Commitment to ATM communications

Frequentis has a long history of delivering communication solutions for Air Traffic Management. Starting in 1948 with the first system, Frequentis has become the world market leader in ATM voice communication. We believe in good engineering, quality, and trust, therefore it is our passion to build the best solutions available on the market. Customers trust our solution in more than 80 countries across the globe. We care for dialogue with our customers, take on new challenges together, and bring safety-critical communication forward into a safer future.

BECAUSE WE CARE - FOR A SAFER WORLD

VCX-IP integrated Voice & Data Network Solution

Do you want to integrate IP-, TDM-, and satellite-WAN into one network solution? VCX-IP provides a network solution that abstracts the physical infrastructure of your wide area network by providing reliability based on WAN redundancy compatible with all your legacy equipment. Furthermore, VCX-IP reduces operational costs through voice compression and call aggregation.

Pioneering the radio networking market
Frequentis pioneers country-wide radio network solutions specific to ATM. Starting with analogue to digital gateways, the integrated VOX network solution for voice and data was rolled out world-wide based on TDM-technology. In 2008 Frequentis delivered the first VoIP-based network solution shaping the EUROCAE ED-137 standard.

75 Million operational hours
Our customers have successfully provided more than 75 million hours of safe air travel powered by VCX network solutions around the clock from New Zealand to Mexico. The largest deployments integrate hundreds of radio, phone and data services of more than 160 remote sites with multiple centres.

Do you have legacy and IP ATC communications infrastructure to integrate in one network solution? You have invested billions in your ATM infrastructure. New investments consider only state-of-the-art IP equipment. VCX-IP protects your investment by integrating legacy and ATC-specific gateway services at the edge of the infrastructure. This allows you to operate legacy, ICAO and EUROCAE compliant IP ATC communication on the same infrastructure.

Are you interested in migrating in a controlled way to IP? Migration to IP is a general trend in telecommunication networking. This is driven by the need for cost reduction, as bandwidth in IP networks is generally cheaper than in digital or analogue networks. Actual operational use cases need to be considered specifically for Air/Ground communication. The non-deterministic delay variations of IP connectivity is a challenge for coverage operation and radio coupling.

Frequentis actively contributes to the EUROCAE Working Group 67. This standardisation committee analyses Air/Ground and Ground/Ground ATM voice requirements and defines ED-137, the Voice over IP standard for ATM systems. Frequentis sets standards!
VCX-IP leads the ATM network market

DESIGNED FOR SAFETY

The integrated multi-level redundancy concept provides physical equipment, intra-site, and operational network-wide redundancy. Reliable communication is achieved by integrating priority-based routing and admission control over multiple wide area networks. Providing separate processing units for operational and administrative tasks ensures safe operational communication while monitoring and reconfiguring the equipment.

HIGHEST AVAILABILITY

99.999999% service availability where required

Highest availability is achieved by the flexible VCX-IP multi-level redundancy concept that can be tailored to your safety needs. The gateways come in a fully redundant hardware configuration, with duplicated processing units as well as power supplies. Radio services can be operated on stacked VCX-IP gateways in main/standby mode. This integration into a single solution allows for network-wide contingency scenarios.

BEST PERFORMING RADIO NETWORKING

Bi-directional dynamic delay compensation

Time-synchronised voice in CLIMAX and radio coverage operations is fundamental to operational Air/Ground communication. Continuous network delay measurements for every channel leg enable VCX to ensure echo free voice communication.

TAILORED TO ATM

VCX is the best performing radio networking solution, providing bi-directional dynamic delay compensation over multiple WAN technologies. Frequentis delivers future-proof ATM solutions by actively contributing to the international Voice over IP in ATM standardisation committee. The solution is designed for Air Traffic Management, allowing a seamless migration and extension of it with on-going operations.

REDUCES TOTAL COSTS

VCX protects your investments by providing legacy technology gateways, such as low-speed data, local battery, MFC, and ATS-QSIG to IP. Operational costs are saved through voice compression, call aggregation mechanisms, and flexible routing that considers service type and priorities. Despite the international trend of shortened IT life cycles, we offer ten years of lifecycle support.

PROTECTS YOUR INVESTMENT

47% operating cost reduction

The VCX network solution offers a range of legacy protocols and interfaces, especially for low-speed data services that are still used in Air Traffic Management. VCX provides interoperability of those legacy interfaces with IP equipment; combined with advanced call aggregation and voice compression, customers realised 47% cost reduction within the first two years.
This early adopter implemented a TDM-based voice & data VCX network over a decade ago. Currently, this customer is using the step-by-step migration capabilities of the VCX network to IP infrastructure. In several phases, the existing solution is enhanced by the latest VCX-IP release. The VCX-IP is designed to incorporate existing TDM infrastructure with state-of-the-art IP networks. Thus, the VCX network solution provides TDM- and IP-wide-area network redundancy transparent to all legacy applications.

One of our customers integrated a nationwide data and voice network based on our VCX network solution. It includes 31 geographical sites with more than 70 VCX shelves. The advanced network routing with integrated VSAT fall-back WAN provides the capabilities to realise contingency scenarios: one centre takes over operation from another. The solution allows them to keep the air space open at all times, even during a major natural disaster. Recently the customer upgraded the initial TDM-based VCX network to the latest IP solution with a special focus on bandwidth savings. The delivered G.729 voice compression reduces their payload bandwidth to 8kbit/s.

This customer is determined to implement the world’s most advanced all-IP Air Traffic Management infrastructure. Therefore, they chose Frequentis to deliver the VCX network solution. It provides transparent access for IP VCSs, IP radios, IP telephones, and IP radars to three different wide-area networks: the legacy TDM-based WAN, an upgraded VSAT-WAN, and a newly deployed IP-WAN. VCX delivers best radio networking performance by means of bi-directional dynamic delay compensation.

Following one of the international telecommunication industry trends, this customer replaced their analogue system for data, Ground/Ground and Air/Ground communication with an IP-based system. The customer has chosen Frequentis VCX-IP as it allows safe migration with no impact on their legacy systems and operations. Frequentis equipped all air traffic control sites – ACCs, APPs, and towers – with the VCX network solution and integrated all voice systems to ensure fail-safe communication over IP networks. With this very innovative approach our customer positioned himself as a technological trendsetter.