



bands. Tools are also provided to assist with “What if” planning scenarios and MIJI analysis. CMS automates the production of CEOI material and network security plans. Transfer of security plans to the CMMS for cryptographic key generation is done electronically for all Iris encryption units.

Situational Awareness System

The Situation Awareness System (SAS) provides a high accuracy position reporting and navigation capability. SAS provides the capability to exchange position and other situation awareness information between SAS-equipped vehicles using the Iris System. SAS provides the capability to display maps and symbols, perform database queries, initiate message transmission, and incorporate data from received messages in a database. Interfaces to GPS receivers and laser designation systems ease input of own position and designated locations.

SAS is one of the first and most advanced situation awareness and battlefield management systems to be fielded in the world. SAS provides command and control through common “core” software at command loca-

tions, which is augmented by GPS receivers that can be employed at every level from individual vehicles and personnel to headquarters.

GPS receivers provide both position information and location tracking of other units on their nets. This provides a cost-effective solution to wide-spread situational awareness. SAS provides an interface to allied and higher echelon command, control and information systems through ADatP-3 messages.

Integrated Logistics Support

During the design and development of the Iris System, complete maintenance, provisioning, and training analysis was conducted. The deployed system includes: field maintenance support tools; conversion training courses; and training courseware; including CBT; technical manuals on CD-ROMs; and electronic format technical data packages.

The Integrated System

Whereas the Iris System provides the communications bearer system, the integration of the Situation Awareness System and the Athene Tactical System with the Iris System provides the Canadian Land Forces with the most advanced, fully integrated, and digitized tactical command, control and communications capabilities in the world.

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Iris System

Integrated voice and data communications for the battlefield



- Flexible
- Survivable
- Secure
- Mobile
- Reliable
- Interoperable

GENERAL DYNAMICS

Canada

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Canada

The Iris System

Meets the challenges of the modern battlefield through the use of:

Innovation – leading edge technology

Automation – built for the information age

Digitization – digital data with optimized bandwidth utilization

Standardization – open systems architecture

Integration – enhanced operability, capability and availability

Iris is the world's first, fully integrated voice and data communications system supporting tactical operations at all echelons, from the dismounted soldier to combat and support vehicles, to tactical command posts at battalion, brigade and division headquarters, and with links to theatre and national headquarters. The Iris System provides secure voice and data connectivity over radio, telephone, and satellite links. A common point of access to all intercom, radio and inter-vehicle links, ensures ease of operation for users in, or connected to, vehicles. The Iris System was designed for, and has been deployed with, the Canadian Land Forces. Similar components of the Iris System have also been deployed with the US Marine Corps, with the US Army Tactical Operations Centres, and most recently with the UK Military under the BOWMAN program.

The Iris System comprises a complete family of integrated information distribution equipment with complete planning and control software. Specialized equipment such as air-ground-air and HF radios, trunk links, and gateways are all seamlessly integrated. The Iris System includes a local area system for vehicles and headquarters, a long range communications system with satellite and high frequency components, and four major software elements—a system-wide tactical message handling system, a communications management system, a crypto material management system, and a situational awareness system.

Iris Integrated Voice and Data Communications

The Iris System architecture is comprised of:

- Local Area System
- Wide Area System
- Combat Net Radio System
- Messaging System
- System Management and Control System
- Situational Awareness System

The Local Area System

The Local Area System is the Information Distribution System (IDS), a modular and flexible local communication system. Its common architecture is IP based and provides plug-and-play capabilities, including DNS-like services, to meet the requirements of headquarters ranging from division or task force down to sub-unit level. Based on General Dynamics Canada's (GD Canada) successful MESHnet™ product, IDS provides inter- and intra-vehicle integrated digital voice and data communications for vehicles from tanks to command posts.

Vehicles are connected to the IDS via fiber-optic links. The network is self-discovering and users can freely connect and disconnect without external reconfiguration. In the event of battle damage the IDS will automatically reconfigure.



Two compact units, the User Control Device (UCD) and the Network Access Unit, form the heart of the system. IDS is simple to install, maintain, operate, and tailor to changing roles. The UCD provides user access to all means of communication: vehicle intercom, the headquarters local area system, all radio nets, and the wide area system, all through a single headset. The UCD also provides data port services for data terminals to connect to the IDS.

The IDS allows user access to radios in any of the interconnected vehicles, thereby catering to the establishment of geographically remoted radio parks to improve headquarters survivability. The radio park concept is further enhanced by the ability to form separate transmit and receive sites for the various radio nets.

Wide Area System

The Wide Area System is a combination of the Iris Trunk System (ITS) and the Long Range Communications System (LRCS). The ITS provides secure multi-channel Line-of-Sight communications for voice and data in the radio relay Bands I, IV, and V frequencies, and over fiber-optic trunk links. The LRCS provides secure satellite, C, Ku, or X-Band, and high power HF voice and data communications for deployed forces back to the national communications infrastructure.

Gateways are provided to PSTN and MTDG. The Wide Area System can also be used to connect headquarters to remote emitter and/or receiver sites to minimize the electronic signature of the headquarters.

Combat Net Radio System

The Combat Net Radio System (CNR) consists of digital radio systems covering HF, VHF, and UHF bands. They include radio net, point-to-point, ship-to-shore, air-ground-air, long-range, voice, data, and mixed-mode communications. The equipment can be employed in vehicles, aircraft, ship, or manpack configurations. The CNR System supports secure and non-secure radio-rebroadcast, even across frequency bands. On multi-radio vehicles the CNR System minimizes cosite interference across all bands.

The Messaging System

The Messaging System or Tactical Message Handling System (TMHS) extends throughout Iris, including the CNR nets, for the exchange of data between users and computer applications using X.400 messages. The TMHS provides store-and-forward messaging over the entire communications capabilities of the Iris System. Using standard and user-defined proforma, the TMHS formats also permit the transfer of messages to strategic and allied systems.

The System Management and Control System

The System Management and Control System is a combination of the Communications Management System (CMS), providing EUROCOM D0 management facilities, and the Crypto Material Management System (CMMS), providing management and distribution facilities, for cryptographic material within Iris. The CMS allows users to plan, execute, and monitor system deployment, performance, network loading, and frequency allocation. The CMS provides for distributed communication planning, yet centralized frequency deconfliction across all