



# Integrated Communications Systems for Command and Control (ICS – C<sup>2</sup>)

Integrate legacy and VoIP communications

Connect via any radio

Preserve your current investment

Defense

**FREQUENTIS**  
FOR A SAFER WORLD

# Integrated digital collaboration

Communications are becoming digital, everything over IP and everything interconnected. This poses a dilemma for many military and civilian command and control center operators as they currently do not have a collaborative platform to integrate different types of communications. Today there are a mix of analog, hybrid and voice-over-IP (VoIP) radios in use. Based on Frequentis expertise, around 80% of the radios currently in use are legacy analog, with the remaining 20% split between hybrid or pure VoIP.

## Challenges for Integrated Communications Systems

### Migration to VoIP

How to migrate in a step-wise fashion vs. a complete switch over

### Joint incident communications

Communication between civilian and military first responders

### Integration of different communications

Different platforms are required to support different communication systems.

### Collaboration with different radios

Users have analog and digital radios that can't communicate via the same platform systems.

### Secure/Unsecure environments

Mission-critical secure (RED) and clear audio (BLACK) require separate solutions

### Investment protection

Migration to VoIP means losing investment in analog solutions

### Legacy equipment phase out

Many of today's systems are facing an end-of-life situation

### Hybrid solution

Migration to VoIP requires a discontinuance of use of analog radios

Layering onto the existing network, the Frequentis solution has the flexibility to integrate seamlessly with any legacy technology and standards, preserving the value of these investments and extending their utility. The solution gives both military and homeland security organizations a free choice of using COTS hardware rather than locking them into proprietary stacks. In doing so, it reduces acquisition and ongoing management costs, and keeps future options open.

The industry solutions today require a complete overhaul to a new system in order to support VoIP or a combined analog and VoIP solution. This is a cost many organizations cannot manage, especially when some of their current equipment is still quite functional. The

outcome is that some organizations need to use multiple systems to accomplish collaborative communications, and others are simply not able to implement advanced VoIP solutions.

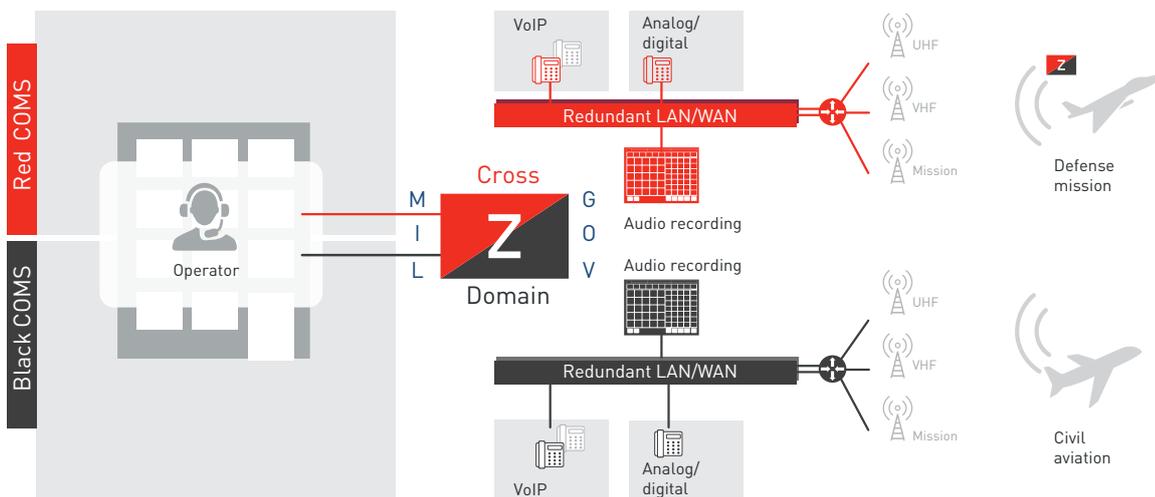
Frequentis offers a solution that allows the integration of legacy analog and VoIP radios in both a secure and unsecure environment. Organizations can migrate to newer technology in a fashion that protects their existing investments and adds newer technology at a cost that is lower than a completely new VoIP 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.

# Field proven zero failure tolerance solution

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 the ICS- C<sup>2</sup>. 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 stacks. This reduces acquisition and ongoing management costs. By integration with existing networks, the initial legacy investments are protected and the useful life extended.

## Cross domain, joint forces mission-critical communications

<p><b>Integration of key communications and situational awareness assets regardless of their native form.</b></p>	<p><b>Mission-critical classified (RED) and unclassified clear audio (BLACK) require separate solutions.</b></p>	<p><b>Recording of all communications for future analysis when required.</b></p>
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# Bringing interoperability and flexibility to military 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 centre 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. Homeland Defense (US Military, NATO and coalition forces abroad), Homeland Security and air traffic management organizations are able to communicate more efficiently when timing becomes critical.

## Supporting mission-critical communications with integrated systems

**Role-based controller working positions utilize the latest human machine interface structures to allow for cross-domain communications.**

The ICS-C<sup>2</sup> Controller Working Position (CWP) provides integrated voice communications to interconnect operators, radios and telephony for internal and external audio conferencing with any available resource.

The graphical user interface running on the operator's touch screen permits the selection and control of all communications resources connected to the system.

**The ICS-C<sup>2</sup> streamlines the operator's task in situations requiring the support of secure and unsecure communications.**

Via the use of dual LAN interfaces, mission-critical secure (RED) and/or clear audio (BLACK) communications always reach their destination with a single interface for the operator.

Audio processing is EAL/ Tempest approved for advanced communications in multi-level security enclave environments.

**Software-defined systems bring together key situational awareness assets regardless of their native form for one integrated voice and data network.**

CONOPS supported for VoIP, IP-radio, UHF, VHF, HF and SATCOM. A SIP-based, radio IP gateway enables radio integration using ED-137 for direct connection interfaces to legacy audio (PSTN and PBX), push-to-talk (PTT), digital and trunked radios (PRI ISDN, T1, E1), local battery (FX0, FXS) public address systems, monitor speakers and intercoms.

The solution is fully certified for DOD and the DHS.



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