Technical Specifications

Communications System
- VoIP base Session Initiation Protocol (SIP) and secure SIP
- Dual Ring Gigabit Ethernet Backbone – configurable to operate in fallback mode without performance degradation
- System and radio management

Power Supply
- 18-36 VDC input, MIL-STD-1275 compliant distributed power supply

Interfaces
- Ethernet (IP Phone / IP Radio / Data Terminals)
- RS232
- Analogue audio (4-wire Tx / Rx / PTT)
- Analogue alarm inputs and loud speaker outputs

Environment and EMI/EMC Qualifications

Operating Temperature	MIL-STD-810G (-40°C to +60°C)
Storage Temperature	MIL-STD-810G (-55°C to +71°C)
Solar	MIL-STD-810G
Fungus	MIL-STD-810G
Vibration	MIL-STD-810G
Shock	MIL-STD-810G
Salt Fog	MIL-STD-810G
Humidity	MIL-STD-810G
Ingress Protection	IP68 (Water Submersion at 1m)
EMI/EMC	MIL-STD-461E
Vehicular Supply Standard	MIL-STD-1275D

Our Services

- System conceptualisation and design
- Manufacturing and procurement
- Implementation
- System integration
- Testing and commissioning
- Documentation and training
- Supply support
- Warranty and maintenance

Accolades

- CRP (Congrès de la Radiocommunication Professionnelle) Outstanding Product Trophy for SuperneT Radio Gateway
- Asia Pacific ICT Awards (APICTA) – Merit Prize (Communication Applications Category) for SuperneT Integrated Communications System
- Infocomm Singapore Awards for SuperneT Integrated Communications System
- IES Prestigious Engineering Achievement Award for SuperneT Integrated Communications System

Patents

- Voice over the Internet Method and System [SG: P-No 152824 (WO 2008/069754)]
- Un-interrrupted VoIP Radio Gateway Services through Clustering [SG: P-No 143323 (WO 2007/0700009)]
- Wireless Communication System [SG: P-No 120810 (WO 2005/067165)]
- Redundant Power Supply for Power-Over-Ethernet [SG: P-No 132094 (WO 2006/052217)]
- Dual Mode ISDN S/U Interface Converter [SG P-No 88454 (WO 02/84983)], [US 7,016,374 B2]

(VICS-B2-2)

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Secure, Reliable, Future Proof, Scalable

SuperneT Vehicular Integrated Communications System (VICS) is a versatile, rugged and reliable integrated communications and network solution for military and paramilitary applications in harsh tactical and mobile environments. It is suitable for deployment on both wheeled and tracked combat vehicles, as well as naval/maritime vessels. The SuperneT VICS is a full IP system that facilitates the convergence of voice and data (including video) services for cooperative engagement in mission critical operations. It serves as a unified communications platform to provide interoperability between heterogeneous communications systems (IP and non-IP).

Key Features

- **Integrated Communications System** - IP-based system architecture that provides integrated voice and data communications
- **Modular and Scalable System** – Key components are designed with the same form fit factor and are easily configured to enable expansion for various armoured platform vehicles with different operational needs
- **No Single Point of Failure** – Its ring architecture provides high system survivability and reliability; failure in any power or Ethernet link will not cause a total system failure or disruption to vital communications

Key Components		Form & Fit		Backbone & Power Supply		Crew Access		Radio Interface		Ancillary Interfaces				
		Size (mm)	Weight (kg)	Dual GbE Ring	18-36 Vdc MIL-STD-1275	Crew Access	Binaural	Radio Ports	Control	Voice Ethernet	Data Ethernet	VFD Display	Loud Speaker	Alarm Inputs
Crew Units	**Single Crew Unit (SCU)** • provides voice or voice and data services for 1 crew	135W x 130H x 70D	1.2	3	3	1	3	2	3	2	2	3	3	3
	Dual Crew Unit (DCU) • provides voice or voice and data services for 2 crews	135W x 130H x 70D	1.2	3	3	2	3	2	3	2	2			
Interface Units	**Radio Interface Unit (RIU)** • provides additional radio interfaces and control ports	135W x 130H x 90D	1.5	3	3			4	3					
	Ethernet Interface Unit (EIU) • provides additional Ethernet interfaces	135W x 130H x 90D	1.8	3	3					4	4			

