



Unmanned Aerial Vehicle Vertical Applications' Trials Leveraging Advanced 5G Facilities

ISSUE HIGHLIGHTS

The fifth issue of the 5G!Drones newsletter presents the project activities during the period June - August 2020. This issue focuses on the latest 5G!Drones dissemination and communication activities, the deliverables that have been published as well as the general assembly meeting's details.

5G!Drones activities in numbers:

- Two Journal Papers
- Five Conference Papers
- One Podcast
- Two Presentations
- One Video
- One Committee Representation
- Two Articles
- One Feasibility Test
- Preparatory First Year Review Meeting

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DISSEMINATION AND COMMUNICATION ACTIVITIES

JOURNAL PAPERS

IFIP NETWORKING 2020 – WORKSHOP ON NETWORK SLICING 2020

The IFIP Networking 2020, with the network slicing workshop in which the 5G!Drones project had presented a journal paper entitled "Integration of U-space and 5GS for UAV services", took place on 22-25/06/20. You may read the paper online at 5G!Drones website: https://5gdrones.eu/wp-content/uploads/2020/05/Integration_of_U_space_and_5GS_for_UAV_services.pdf



IEEE COMMUNICATIONS STANDARDS MAGAZINE

A 5G!Drones paper entitled "On extending ETSI MEC to support LoRa for efficient IoT application deployment at the edge" was published in the IEEE Communications Standards Magazine (Volume 4, Issue 2, pages 57-63). You may read the paper at 5G!Drones website: <https://5gdrones.eu/wp-content/uploads/2020/06/MEC-LORA-paper.pdf>



CONFERENCE PAPERS

IEEE IWCMC

- IEEE IWCM 2020, in which the 5G!Drones project participated with an accepted conference paper entitled "Energy-aware Collision Avoidance stochastic Optimizer for a UAVs set" took place remotely during 15-19/06/2020. You may access the paper online at: <https://5gdrones.eu/wp-content/uploads/2020/05/Energy-aware-Collision-Avoidance-stochastic-Optimizer-for-a-UAVs-set.pdf>
- In the same event, IEEE IWCM 2020, the 5G!Drones project also participated with the conference paper entitled "UAV Communication Strategies in the Next Generation of Mobile Networks". You may access the paper online at <https://5gdrones.eu/wp-content/uploads/2020/05/UAV-Communication-Strategies-in-the-Next-Generation-of-Mobile-Networks.pdf>





IEEE CONFERENCE ON NETWORK SOFTWARIZATION

The 5G!Drones project participated in the IEEE Conference on Network Softwarization with the paper entitled "5G UASPP: 5G-based multi-provider UAV platform architecture". The conference took place virtually on 29 June - 3 July 2020. You may read the paper online at: <https://5gdrones.eu/wp-content/uploads/2020/05/Multi-provider.pdf>



IEEE INTERNATIONAL CONFERENCE ON COMMUNICATIONS

The IEEE International Conference on Communications took place virtually on 7-11/06/2020. In this Conference, the 5G!Drones project participated with the paper entitled "On 5G support of cross-border UAV operations." You may access the paper online at: <https://5gdrones.eu/wp-content/uploads/2020/05/Cross-border.pdf>



AIAI 2020

The 16th International Conference on Artificial Intelligence Applications and Innovations (AIA 2020) took place remotely on 5-7/06/2020. In this Conference, the 5G!Drones project participated with the conference paper entitled "A new approach to 5G and MEC integration" which had been accepted at the 5th Workshop on "5G - Putting Intelligence to the Network Edge" (5G-PINE 2020). You may access the paper online at: <https://5gdrones.eu/wp-content/uploads/2020/05/5G-MEC.pdf>



PODCAST

Gokul Srinivasan from robots.expert participated in the InterDrone podcast on 05/08/2020, representing the 5G!Drones project, where he had the chance to discuss and analyze topics about the UAS/UAM industry, robots.expert and the 5G!Drones project. The podcast video is available online at <https://interdrone.com/interdrone-podcast/episode-50-the-uas-vc-funding-model-may-be-broken-how-do-we-avoid-a-bubble-with-gokul-srinivasan/>



