MAKING AIR TRAVEL SAFER

There may be new challenges for ATC, but safety and security remain the focus for innovation

Marius Münstermann, vice president ATC, Rohde & Schwarz

Left: The CERTIUM VCS can be deployed in a quad-redundant decentralized architecture, divided into main and contingency environments, providing maximum resilience, and offering virtual center and remote tower capabilities

Right: CERTIUM by Rohde & Schwarz is an advanced ATC communications suite covering from the microphone to the antenna

Global health crises and natural disasters pose great challenges to ANSPs across the globe. Maintaining high levels of safety and security, especially in ATC is needed because passenger safety largely depends on the communication between air traffic controllers and pilots. Rohde & Schwarz understands that technology is imperative, but that being a strong partner is just as important.

Over the last decade, the company has gained the experience necessary to undertake a complex nationwide program, with more than 360 full VoIP systems installed as part of 230 projects in more than 60 countries.

The aviation market has always focused on safety and security. Over the years methods and technical capabilities have significantly improved and international standardization is being developed. It is fair to say that flight safety has never been better.

Safety in ATC continues to be critical with vulnerabilities to attacks through the internet. Attackers can target ATC systems with denial-of-service attacks. Rohde & Schwarz's developments follow a security-by-design philosophy to meet these challenges and the company invests a lot in this very vital element of any ATC solution.

While safety and availability without compromise are non-negotiable requirements, operations must remain efficient and flexible. These challenges are met for ATC controllers, engineers and decision makers by Rohde & Schwarz's CERTIUM advanced ATC communications suite, from the microphone to the antenna. CERTIUM offers a one-stop-shop for the full life cycle of a system: from design, manufacturing and system integration to project implementation and tailored maintenance services.

R&S Series5200
Addressing increasing security requirements and the ANSP's operational challenge to remain efficient when handling increasing flight volumes, Rohde & Schwarz also launched a next generation radio with a revolutionary security-by-design architecture that goes beyond existing market standards – the R&S Series5200.

The R&S Series5200 represents the next generation of VHF and UHF radios for ATC communication, increasing safety, security, and efficiency. It is an advanced and fully integrated network component, with a security-by-design architecture and extremely flexible network interfaces. This
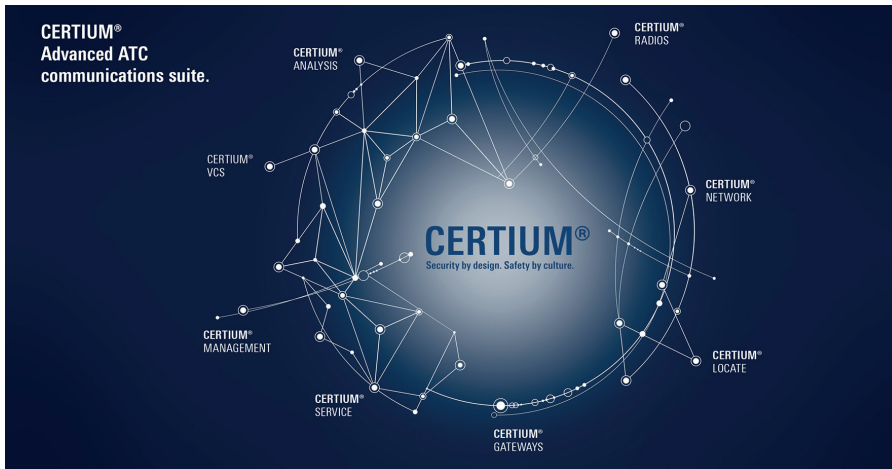
makes the radio future-proof. Subsequent system expansions will not require additional hardware thanks to the software defined radio concept.

The R&S Series5200 is the first radio for ATC designed to achieve the highest degree of security. Network separation, support of secure protocols and user authentication management are key features to safeguard customer infrastructures without using additional external elements. The R&S Series5200 ensures voice and data communications in the uncompromised quality you would expect from a Rohde & Schwarz radio.

CERTIUM VCS
With air traffic returning post-pandemic there is already a rise in air traffic density in some regions. Now is the time to focus on enhancements and modernization of ATC systems that are resilient, more agile and fit for the future. To meet these demanding requirements, Rohde & Schwarz designed CERTIUM to be future-proof.

CERTIUM voice communications system (VCS) can be deployed in a quad-redundant decentralized architecture, divided into main and contingency environments, providing maximum resilience and offering virtual

CERTIUM®
Advanced ATC
communications suite.

center capabilities with neighboring Area Control Centers (ACC) / Air Route Traffic Control Centers.

There is much more to CERTIUM than just communications. It also encompasses other technologies, like monitoring radio networks, helping to identify disturbances and interferences so they can be safely eliminated. Improved situational awareness is made possible by direction finder and location solutions, which report the precise position of a pilot when they are talking to air traffic controllers.

The CERTIUM VCS has been contracted for more than 280 systems in over 60 countries including airports / towers, ACCs, virtual centers, remote towers, offshore drilling sites, mobile towers, and shelters. As the CERTIUM VCS technology implements the ED-137 standard to the core of the system and not just to periphery components, it is the world's first and most widely deployed full IP VCS system. As deployed in Iceland and Ireland, CERTIUM VCS enables resource sharing and virtual ATC center operation, enabling the operation of both voice communications systems either independently in standalone mode or in joint-operation mode.

CERTIUM VCS is a flexible and cost-effective solution for all ATC voice communications needs. The system meets all of the established requirements for availability, reliability and safety as well as the growing need for dynamic ATC scenarios with network-based sharing and the distribution of operational resources.

Rohde & Schwarz takes turnkey responsibility and is a one-stop-shop for customers. Longevity is a fundamental quality feature of Rohde & Schwarz products. However, the high pace of innovation in modern communications technology means that products must be regularly updated and adapted to new technological developments. Rohde & Schwarz support customers by offering comprehensive services throughout all phases of the product lifecycle. ❖