



# ICS-C2 – Integrated Communications Systems for Command and Control

Interoperable & Flexible

Resilient & Efficient

Secure / Non-secure Controller Operational Environments

# Integrated, software defined C2 communications

The global threat landscape is constantly evolving. Executing warfighting operations, managing and protecting homeland security, engaging in humanitarian missions and responding to natural disasters demands innovative technologies to provide greater efficiencies for collaborating with mission partners across all domains. The ICS-C2 enables seamless integration of communication devices over multiple networks, using advanced user technologies and/or legacy investments, and provides enhanced capability to engage critical personnel and drive mission success.

## Challenges for Interoperable communications solutions

<b>Migration to IP</b> Empowers a practical migration strategy from a legacy analog capability and eases the transition to IP communication	<b>Multi-domain collaboration</b> Designed to optimize a single platform to provide two electronic systems autonomously operating between two communication networks	<b>Disparate technology platforms</b> Solving the problem where different communications systems cannot communicate effectively with each other, negatively impacting operations	<b>Radio interoperability</b> Multitude of vendors, radio signals (digital/analog) and networks need to seamlessly scale and integrate communication users
<b>Secure/Non-secure environments</b> Enables the sharing of communications with varying security levels that previously required separate solutions	<b>Investment protection</b> Maintain the investment in legacy platforms vital to the operational process and ease the transition to IP over time in a phased approach	<b>Legacy equipment phase-out</b> Rolling out communications systems through phases avoids a costly approach of systems facing end-of-life	<b>Transition to enterprise systems</b> Mission independent, globally located organizations, additional bandwidth, routing and connectivity requirements

Layering onto the existing network, the Frequentis solution has the flexibility to integrate seamlessly with most legacy technologies and standards, preserving the value of existing investments and extending their utility. The solution gives US DoD a free choice of using COTS hardware rather than being locked into proprietary solutions. In doing so, acquisition and ongoing management costs are reduced and future options are kept open.

Today, typical industry solutions require a complete transformation to support IP legacy/hybrid networks. This is a cost many organizations cannot manage, especially when some of their legacy equipment is still current and functional.

The outcome is that some organizations need to operate on multiple systems to accomplish collaborative communications, and others are simply not able to implement advanced IP solutions.

Frequentis offers a solution that allows the integration of legacy telephony and IP radios in both a secure and non-secure environment. US DoD can migrate to newer technology in a way that protects their existing investment and adds newer technology at a cost that is lower than a completely new IP solution. Working with Frequentis allows for this to occur without the requirement for a total upgrade; with only new components such as the ICS-C2 solution, radios, phones, touch screens and headsets being changed.

# Zero Failure - Parallel Operating Systems

The Frequentis philosophy of zero tolerance for failures, is built on more than seven decades of rigorous engineering and domain expertise, leading to the development of the ICS-C2. These solutions have been tried and tested in military deployments around the globe. Even when networks are degraded, the use of intelligent redundancy for mission-critical communications ensures their viability under the toughest battlefield conditions. Organizations have the option of utilizing existing networks or COTS hardware to avoid being locked in to proprietary solutions. This reduces acquisition and ongoing management costs. By integration with existing networks, the initial legacy investments are protected and the useful life extended.



