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FREQUENTIS and SUNHILLO launch UAS-C to securely connect drone pilots and air traffic control (ATC)

Jointly developed unmanned aerial system connector (UAS-C) allows two-way voice and surveillance data exchange between drones and ATC

As the number of unmanned aerial vehicles (UAVs) or systems (UASs) used for civilian and military applications continue to grow so does the need for secure and reliable connectivity with manned aviation. Frequentis and Sunhillo have addressed the challenge of connecting the UAV pilot in command (PIC) with air traffic control (ATC) units by developing its UAS-C system. The UAS-C converts UAS position data into standard aviation formats and provides a secure virtual radio communication link to connect seamlessly to the existing ATC infrastructure.

High-quality surveillance information and voice communication are essential for a common air situation picture and shared situational awareness for ATC, UAV pilots and manned aviation. The primary concern when integrating civilian and military UAVs into the airspace is safe, secure and reliable communication between all airspace users in the same geographical region.

The surveillance of manned aviation is mainly based on primary and secondary radar technology, which cannot safely detect, identify and predict the position or future track of UAVs, while ATC communication currently relies entirely on onboard VHF/UHF radios, not available for many UAVs.

“The UAS-C coverts the UAVs onboard position data into standard aviation format (eg ASTERIX) for processing in any ATC unit or command centre. The data can then be visualised alongside other radar and ADS-B targets, ensuring a common air situation picture. The UAS-C also provides connection to any Frequentis voice switch infrastructure. the UAS-C automatically selects the correct radio frequency by the location of the UAS,” says Hannu Juurakko, Vice President ATM Civil.

UAS-C can be connected remotely via LTE or directly via a secure IP network connection. It supports all types of UAV operations flying beyond visual line of sight (BVLOS), including flying in or through controlled airspace, regardless of size, altitude or mission.

“UAVs have the potential to assist various military missions such as aerial surveillance or investigation. Allowing a direct connection between the UAV operator and Military ATC is vital for mission success.”, says Peter Skiczuk, Frequentis Vice President Defence.

UAS-C provides air traffic controllers and command centers with reliable and secure ground-based UAS pilot communication while the UAV pilot uses the same virtual frequency as manned aviation users, minimising the risk of safety infringements. Since the communication equipment is located on the ground, UAS-C does not relay information through the UAS vehicle radio equipment, reducing the overall weight of the UAS, increasing payload.

”A common air situation picture is key to the safety of both manned and unmanned aircraft. Pilots benefit from party line radio communications and shared situational awareness. The UAS-C also provides the pilot with a “see and avoid” display showing all aircraft, provided via ATC surveillance infrastructure, in the immediate area as well as sending the location of the UAV UAS to ATC or the local command centre.” says Doug Walczak UAS Business Development lead at Sunhillo Corporation.

About Sunhillo

Sunhillo is an award winning ISO9001: 2015 corporation located in West Berlin, NJ. For over 25 years Sunhillo has been a global leader in providing Surveillance and Flight Data distribution and conversion systems for Air Traffic Control to the FAA, Department of Defense, and ANSP’s worldwide. Sunhillo with Virginia Tech UAS test site (MAAP) has successfully completed NASA UAS Task Order 1, 2, and 4.

About FREQUENTIS

Frequentis is an international supplier of communication and information systems for control centres with safety-critical tasks. These control centre solutions are developed and distributed by Frequentis in the business segments Air Traffic Management (civil and military air traffic control, and air defence) and Public Safety & Transport (police, fire and rescue services, emergency medical services, vessel traffic and railways). Frequentis maintains a worldwide network of subsidiaries and local representatives in more than fifty countries. The company’s products and solutions are behind more than 25,000 operator positions in over 140 countries. With this extensive portfolio, Frequentis is the leading provider of voice communication systems… all making our world a safer place every day!

For more information, please visit www.frequentis.com

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