Companion Units

Gigabit Switch Unit

- A 10/20-port Managed Gigabit Ethernet Switch that provides additional Ethernet interfaces
- Dimension: 135W x 130H x 83D
- Weight: 1.3kg

Vehicular Network Node

- Communications Gateway for dismounted operations
- Dimension: 135W x 130H x 90D
- Weight: 1.5kg

Peripherals

Crew Console and Apps

- Utilises Windows® or Android® platform (via smartphone, tablet or laptop) to gain remote control and access of the intercom system

Communications Processor Server

- Provides intra-vehicular connectivity with communications server and security features

Accessories

Headsets

Loud Speakers

Cables

Handsets

System Capabilities

System Integration and Interoperability
A secure and reliable communications system is critical to the success of cooperative engagement between friendly forces. SuperneT VICS enables integration and interoperability of various communications systems. These systems include:

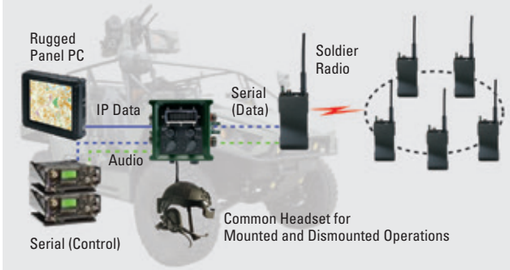
- Radios – Combat Net Radio (CNR) Systems, UHF/VHF/HF radios, Software Defined Radio (SDR), High-speed Data Radio (HDR) and Personal Role Radio (PPR) etc.
- Wireless Networks – Mobile Ad hoc Network (MANET), LTE Systems etc.
- SATCOM On-The-Move (SOTM), Receive Only SATCOM (ROSAT)
- Legacy Telephony Systems
- Public Address (PA) and Alarm Systems
- IP Video Sources
- Deterrent Systems

System Scalability and Reliability
The SuperneT VICS adopts a scalable, modular and expandable architecture to support different interface requirements and configurations. In addition, its survivable dual ring infrastructure and distributed power supply are designed to enhance system reliability.

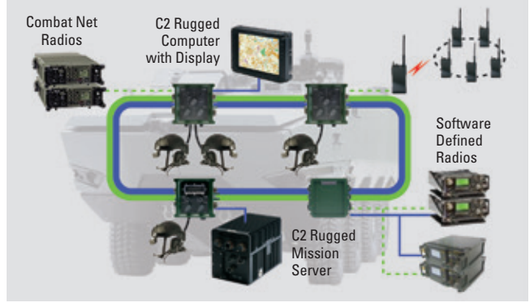
Various Application Platforms

Single Station Mode
In the simplest form, the SuperneT VICS functions autonomously by providing a complete vehicle intercom system, including two radio interface controls, an Ethernet-to-external IP device and/or data terminals. This mode is suitable for light variant combat vehicular platforms.

Light Reconnaissance and Strike Operation



Infantry / Armour Command and Fighting Variants



Integrated C4 Mode
The entire suite of C4 system (including Battlefield Management System and Vectronics) resides on the SuperneT VICS infrastructure to integrate voice, data and video. With the Communications Processor Server (CPS)'s role ID addressing feature, inter-vehicular communications is made easier for the crew as it takes over the complication of specific network selection. The fully redundant CPS data link server provides end-to-end data services among vehicles, across echelons and with other forces.

Integrated Inter-communications Mode
The SuperneT VICS can be configured for a maximum of:
(i) 20 crew units or 40 binaural headsets,
(ii) 48 ports for CNR or SDR, and
(iii) multiple IP connectivity and digital inputs/outputs.

The digital 1 Gbps ring serves the voice and data traffic separately, to provide redundancy and reliability. Any crew unit can be programmed as a primary or secondary master control station. This mode is suitable for any combat vehicular platforms.

Network Centric Cooperative Engagement