

# VT Miltope

## Aircraft Networking Solutions

Networking technology is rapidly evolving to keep pace with our ever expanding appetite for higher data rates, processing speed and data storage. Ethernet, USB, Internet Protocol (IP) and modular network building blocks are cornerstones of office networks. Fortunately, for the corporate IT world, there are industry standards and common practices from which networks are designed, allowing for scalability, upgradeability, and interchangeability. These technologies and proven practices may be applied to an aircraft as well.

VT Miltope is enabling networking architectures and products to move from the ground to the airplane by championing the development of aviation standards and using a building block approach to aircraft networks. The goal has been to standardize packaging, electrical interfaces, software services and protocols to allow the aviation industry to design and tailor their networks in a manner similar to office networks. This offers both airlines and business jet operators greater freedom of choice in aircraft network solutions, even across mixed airframe types, that are tailored to the operational needs as well as entertainment and communication required by passengers. Once integrated, VT Miltope network products are managed using proven commercial network approaches.

Standardizing tray wiring and connector index keying enable system integrators and airframe manufacturers to define the space needed for network components before the operational requirements have been finalized. This approach, a first in the aviation industry, creates the airborne equivalent of standardized equipment racks used for corporate IT data centers. To support this strategy, VT Miltope has developed a family of airborne network products in standard packaging and tray wiring specifications such as specified in ARINC 763 and ARINC 600. When integrated, these products form a network which optimizes the combination of interfaces and com-

puting resources to meet the operational, spatial and functional requirements of desired services.

The product range includes:

Servers:

Network Server Unit (NSU) — inte-



grates other aircraft avionics and used to host network management.

Computational Resource Unit (CRU) — application server or used to add dedicated processing capability.

Telephony Server (ATS) — communication management server with CEPT/E1 and DSP.

Ethernet switches:

Ethernet Switch Unit (ESU) — centralized, managed GigE switch used for network expansion.

Remote Ethernet Switch (RES) — sealed, managed switch for remote network expansion.

Access points:

Multifunction Access Point (MAP and nMAP) — 802.11a/b/g and 802.11n enable aircraft hot spots.

Terminal Wireless LAN Unit (TWLU) — wireless bridge from aircraft LAN to ground based LAN.

Printers:

TP4429 Printer — compact ARINC 740 printer.

TP4840 Printer — family of ARINC 744 & 744A thermal printer for flight deck and cabin applications.

nPrinter — network device having

print management and print server capability.

Network Control Panel (NCP) — compact network interface for centralized management and diagnostics.

Network Attached Storage (NAS) — high capacity storage device accessible to multiple network devices.

To build integrated wired and wireless networks, VT Miltope offers networking solutions including hardware and software. Both middleware and software applications run on the network hardware platform to support a wide array of services currently in demand by passengers, flight crew, maintenance/operation personnel and data centers. The messaging structure of a VT Miltope network provides for secure communication between applications, data loading and configuration management with remote network management.

VT Miltope's integrated Airborne Broadband Network solutions enable communication services such as air to ground telephony, Internet and e-mail; IFE content provisioning such as gaming, music, IPTV and IFE content updates; flight crew support of EFB (electronic flight bag), portable sales terminals, and cabin log books; and operations and maintenance support for such services as cabin inventory management, electronic aircraft manual, centralized maintenance and remote network management.

With over 30 years of experience in developing and manufacturing computers and networking products for flight deck and cabin applications, VT Miltope understands how to apply networking products and practices to an airplane and allow for scalability, upgradeability and interchangeability.

### Contact Information

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