RS232/RS422/RS485, USB 2.0 and Ethernet interfaces. As well as NMEA devices such as depth sounders.

This IP67 rated unit allows easy operation at sea and its rugged construction has been designed specifically for harsh environments such as RHIBs, landing craft or other military platforms.

The large screen provides accurate position information of units which leads to safer operations.

**COBHAM**

- Intuitive and Easy to Use
- Enhances Crew Safety
- High Reliability
- Accurate Blue Force Tracking
- Rugged Hardware
- Rapid Identification of Threats
Maritime Interdiction Operations System (MIOS™)

**Mothership**
- Platform specific installation
- Integrates with existing ECDIS and other sensors
- Marine chart and AIS data Integrated to Cobham’s secure WaveHawk™ CIS software
- High capacity data link
- LOS and BLOS voice and data with RHIB and BPO
- Record and replay facilities for post operation analysis
- Provides legal evidence including video replay

**RHIB**
- Cobham UDT computer operating secure WaveHawk™ CIS Software overlaid with Automatic Identification System (AIS) data
- High Bandwidth Data Radio (HBDR)
- LOS voice and data communications with BPO and Mothership
- Secure Situational Awareness (SA)
- Rapid installation and removal

**Boarding Party Officer (BPO)**
- Cobham Marinised Data Terminal (MDT) operating WaveHawk™ CIS Software
- LOS and BLOS voice and data with RHIB and Mothership via rebroadcast facility

**Boarding Party Members**
- Voice radio with all crew members
- Optional Cobham Marinised Data Terminal (MDT) operating WaveHawk™ CIS Software

**Area Coverage using auto Rebroadcast. Enables broadcast around obstacles.**

**Boarding Party Members # 1 (BPM1)**
- Intra Boarding Party Radio

**Boarding Party Members # 6 (BPM6)**
- Optional Marinised Data Terminal (MDT)
- Intra Boarding Party Radio

**BPO**
- Video
- Camera
- High Bandwidth Data Radio (HBDR)
- Intra Boarding Party Radio
- Chemical Biological Radiological Nuclear (CBRN) Sensor
- Biometric devices

**RHIB**
- HBDR (Voice and Data)
- Intra Boarding Party Radio
- AIS
- Sensors
- User Data Terminal (UDT)
- Video camera

**Key**
- Line Of Sight (LOS)
- Beyond Line Of Sight (BLOS)
- Intra Boarding Party Radio (IBPR)
- Voice and Data Comms
- High Bandwidth Data Radio (HBDR)
- Secure Situational Awareness
- Area Coverage using auto Rebroadcast. Enables broadcast around obstacles.