



Press Release

26th November 2021

Project RISE successfully increases automation of drone flight approvals and Air Traffic Control integration in non-segregated airspace

The UK Future Flight Challenge Consortium consisting of Dronecloud, Frequentis, Sky-Drones, Cranfield University and Skyports successfully completed Project RISE to help unlock the future of drone operations through consolidating UTM services. Field trials were successfully completed at Cranfield Airport in the UK in November 2021, demonstrating a working solution.

Integrations were developed between a Ground Control Station (GCS), an Uncrewed Traffic Management Service Provider (UTMSP) and an Air Traffic Control (ATC) interface to increase levels of automation of approvals and ATC in non-segregated airspace. It is delivered through Application Programming Interfaces (APIs), enabling future integrations with other drone manufacturers and UTM service providers, taking the drone industry a step closer towards unlocking beyond visual line of sight (BVLOS) flights at scale.

Project RISE brings together three independent layers of software to create an intelligent integrated system, with a complete workflow of drone operations from flight planning to in-flight to post-flight auditing. The systems work together to provide different interfaces to drone operators and air traffic controllers, seamlessly allowing both groups of users to have complete visibility of flight plans before flight, as well as a drone's location during flight in relation to approved parameters and controlled areas.

"It's fantastic to be able to interface and connect with ATC without having to be in constant, two-way voice communication. The Dronecloud software allows us to seamlessly connect as and when required. This not only streamlines the communication but reduces workload too," says Alastair Skitmore, Flight Operations Lead at Skyports.

"Through integrations between these systems, we can share automatically electronic ID, flight telemetry data, alerts and other communications. The increased safety and efficiency helps break down barriers to scale. At the same time, readying the software platforms towards participating in all UTM regulatory frameworks, such as the UK's Open Access UTM Framework and U-Space. Project RISE is a genuine step forward for the industry as a whole and brings us closer to integrating crewed and uncrewed traffic in controlled airspace, and in doing so, a step also towards unlocking the potential of scalable BVLOS

and autonomy. We're incredibly proud to have worked with such a strong team to deliver Project RISE," added Jan Domaradzki, CEO of Dronecloud.

"RISE is a considerable project showcasing the automated interaction between drone operators and ATC. It provides a technical scenario for future interaction and coordination in the airspaces above UK. To close the value chain between the clients of commercial drone operators and ATC, Frequentis provided the necessary UTM back-end technology (MosaiX SWIM) and the required tower application. The validation activities included strong involvement of user interface experts and ATCOs, ensuring its feasibility. We are pleased to contribute our proven solutions and experience to this UTM project," says Joachim Edel, Frequentis, New Business Development Manager.

Rather than creating a proprietary closed stack of UTM services within a single platform, RISE demonstrates an open approach to delivering a range of UTM services across multiple integrated platforms in a flexible and inclusive way. Integrations were delivered through open standard APIs, allowing various commercial drone operators, drone manufacturers and UTM service providers to connect through these integrations. Frequentis is using in-house expertise from various ATM, UTM, Public Safety and Transport domains to address the needs of all impacted stakeholders.

"Sky-Drones has focused on the Uncrewed Aerial System (UAS) hardware and software being used throughout project RISE. Our technology allows us to fly drones beyond visual line of sight from anywhere in the world, plan complex missions and record the flight data with comprehensive post-flight analytics," noted Kirill Shilov, Founder & CEO of Sky-Drones."

Cranfield University completed an analysis of radio link connectivity in UAS to highlight the factors which affect connectivity performance needed for BVLOS, together with mitigation plans to improve it. Dr Saba Al-Rubaye, Reader in Autonomous and Connected Systems at Cranfield University, says "Cranfield is leading hardware system integration to address current and future challenge of UAS communications. We were delighted to support Project RISE in the field trials by providing Airport facilities and conducting analysis of different communication scenarios to guarantee high quality of services (QoS) for drone safety."

