



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

ISSUE HIGHLIGHTS

The 13th issue of the 5G!Drones newsletter presents the project activities during the period June - August 2022. This issue focuses on the latest 5G!Drones dissemination and communication activities, including one demo day, one showcasing event, the participation of the project in the EuCNC 2022, and the upcoming deliverables.

5G!Drones activities in numbers:

- 4 Journal - Conference Papers
- 5 Presentations
- 1 Demo Day
- 2 Trials
- 5 5GPPP Activities
- 5 Upcoming Deliverables
- EuCNC & 6G Summit 5G!Drones Booth



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OULUN YLIOPISTO

THALES



INVOLI

Hepta



NOKIA



AIRBUS





DISSEMINATION AND COMMUNICATION ACTIVITIES

JOURNAL AND CONFERENCE PAPERS

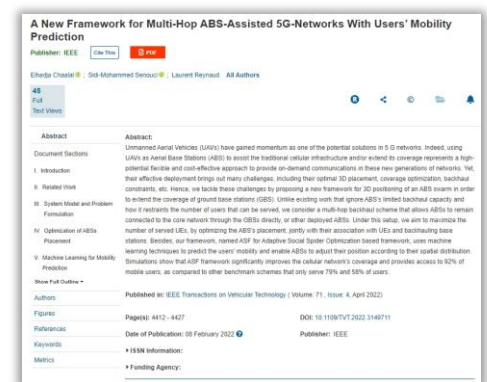
The 5G!Drones conference paper entitled "Application of mobile networks (5G and beyond) in precision agriculture" was accepted in the 5G-PINE workshop in the context of AIAI 2022 conference (17-20 June 2022). You may learn more about the event here:

<https://www.5g-essence-h2020.eu/Contact/5GPine.aspx>



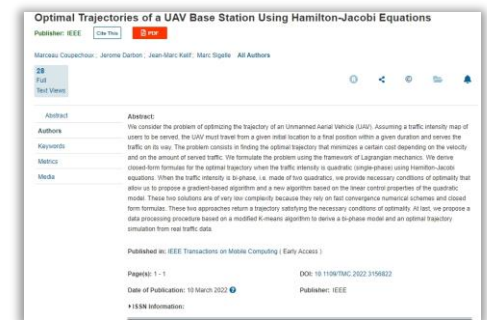
The 5G!Drones journal paper entitled "A New Framework for Multi-Hop ABS-Assisted 5G-Networks With Users' Mobility Prediction" was accepted in IEEE Transactions on Vehicular Technology magazine. You may learn more information here:

<https://ieeexplore.ieee.org/abstract/document/9707619>



The 5G!Drones journal paper entitled "Optimal Trajectories of a UAV Base Station Using Hamilton-Jacobi Equations" was accepted in the IEEE Transactions on Mobile Computing magazine. You may access the paper here:

<https://ieeexplore.ieee.org/document/9732520>



5G!Drones conference paper by Mohamed Mekki, Nassima Toumi, Adlen Ksentini, 5G!Drones partners from EURECOM, entitled "Benchmarking on Microservices Configurations and the Impact on the Performance in Cloud Native Environments", was accepted at LCN 2022, during the 47th Annual IEEE Conference on Local Computer Networks, Edmonton, Canada, 26-28 September 2022. You may learn more here:

<https://zenodo.org/record/6907619>





PRESENTATIONS

Ilkka Käsälä, from Nokia, 5G!Drones partner, did a presentation regarding the “Printed Electronics Ecosystem for Future Wireless Networks” during the Session 4B, Discovering extreme antennas (L10), of the 7th PrintoCent Industry Seminar - PRINSE’22 (8 June 2022). During the presentation 5G!Drones project was also mentioned. You may learn more about the event here: <https://www.printocent.net/tapahtumat/prinse22-printocent-industry-seminar>



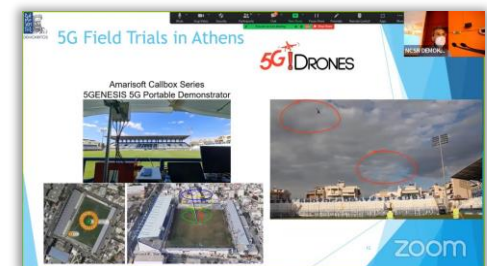
5G!Drones partner, Tomaszewski Lechosław, from Orange Poland, presented the paper “Application of Mobile Networks (5G and Beyond) in Precision Agriculture” on 17th of June 2022 at AIAI 2022/5G-PINE session 14. More information available at <https://ifipai.org/2022/program/> and https://link.springer.com/chapter/10.1007/978-3-031-08341-9_7.



