X10
Welcome to the future of IT voice communications

Innovative. Evergreen. Secure.

Air Traffic Management

FREQUENTIS
FOR A SAFER WORLD

Challenges in voice communications

Reliable communication on a 24/7 basis is a mission-critical safety issue for any ANSP. As it is often the last available means of communication, voice is of the utmost importance in communicating with pilots and guiding them safely – both in the airspace and to and from the airport. ANSPs need to rethink their voice communications approach to guarantee business continuity in a world of IT software services. But the task doesn't stop there.

How flexible is your voice communications set-up?

- Can you easily increase or decrease system capacity?

- Are you prepared for hardware obsolescence, increased security demands or changes in the way your voice communications are operated?

- Is your system capable of adapting rapidly to virtual centres and remote towers, collaborative ATM working and any contingency solutions?

- Does your system configuration enable you to adapt your HMI layout to meet as-yet-unknown challenges?

Answering today's and tomorrow's challenges

Frequentis VCS3020X Release 10, or X10 for short, provides the right answers for your ATC operations. It all starts with the superior handling of audio streams. X10 is the only system that permanently runs a duplicated parallel audio stream for every air/ground connection to guarantee uninterrupted audio. This means that switch-over time no longer exists.

Ease of use

Frequentis' voice communication abilities are amongst the industry's best. We used them to develop the most efficient, safest, most flexible and most user-friendly human machine interface on the market. Unlike other solutions X10 was built by operators for operators.

Ease of management

The use of standardised IT systems means administrators can easily learn operational concepts and avoid long and complicated training programs. Fast and dynamic capacity adaptations enable operational changes such as scaling up or down to happen in real time, and help guarantee continuous safe operations.

Highest safety levels

The world's largest IT systems run with zero downtime on the same software technologies that we use, providing the assurance of continuous operability. The distributed, micro-services-based system architecture enables the virtualisation of services, providing sufficient resilience and redundancy to meet any ANSP safety requirements.

Business continuity assured

Whether you are facing a legacy system transition or you already have our new system in place and need to execute operational changes – X10 is the right answer. Unlike with other systems, updates to our system will never impact day to day operations. Thus, the systems helps you avoid safety risks and loss of revenue associated with downtime.

A perfect fit to the ANSP's IT architecture

Built on security

X10 comes with a fully integrated security concept that fits into any ANSP IT security architecture. Applying a layered model – with domain security for all hosts and services in the system – that is fully flexible and adaptable to the security policies of the ANSP, means that the VCS is no longer an isolated system for which security is just an afterthought.

Part of the system is the integrated identity management, which automatically authenticates all users and services within the system, as well as across different locations. This fully secures the system against external attackers, while the logging of break-in attempts or even anomaly detection will alert the organisation to attempted attacks.

X10 thus goes beyond ordinary firewalling and offers a far superior security approach than most of the existing voice communications solutions.

Future proofing voice communications

The aviation world is changing fast and this has a clear impact on the ATM world. There are a number of factors that impact the way we work and the management of ATM processes both today and in the future: the European ATM master plan, the FAA's NextGen plans, the shift towards a virtual centre structure or remote tower operations, collaborative ATM working, and contingency solutions, to name a few.

At the same time the airport set-up is undergoing fundamental changes which will also impact the way ANSPs operate. New forms of flexibility and integration with other airport systems will therefore be required.

These new requirements and the move to a new way of working in the ATM world necessitate a far-reaching agility in the way we manage our operations, whether centralised or distributed.

This is where Frequentis Evergreen® system life cycle comes in. Evergreen® unleashes the value of large-scale IT software update and deployment processes, keeping the system and the software up to date throughout the whole lifecycle. This means that Frequentis maintains and optimises regular product updates with security updates, thereby assuring best-in-class security protection throughout the lifecycle.

Fully compliant voice communications

X10 is fully compliant to EUROCAE ED-137 and all current and anticipated future virtual center ATM operation requirements, and it supports the SESAR-driven separation of ANSP and ADSP services.
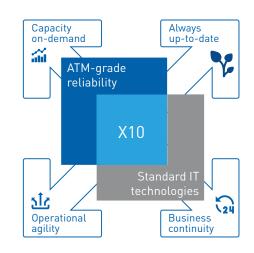
Users in focus
Fully flexible configuration of user interface and unique context sensitive interaction – fast, flexible and intuitive.

Minimal WAN bandwidth usage
Precise traffic load predictability independent of the operational scenario at any system scale needed.

Full integration of all ATM systems
"Orchestrating the skies" using the truly open MosaiX software framework

Capacity on-demand

Always up-to-date

ATM-grade reliability

X10

Standard IT technologies

Operational agility

Business continuity

Evergreen® Life Cycle
Escaping the technology trap and supporting the security lifecycle

Virtual Centre
Any controller can use any frequency from any location at any time – separating the control room, the data centre and the radio infrastructure

Duplicated and parallel running audio – seamless, uninterrupted air-ground communication

Frequentis makes the difference

Frequentis has a long history of customer-centric design. We have long been at the forefront of innovative ATM solutions with the introduction of new methods for the ATM community and the development of our own products. The introduction of standard IT technologies to the ATM domain is no different. These technologies were developed for mass scale data centre use and have now been used by Frequentis to develop our ATM-grade true IT-VCS. As frontrunner in the adoption of this technology, Frequentis again demonstrates our leading role in voice communications. Frequentis is the first to adopt a microservices architecture in this context, thus enabling easy integration with any open digital ATM platform – such as our own MosaiX – and enabling easy application integration with Frequentis applications and with 3rd party applications.

Selected VCS3020X references

Eurocontrol MUAC/ DSNA, FABEC*

Deployment of next-gen VCS for cross-border control room collaboration; will ultimately support 500+ controller working positions and 600+ radio channels. The VoIP-based system is ED-137-compliant, stable and easy to use. Through seamless re-sectorisation, with automated handover of roles and frequencies, the system empowers ANSPs to reassign sectors to less busy units at peak traffic times, and to handle aircraft crossing partner airspace without handing over responsibility.

Austrocontrol, Austria

Deploying X10 as the lead VCS. The system will be deployed into Austro Control's own IT infrastructure and will comprise 70 radio locations with 1100 radios. VoIP based ED137C Frequency Service with managed access to the radio infrastructure will be used nationwide and in a double data centre configuration. Frequentis Any to Any Service Concept – usage of the same redundant system resources from several operative units at the same time – is part of the contract.

Ports of Jersey, Jersey

Integrating three VCS systems in Jersey, supporting main, contingency and emergency operation systems. The project will ensure that Ports of Jersey can continue to provide resilient and essential Air Traffic Services whilst adopting digital voice technologies that are being rolled out across the global ATC networks. Ports of Jersey also operates a Frequentis digital tower contingency system.

*functional airspace block Europe Central

The Frequentis VCS X10 had its world premiere at the World ATM Congress in 2021.
Global market introduction will be staggered and availability in specific countries may vary.

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