Field trials at Cranfield Airport demonstrate a live/working airport environment use-case but potential applications go far beyond. Project RISE is a step towards complete integration of UAS and traditional air traffic anywhere, and in doing so, moving towards fully scalable BVLOS operations. Consortium members are keen to build on the project success and keep innovating towards this shared vision.

You can see the film and find out more about the project at <https://dronecloud.io/dclabs#projectrise>

Project RISE was funded by Innovate UK, through Phase 2 of the UK government's Future Flight Challenge.



About Dronecloud

Dronecloud is making unified airspace a reality by integrating drones, flight planning, UTM and U-Space Services into a scalable 'Enterprise Ready SaaS' solution. Dronecloud unlocks Beyond Visual Line of Sight, Real-Time Deconfliction, Digital Flight Approvals & Autonomy for complex drone operations. The system is built around centrally managed teams, quality assurance, safety and audit frameworks. Larger enterprises can setup and manage curated networks of sub-contractors.

Our clients range from national asset managers (such as Network Rail) to Construction & Engineering companies as well as growing drone operations looking to improve operational efficiency and connect with larger enterprises as sub-contractors.

Dronecloud is UTM and drone agnostic, driven by an open standards-based approach to collaboration with key industry partners to deliver maturity to our rapidly evolving industry.

With this approach and Dronecloud as the central core of the integrated U-Space, we aim to remove the separation of manned and unmanned airspace and pave the way for Last-Mile deliveries and drone taxi services in congested urban environments.

Recent UK Government funding through Innovate UK's Future Flight Challenge will help Dronecloud achieve its ambitions.

More information: <https://dronecloud.io/> or hello@dronecloud.io

About Sky-Drones

SKY-DRONES TECHNOLOGIES LTD creates professional full stack UAV avionics solutions (hardware and software) including flight control, ground control and communication systems as well as a cloud-based management platform. The company helps its global customers to build and operate drones for security and commercial applications. Sky-Drones has an outstanding background in research and development, as well as manufacturing and delivering products and solutions for the future UAV market.

More information: <http://sky-drones.com/>

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 35,000 operator working positions and in approximately 150 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 2020, the Frequentis Group had about 1,900 employees worldwide and generated revenues of EUR 299.4 million and EBIT of EUR 26.8 million.

For more information, please visit www.frequentis.com

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About Skyports

Skyports is a world-leading drone delivery services provider, committed to creating positive change by connecting people, businesses and communities to vital supplies and services, such as healthcare, maritime, logistics and e-commerce.

Skyports also designs, builds and operates take-off and landing infrastructure (vertiports) for air taxis, and partners with electric vertical take-off and landing passenger and cargo vehicle manufacturers around the world, to enable safe, sustainable and efficient flight operations within urban and suburban environments.

Headquartered in London, United Kingdom, Skyports has projects operating across multiple continents, including the Americas, EMEA, and APAC regions. Skyports investors include Deutsche Bahn Digital Ventures, Groupe ADP, Irelandia Aviation and Levitate Capital. Find out more at: www.skyports.net

About Cranfield University

As the UK's only exclusively postgraduate university, Cranfield's world-class expertise, large-scale facilities and unrivalled industry partnerships is creating leaders in technology and management globally. Cranfield's distinctive expertise is in our deep understanding of technology and how this work together to benefit the world. Find out more about Cranfield, our history, and our rankings and awards here (<https://www.cranfield.ac.uk/about/about>).

The project is led by Centre for Autonomous and Cyber-physical Systems, the center reputation for leading in the field of aerospace, space, and drone systems, their communication systems, and signal processing has been established through more than thirty years of research into this field. The center work in partnership with industrial partners to provide high quality training, research, development and consultancy to meet the challenges of these competitive markets. The center has an outstanding international reputation for the quality of our work and our capability of performing both theoretical and experimental studies. The center work covers academic provision and research. Research works span from fundamental research and development to single client contract research and development.

For more information, please visit

<https://www.cranfield.ac.uk/centres/centre-for-autonomous-and-cyberphysical-systems>

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