PRESENTATIONS

PX4 DEVELOPER SUMMIT 2020

Gokul Srinivasan from robots.expert had the opportunity to present "What does it take to fly the PX4 stack on a certified aircraft?" at the PX4 Developer Summit 2020 (6-7/07/20, virtual event) where the 5G!Drones project was also introduced to the PX4 community and industry professionals. The presentation is available online at: <https://www.youtube.com/watch?v=TfNapuzs5KQ&list=PLYy2pGCdhu7x1BFcPsLY72D6z3AUdZWf&index=8&t=0s>





PRINTOCENT WEBINAR SERIES 2020

Juha Hannula (Nokia), 5G!Drones partner, presented "5G Benefits for Unmanned Moving Objects" at PrintoCent Webinar Series 2020, 8 June 2020. More information available at: https://www.printocent.net/tapahtumat/1st_webinar_session/
Link to presentation available at: <https://youtu.be/Op2kVADx0WU>



COMMITTEE PARTICIPATION

Gokul Srinivasan, from our 5G!Drones partner robots.expert, participates in the ASTM International F38 (Unmanned Aircraft Systems) and F39 (Aircraft Systems) committees, contributing to standards and policies, while representing also the 5G!Drones project.



ARTICLES

CONNECTIVITY TECHNOLOGY BLOG

An article on Connectivity Technology blog features a recently published 5G!Drones paper (A Service-Based Architecture for enabling UAV enhanced Network Services, IEEE Network Magazine, Volume 34, Issue 4). The online article is available at: <https://www.connectivity.technology/2020/08/a-service-based-architecture-for.html?m=1>



The accepted paper is also available online at the 5G!Drones official website: https://5gdrones.eu/wp-content/uploads/2020/03/Enabling_UAV_based_enhanced_Network_Services.pdf



COMMERCIAL UAV NEWS - INTERVIEW

A 5G!Drones article-interview entitled "The EU-Funded 5G!Drones Research Project is Testing, Validating, and Defining KPIs for the Future of the Drone Industry" was published online by Danielle Gagne, Commercial UAV News Editorial Analyst, in June 2020. 5G!Drones team members from INVOLI, DroneRadar and, robots.expert have been interviewed on behalf of the project consortium. You may access and read the article online at Commercial UAV News official website at: <https://www.commercialuavnews.com/infrastructure/5g-drones-is-testing-kpi-s-for-the-drone-industry>



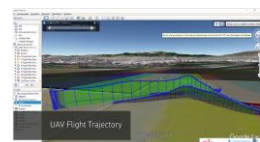
FEASIBILITY TESTS - VIDEO

In May 2020, NCSR team, 5G!Drones partner, performed the first feasibility flight of a drone piloting over 5G, i.e. transmitting the C2 (Communication and Control) channel over 5G.

The feasibility flight was performed using the 5GENESIS Athens 5G experimentation platform located at NCSR Demokritos campus.

The video of the feasibility flight was edited in June and is available at the 5G!Drones YouTube channel:

https://www.youtube.com/watch?v=GlyPzN_mi_4





5G-PPP ACTIVITIES

5TH EDITION OF THE EUROPEAN 5G ANNUAL JOURNAL

The 5th edition of the European 5G Annual Journal, in which the 5G!Drones project participates, is available online at: <https://5g-ppp.eu/annual-journal/> The phase 3 projects of the 5G-PPP (a) show the way for use cases in vertical industries such as transport, manufacturing, energy, and (b) deliver on Europe’s 5G trial strategy.

5G-PPP WHITE PAPER

A 5G-PPP white paper entitled “Business Validation in 5G-PPP vertical use cases”, which features 5G!Drones project, is available at the 5G-PPP website: https://5g-ppp.eu/wp-content/uploads/2020/06/5G_White_paper_Business-validation-v1.0a.pdf

5G-PPP NEWSFLASH ISSUES

The latest 5G-PPP Newsflash issues, prepared by the Full5G project and 5G-PPP, are available online at the 5G-PPP website:

- July 2020 issue: <https://5g-ppp.eu/newsflash-july-2020/>
- June 2020 issue: <https://5g-ppp.eu/newsflash-june-2020/>

5G-PPP NEWSLETTER ISSUES

The latest 5G-PPP Newsletter (June 2020), prepared by the Full5G project and 5G-PPP, is available online at the 5G-PPP website: <https://5g-ppp.eu/newsletter-20/>





DELIVERABLES

Four deliverables have been submitted in May 2020, marking the end of year 1 period:

D1.4 Report on UAV business and regulatory ecosystem and the role of 5G: This deliverable contains a thorough analysis of the UAV market, business and legal ecosystem within the newly formed 5G environment. You may access it online at https://5gdrones.eu/wp-content/uploads/2020/06/D1.4-Report-on-UAV-business-and-regulatory-ecosystem-and-the-role-of-5G_v3.pdf

D1.5 Description of the 5G trial facilities and use case mapping: This deliverable is an updated report that contains a detailed description of the supported features and identified requirements of 5G test sites to deploy 5G!Drones, as well as a mapping of use case components to facilities. You may access it online at https://5gdrones.eu/wp-content/uploads/2020/06/D1_5_Description-of-the-5G-trial-facilities-and-use-case-mapping-v2.pdf

D2.1 Initial definition of the trial controller architecture, mechanisms, and APIs: This deliverable contains the initial detailed architecture of the trial controller including the trial execution and management of API definitions. The D2.1 is available online at https://5gdrones.eu/wp-content/uploads/2020/06/D2.1-Initial-definition-of-the-trial-controller-architecture-mechanisms-and-APIs_v1.1.pdf

D6.2 Annual report, year 1: This is an annual report describing the state of the project and administrative details for year 1. You may access D6.2 at <https://5gdrones.eu/wp-content/uploads/2020/06/D6.2-Annual-report-year-1-V5.pdf>

UPCOMING 5G!DRONES DELIVERABLES

The upcoming 5G!Drones deliverables for the period of September 2020 - November 2020 are:

D3.1 Report on Infrastructure-level enablers for 5G!Drones: A report regarding the design and implementation on enabling mechanisms for 5G!DRONES at the infrastructure level.

D5.3 Report on Contribution to Standardisation and International fora - 1st Version: This deliverable is based on the standardization activities taking part during the first half of the project.

D6.3 Mid-term review report: A report containing an assessment of the project's results and work progress at mid-term of the project.

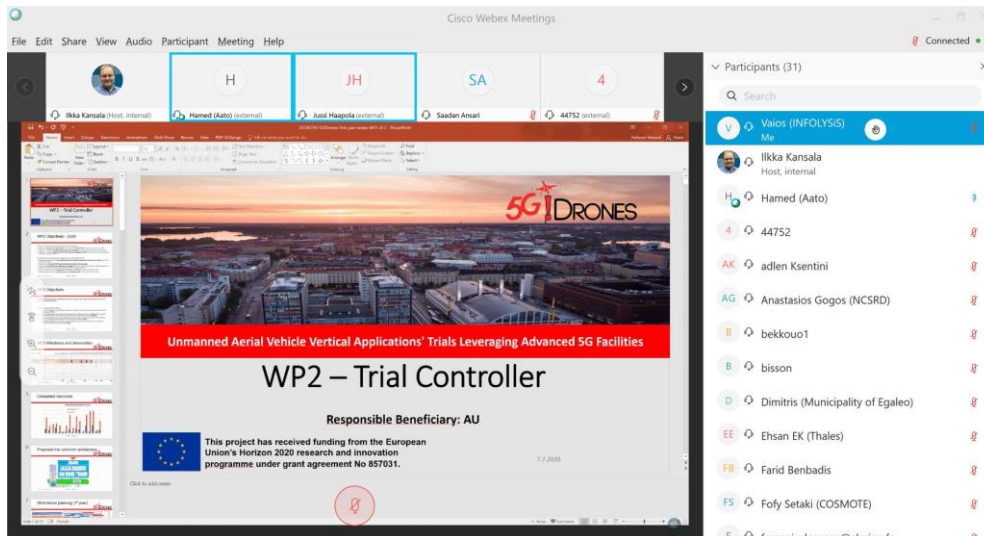
D6.7 Information on cumulative expenditure incurred: A project report based on information concerning cumulative expenditures for the first 18-month period of the project.

If you wish to learn more on the 5G!Drones deliverables you may visit the official website on the corresponding Deliverables page: <https://5gdrones.eu/deliverables/>



PREPARATORY FIRST YEAR REVIEW GA MEETING

5G!Drones partners participated in an online virtual meeting focused on the prompt preparation for the first year review of the project (remote project review took place on Thursday, 9 July 2020). This preparatory virtual meeting took place on 8 July 2020 and all partners attended. In this meeting, presentations, discussions, and Q&A preparatory sessions took place based on the project's first year activities, achievements, and results.



The 5th GA Meeting will take place virtually, due to the ongoing coronavirus restrictions, in October 2020.



Communication Channels



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