5G!Drones partner Gokul Srinivasan (robots.expert) participated in the Interpol Drone Expert summit in Oslo and presented 5G!Drones and its upcoming trials. You may learn more about the event here: <https://www.interpol.int/News-and-Events/News/2022/INTERPOL-convenes-global-summit-on-the-use-of-drones>



Dr. Harilaos Koumaras from NCSR "DEMOKRITOS", 5G!Drones partner, participated at the NCSR 57th Summer School on 12 July 2022, presenting 5G Programmability and discussing the findings and the lessons learnt from 5G!Drones project. You may learn more about the NCSR Summer School here: <http://summerschool.demokritos.gr/>



Dr. Harilaos Koumaras (NCSR "DEMOKRITOS"), 5G!Drones partner, participated at 12th Infocom Mobile Connected “Smartverse: Pushing the boundaries of connectivity”, on 12 July 2022, discussing the 5G openness aspects and programmability findings of the 5G!Drones project.

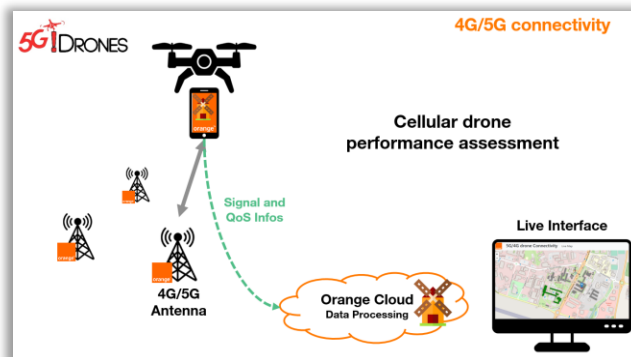




DEMO DAY

The Demo Day, organized by the Hub Drone Systematics, took place at Brétigny-sur-Orge. Four scenarios have been trialed: a) Support to decision making for law enforcement, b) Network coverage measurements and rescue of a missing person, c) Securing of a sport event and d) Support to medical staff, Inspection of linear infrastructure. Orange took part in the second scenario where the Morinant enabler from 5G!Drones, a platform for data collection, were presented. This platform aims to combine UE performance KPIs (e.g. RSRP, attached cell, etc.) and network KPIs (e.g. overall number of connected UEs, traffic load, etc.) and to visualize them in real-time. It consists of an Android app installed on a smartphone embedded on a drone, and a web interface. The trials were followed by a sharing session which have highlighted the need to better evaluate aerial connectivity and propose models for pre-flight coverage estimation, to minimize risks and predict QoS along the drone trajectory.

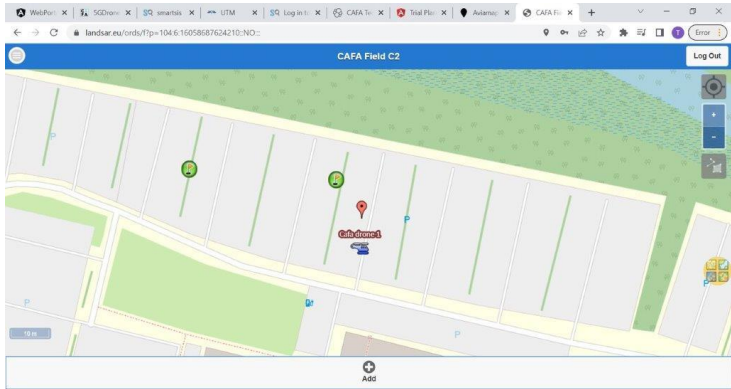
This Demo Day was a great success, with more than a hundred guests from industry, civil aviation, academy, and public institutions. The press was invited too and the representatives were impressed by the quality and wide variety of addressed topics.





TRIALS AT AALTO UNIVERSITY

On Thursday 18th August 2022, 5G!Drones project partners conducted final trials at Aalto University in the following scenarios: UC1Sc1 UTM, UC1Sc3 Logistics, UC3Sc2 IoT sensing. The partners involved were the following: Aalto University, CAFA Tech, Involi, Frequentis, DroneRadar, RobotsExpert.





TRIALS AT OULU UNIVERSITY

5G!Drones project performed the final trials of Oulu platform and showcased its findings at the University of Oulu campus (22-26 August 2022). Use cases tested: UC1Sc1, UC1Sc2, UC2Sc2, UC3Sc1 UC3Sc3. Involved partners: University of Oulu, CAFA Tech, Alerion, Hepta and FLE. On the 26th of August a showcasing event took place gathering approximately 40 attendants. Furthermore, the event was highly promoted by 6G Flagship.

You may learn more about the showcasing event here:

<https://www.facebook.com/photo/?fbid=495455905918700&set=pcb.495456179252006>

<https://www.linkedin.com/feed/update/urn:li:activity:6975431126634889216/>



5GPPP ACTIVITIES

The 5GPPP Newslash is back! Up to now the following issues have been released:

- Issue 64 (May 2022)
<https://5g-ppp.eu/newsflash-may-2022-2/>
- Issue 65 (June 2022)
<https://5g-ppp.eu/newsflash-june-2022-2/>
- Issue 66 (July 2022)
<https://5g-ppp.eu/newsflash-july-2022/>
- Issue 67 (August 2022)
<https://5g-ppp.eu/newflash-august-2022/>

The 5GPPP Newsletter is also back!

