

LMT successfully conducts first cross-border drone flight on the mobile network

On September 2, 2020, LMT successfully completed the first-ever cross-border drone flight conducted entirely over the mobile network. The drone was flown from Latvia to Estonia without losing mobile network connectivity.

The cross-border flight was performed during the LAMPA Conversation Festival within the scope of a discussion on the future role of drones in society. A live video was streamed at the event demonstrating not only the drone's flight Beyond the Visual Line of Sight (BVLOS), but also its crossing of the Latvian-Estonian border, where it connected to the Estonian mobile network for the final leg of the journey.

This demonstration was a meaningful step toward understanding the technological capabilities of drones, expanding the scope of potential applications. One such use case in active development is linked to Rail Baltica, the international railway project spanning the Baltic states, who are considering 5G technologies for potential use in railway infrastructure. The ability to easily cross borders while maintaining connectivity would make it possible for drones to participate in railway safety measures by monitoring and maintaining tracks that are in border regions.

The flight was started in Latvia and ended in Estonia, with the multirotor drone traveling a total of 8km. The drone was equipped with two SIM cards – one from each country – and switched from one to the other mid-flight as it crossed the border. To accomplish the BVLOS flight, UgCS ground control software was used in combination with a custom-built command and control modem that was built in collaboration with SPH Engineering. The cross border demonstration proved the hypothesis that it is technically feasible to switch networks within a few milliseconds, and provided the confidence to continue with cross-border mobile network-based project development.

“Currently, the majority of drone solutions are based on WiFi connections or other frequencies provided for drone management. In contrast to the mobile network, those are limited in their range. If there's sufficient coverage in the air, the mobile network can ensure uninterrupted connectivity throughout the entirety of its flight, which significantly improves safety. LMT's strong network coverage makes drone flight and other 5G use case testing a possibility. As a result, LMT is able to significantly contribute to pushing forward the global understanding of what mobile networks are capable of.” - Ingmars Pukis, VP and Member of the Board of LMT

“CAA supports the development of a UAV system in Latvia. Collaboration among the public and private sectors is crucial for R&D to result in the creation of new services, particularly for those that are connected with higher risk, to maintain or even increase the level of flight safety. When conducting flights beyond the line of sight it is important to

avoid other objects both in the air and on the ground. An equally relevant topic is that of identification, which makes it possible to follow the trajectory of the flight and in some cases inform about potential surrounding threats. Through using a variety of risk-minimizing approaches it's been made possible to authorize drone flight, which offers a new technological solution for cross-border flights.” - Ilmārs Ozols, head of the UAV flight safety department at the Civil Aviation Agency of Latvia

This experiment was conducted within the scope of the Comp4Drones project, which aims to provide a framework of key enabling technologies for safe and autonomous drones.

LMT is also a participant in an R&D project under the GSMA and GUTMA joint drone working group. The working group brings together mobile operators, aviation industry participants, and UTM representatives to develop recommendations on how to incorporate drones into airspace and how to use the mobile network as a communication channel for aviation usage. The research will be compiled in an extensive whitepaper that will be made available by the end of 2020.

LMT has demonstrated various experiments regarding non-terrestrial mobile networks. In July of 2019, they set a record for the [highest noted mobile network coverage](#), at 85,000 feet in the air (26 km). In November of 2019, LMT became one of the first to demonstrate a [live remote drone flight BVLOS](#). LMT is a GUTMA member and member of the GSMA drone working group and has [published a case study on drone use for object recognition](#), among other projects.

Press contact

Elina Lidere

LMT Press secretary

elina.lidere@lmt.lv

+371 29248420

