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COVID-19 compels aviation industry to speed up the modernisation of the ATM system and prioritise business continuity

Frequentis emphasises benefit of SESAR virtual centre concept during pandemic

Many flights across the world remain grounded due to COVID-19, however, repatriation flights and cargo flights require the airspace to remain open. There have also been cases of interrupted air traffic control (ATC) services due to suspected COVID cases in air traffic control centres. Today's operational ATC concept does not allow other sectors to immediately take-over operations, if area control centres (ACCs) are taken out of service. This calls for a modernisation of the ATM system, building on virtualised ATC centres for ACCs and tower, with built-in business continuity, beyond national or regional borders.

In Europe, Frequentis is part of the efforts led by the SESAR (Single European Sky ATM Research) Joint Undertaking to drive the technical and operational implementation of the Virtual Centre concept. By geographically decoupling air traffic management (ATM) services from location, Virtual Centres increase geographic agility, capacity and cost-efficiency, while enabling better contingency planning. This would allow air traffic control operations to be carried out at another location, removing the need for any suspension of ATC operations.

"Business continuity in ATC is essential for the economy, both now, in times of the crisis, and during the recovery.", states Hannu Juurakko, Vice President ATM Civil and Chairman of the ATM Executive Team. "We must look more closely at the long-term challenges ahead of us and jointly implement solutions which enable a resilient, sustainable air transport system, robust enough to withstand potential future crises. Flexible use of controller workspaces and solutions that offer geographical agility, built on virtual data centres are concepts we can already provide today."

The principles of the virtual centre concept are what make remote digital towers possible. The virtualisation of tower ATC services is already well advanced in the industry and the number of implementations from around the world are continuously growing. Using virtualisation, remote digital towers allow ATC services to be provided away from the airport in bespoke facilities, instead of airport towers. It's the geographic agility which makes the digital tower interesting. Instead of being bound to one location, a remote tower control centre serves as the permanent back-up facility, both during times of low traffic and when the regular ATC tower is out of service. But what do we still need to allow full cross-border collaboration at these digital tower facilities?

Allowing cross-border collaboration

A more harmonised concept of operations (CONOPS) is essential to allow properly trained controllers to manage a different sector of airspace. There also needs to be a more networked approach to the way ATM systems are connected, enabling safe and secure data exchange, even across national borders. It also requires a joint effort by ANSPs and policy makers to ensure the proper legislation is in place to enable such an operational concept. Virtualisation of ATC systems ensures the resilience of ATC services, beyond the operational measures that protect the health and safety of controllers. Using virtualisation, air traffic controllers are no longer bound to a physical control room. They can work from any location, serving any airspace. Finally, the solutions of the future need to be based on resilient, cloud-based architectures, providing protection against cyber threats.

At the end of 2019, Frequentis hosted the SESAR Virtual Centre Executive Day in Vienna. European experts witnessed a live demonstration conducted by seven Air Navigation Service Providers, successfully transferring airspace and flights between ANSPs and showcasing the benefits that full delegation and optimisation of sectors across Europe can provide.

The Frequentis VCS3020X is the only ATC voice communication system available today, which fully supports the Virtual Centre concept, designed and developed by Frequentis in collaboration with SESAR partners. The Virtual Centre project has received funding from the SESAR Joint Undertaking under the European Union's Horizon 2020 research and innovation programme under grant agreement No 734141 and No 874463.

About FREQUENTIS

Frequentis, headquartered in Vienna, is an international supplier of communication and information systems for control centres with safety-critical tasks. Such 'control centre solutions' are developed and marketed by Frequentis in the business sectors Air Traffic Management (civil and military air traffic control, air defence) and Public Safety & Transport (police, fire brigade, ambulance services, shipping, railways). As a global player, Frequentis operates a worldwide network of branches, subsidiaries and local representatives in more than 50 countries.

Products and solutions from Frequentis can be found in over 30,000 operator working positions and in approximately 140 countries. Founded in 1947, Frequentis considers itself to be the global market leader in voice communication systems

for air traffic control with a market share of around 30%. In addition, the Frequentis Group's AIM (aeronautical information management) and AMHS (aeronautical message handling) systems, as well as GSM-R systems for Public Transport are industry leading global solutions.

The shares of Frequentis AG are traded on the Vienna and Frankfurt Stock Exchange under the ticker symbol FQT (ISIN: ATFREQUENT09). In 2019, the Frequentis Group had about 1,850 employees worldwide and generated revenues of EUR 303.6 million and EBIT of EUR 17.2 million.

For more information, please visit www.frequentis.com

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