VEHICULAR INTEGRATED COMMUNICATIONS SYSTEM

Enabler of Digital Transformation

![ST Engineering logo] **ST Engineering**

Vehicular Integrated Communications System

The 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 VICS is a full IP system that facilitates the convergence of voice and data (including video) services for collaborative 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

- Tactical network for digital transformation
- High-speed tactical network for mission critical communications
- Open vehicle architecture for easy integration

Key Components		Form & Fit		Backbone & Power Supply		Crew Access		Radio Interface		Ancillary Interfaces				
		Size (mm)	Weight (kg)	Dual GbE Ring	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	1.5	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	1.5	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 70D	1.5	3	3			4	3					
Ethernet Interface Unit (EIU) • provides additional Ethernet interfaces		135W x 130H x 70D	1.5	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: 1.5kg

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

Handsets

System Capabilities

System Integration and Interoperability

A secure and reliable communications system is critical to the success of collaborative engagement between friendly forces. The VICS enables integration and interoperability of various communications systems.
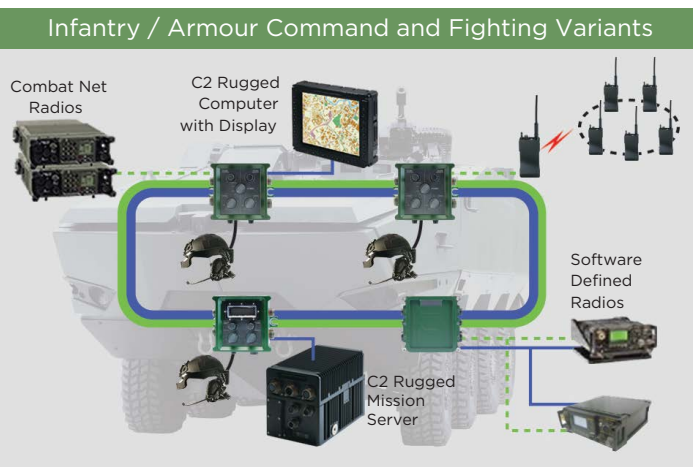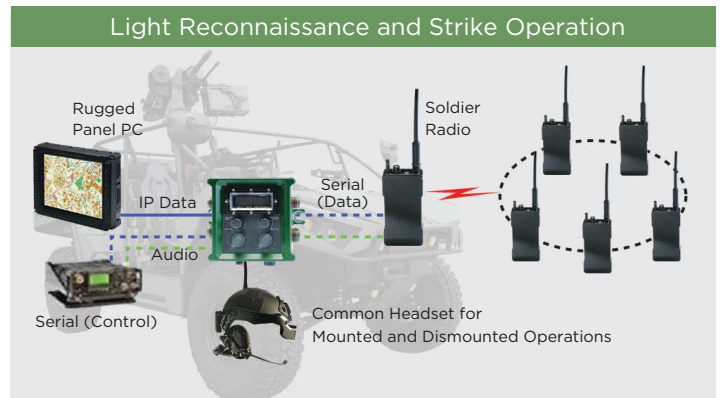
System Scalability and Reliability

The 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 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

Rugged Panel PC · Soldier Radio · IP Data · Serial (Data) · Audio · Serial (Control) · Common Headset for Mounted and Dismounted Operations

Infantry / Armour Command and Fighting Variants

Combat Net Radios · C2 Rugged Computer with Display · Software Defined Radios · C2 Rugged Mission Server
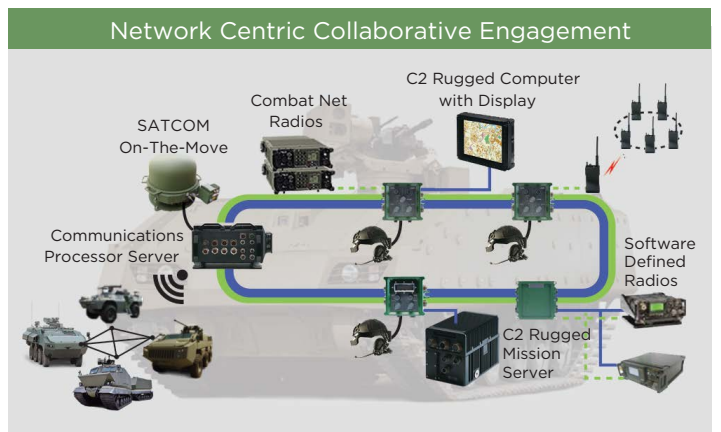
Integrated Inter-communications Mode

The 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.

Integrated C4 Mode

The entire suite of C4 system (including Battlefield Management System and Vectronics) resides on the 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.

Network Centric Collaborative Engagement

SATCOM On-The-Move · Combat Net Radios · C2 Rugged Computer with Display · Communications Processor Server · Software Defined Radios · C2 Rugged Mission Server

Technical Specifications

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]