- Issue 26 (July - August 2022)
<https://5g-ppp.eu/newsletter-26-july-august-2022/>





UPCOMING DELIVERABLES

D4.4 Trial evaluation report - M42: This deliverable summarises the findings of the 5G!Drones trials; it includes qualitative and quantitative results, reporting on the impact of the trials, the feedback received by different communities of stakeholders and the service level gain of using 5G communication with respect to the identified KPIs and metrics.

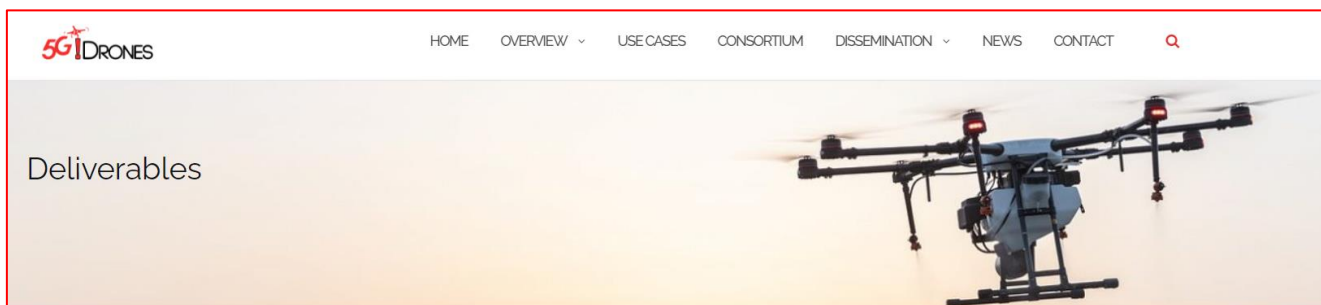
D5.4 Report on contribution to standardisation and international fora- 2nd Version - M42: This deliverable reports on the standardisation activities achieved during the whole project duration.

D5.5 Final report on communication, showcasing, dissemination and exploitation - M42: This deliverable reports on the achievements of the project in terms of communication, showcasing, dissemination and exploitation.

D5.6 Report on activities related to commercial exploitation and partnership development - M42: This deliverable describes the activities performed and results achieved with (a) the collaboration within the scientific communities, (b) the investigation of possibilities for the commercial exploitation, and (c) the collaboration with international innovation communities in the area of 5G communication. This deliverable report on the stakeholders' partnerships that have been developed and the agreements made. A business plan will be structured to sustain the outcomes beyond the life of the project.

D6.6 Final project report - M42: The closing report of the project containing all the project results and their evaluation.

If you wish to learn more about the submitted and upcoming deliverables of 5G!Drones, you may visit the official website on the corresponding deliverables' page, using the following link: <https://5gdrones.eu/deliverables/>



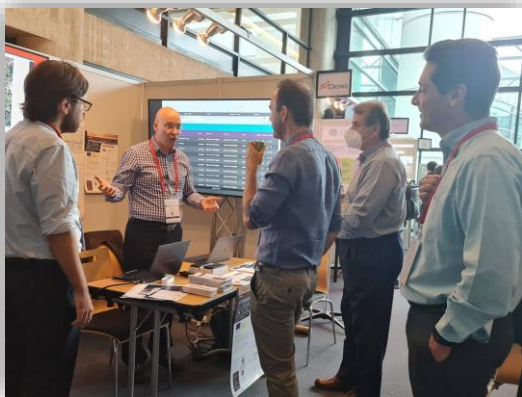
EUCNC & 6G SUMMIT 2022

5G!Drones project participated in the EuCNC & 6G Summit 2022 with a booth. This year's EuCNC event took place on the 7th - 10th June 2022, in Grenoble, France. The conference, sponsored by the IEEE Communications Society and the European Association for Signal Processing, focuses on all aspects of telecommunications ranging from 5G deployment and mobile IoT to 6G exploration and future communications systems and networks, including experimentation and testbeds, and applications and services.

The conference was intended to be held for in-person attendance, with remote attendance in a Hybrid mode. 5G!Drones had the chance to be promoted in a diverse audience, by sharing details about its nature and the trials that have been conducted in its context until now. Visitors had also the chance to be handed with materials such as stickers, leaflets, and posters, while also to watch videos related to the project.

For more details: <https://www.eucnc.eu/>

The 5G!Drones project was present with its own booth at the Booth #45.



Communication Channels



<https://5gdrones.eu/>

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