Flight operations



Land forces



Air marine operations



Homeland defense  
Border security



Drone operations



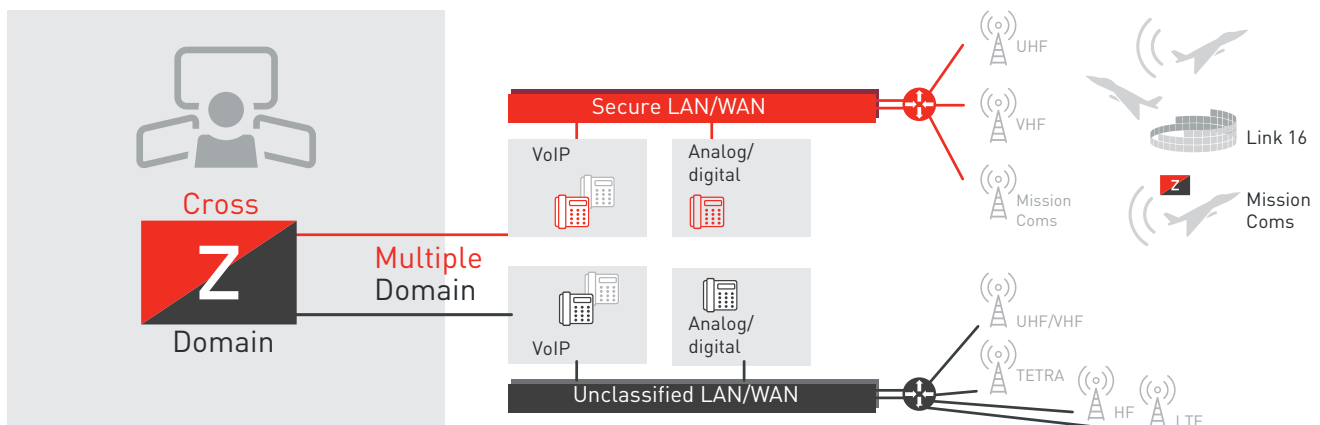
Expeditionary  
Forces – Command  
Center C2

## Cross domain, joint forces mission-critical communications

Integration of key communications and situational awareness assets regardless of their native form

Mission-critical secure (RED) and non-secure audio (BLACK) operational at a single controller position

Recording of all communications of voice and data for training and forensic analysis where required





# Bringing interoperability and flexibility to US DoD critical communications

Frequentis delivers leading-edge IP-based communications solutions combined with COTS hardware and software to access analog and digital communications locally within a control center and remotely in the field. The intuitive graphical user interface allows a single operator to access all radio types in use while maintaining secure communications as needed. US DoD, NATO and coalition forces and Homeland Security are able to communicate more efficiently in response to global crisis situations.

## Supporting mission-critical communications with integrated systems

### Navy MQ-25 program deploys the Frequentis ICS-C2 RED/BLACK solution

A dual domain radio capability for systems operators was required. Critical consideration was the ability of a system to take minimum space and have a single communications position, which allowed the operator to switch between secure and un-secure communications, rated at Secret EAL 4+, ability to cross-net mission radio frequencies, provide Radio Remote Control and give operational commanders access to Link-16 channels. The ICS-C2 RED/BLACK solution, a COTS product, was implemented to support this effort. Its TRL 9 production level was a major factor in the customer's choice.

### Link-16 ICS-C2 Solution for Secure Radio Communications for AOC's

Customer's Air Operations Centers required augmented access to the Link-16 secure radio communications network. The Link-16 Ground Station Radio has limited radio channel access. The ICS-C2 system provided the customer with expanded access to the radio channels allowing for additional AOC personnel to monitor and communicate through the Link-16 Radio communications system. The unique capability to channelize radio communications and distribute this access over a network to multiple operators demonstrates Frequentis' leadership in distributive radio technologies.

### Air Defense program deploys ICS-C2 System for country-wide remote radio system

Customer equipped a country-wide radio air defense system with our latest 5thGen technology in support of the Air Operational Control Center (AOC) demands for controllers to transcend across legacy and IP platforms. The ADS supports CONOPS requiring VoIP, RoIP for UHF, VHF, HF, SATCOM, LMRs and LTE following ED-137 standards to deliver communication Quality of Service (QoS). This includes legacy interfaces i.e., PBX, radio, local battery along with conferencing, recording, intercom and mass notification equipment.

Certifications: IA accredited, Cyber Net-worthiness, ISO 9001:2015, MIL-STD-461E, MIL-STD-810F, DEF-STD-00-250, MIL-STD-464A, MIL-STD-3009 Class B, MIL-S-901D, MIL-STD-167/1, MIL-STD-454, DEF-STD-00-56



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