



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

ISSUE HIGHLIGHTS

The seventh issue of the 5G!Drones newsletter presents the project activities during the period December 2020 - February 2021. This issue focuses on the latest 5G!Drones dissemination and communication activities, the trials performed, the deliverables that have been published as well as the general assembly meeting's details.

5G!Drones activities in numbers:

- Two Conference Papers
- One White Paper
- One Thesis
- Four Articles
- Six Webinars - Presentations
- One Workshop
- One Feasibility Test
- Three 5G-PPP Activities
- Six Upcoming Deliverables
- One General Assembly Meeting (virtual)

INSIDE THIS ISSUE

1. Issue Highlights
2. Dissemination and Communication Activities
3. Trials
4. 5G-PPP activities
5. Deliverables
6. General Assembly Meeting



OULUN YLIOPISTO

THALES



INVOLI

Hepta

INFO
LYSiS

NOKIA



DISSEMINATION AND COMMUNICATION ACTIVITIES

CONFERENCE PAPERS

IEEE GLOBECOM

The 5G!Drones conference paper with the title “GPS Spoofing Detector with Adaptive Trustable Residence Area for Cellular based-UAVs” was accepted and it is under publication on the context of IEEE Globecom conference that took place in December. You can read the paper online on the 5G!Drones website:

<https://5gdrones.eu/wp-content/uploads/2020/09/Globecomm-GPS-Spoofing-Detector-with-Adaptive-Trustable.pdf>



The 5G!Drones conference paper entitled “UAV mission optimization in 5G: On reducing MEC service relocation” has been accepted in the context of IEEE Globecom 2020 is affiliated with the 5G!Drones project. You can read the paper here:

<https://5gdrones.eu/wp-content/uploads/2020/10/UAV-mission-optimization-in-5G-On-reducing-MEC-service-relocation.pdf>



WHITE PAPER

5G!Drones insights are shared by the Interface for Data Exchange between MNOs and the UTM Ecosystem in the Network Coverage Service Definition. More information available online at the GSMA website here:

<https://www.gsma.com/iot/wp-content/uploads/2021/02/ACJA-NetworkCoverage-Service-Definition-v1.00.pdf?fbclid=IwAR3UPvVJkdSKqMQpaEKe6xd-bzgwWMz66v9EBEXa8KiWqgaPYQgv53duSJU>



THESIS

A Master Thesis by Jyrkkä Johannes entitled "Drone heading calculation indoors" was published by University of Oulu, Faculty of Technology, Mechanical Engineering on 15 of October 2020. This thesis is in the context of 5G!Drones. You may access it here:

<http://jultika.oulu.fi/Record/nbnfioulu-202010153028>



ARTICLES

INTERDRONE ONLINE 2020: "IT IS HARD TO PROMOTE THE DRONE INDUSTRY WHILE DRONES ARE STILL NOT VISIBLE" AT UNMANNEDAIRSPACE.INFO

An online article based on InterDrone Online 2020 conference was published by unmanned airspace. Gokul Srinivasan from robots.expert, took part in the conference that brought in the light the interoperability capabilities of UAVs and the potential that can give to the society. Learn more by clicking on the following link:

<https://www.unmannedairspace.info/uncategorized/interdrone-online-2020-it-is-hard-to-promote-the-drone-industry-while-drones-are-still-not-visible-north-central-texas-aviation-department/>



InterDrone Online 2020: 'It is hard to promote the drone industry while drones are still not visible'

"TOP 10 COMMERCIAL DRONE INSIGHTS AND UPDATES FROM 2020" BY COMMERCIAL UAV NEWS ONLINE

Commercial UAV News published an online article entitled "Top 10 Commercial Drone Insights and Updates from 2020" by Jeremiah Karpowicz. This online article features a total of 10 separate articles among which one featuring 5G!Drones project and its ecosystem (by Danielle Gagne). You may access and read the article online here:

https://www.commercialuavnews.com/energy/top-10-commercial-drone-insights-from-2020?utm_source=Commercial%20UAV%20News&utm_medium=social&utm_campaign=5_minute

DECEMBER 31, 2020

Top 10 Commercial Drone Insights and Updates from 2020

by Jeremiah Karpowicz
in Surveying & Mapping, Energy & Utilities, Public Safety & Emergency Services, Infrastructure & Transport, Construction

SHARE f t in



WEBSITE ARTICLE: XTYPOS.GR

An online article about the 5G!Drones trials in the Egaleo city entitled: "Drones over Egaleo city" by xtypos.gr (in Greek) was published by xtypos.gr online portal. More information available in the following link:

<https://bit.ly/37mP74S>

Αεροπλάνο > Δίκτυο Αεροπλάνων > Δίκτυο Αεροπλάνων > Δίκτυο με 5G "πύργους" πάνω από το Αιγάλεω

Δίκτυο Αεροπλάνων Δίκτυο Αεροπλάνων Τεχνολογία

Drones με 5G "πέταξαν" πάνω από το Αιγάλεω

23 Δεκεμβρίου 2020





WEBSITE ARTICLE: KEDKE.GR

An online article published by kedke.gr (in Greek) described a brief overview of 5G!Drones trials at Municipal stadium of Egaleo. You may access the article by clicking on the following link:

<https://kedke.gr/technikes-dokimes-5g-me-drones-sto-dimotiko-gipedo-aigaleo/>



WEBINARS-PRESENTATIONS

"XCHANGING IDEAS - GLOBAL 5G EVOLUTION "

Harilaos Koumaras from NCSR-D, 5G!Drones partner and 5GENESIS project coordinator participated and presented in the online event "Xchanging Ideas - Global 5G Evolution " on 8th of December 2020, presenting the trial field results of 5G-enabled UAVs that performed in the framework of 5GDRONES Project on top of 5GENESIS Project experimental 5G infrastructure. The event was broadcasted through YouTube channel of Xchanging Ideas. You may watch the whole event online here:

<https://www.youtube.com/watch?v=el9ZhXa-Ccw>



"5G AND INTERNET OF THINGS THESSALONIKI WEEK 2020"

Dr. Harilaos Koumaras (NCSR-D), 5G!Drones partner, presented at the "5G and Internet of Things Thessaloniki Week 2020" how 5G-enabled UAVs can support the IoT vertical industry, based on the work that is performed in 5G!Drones and 5GENESIS 5G-PPP projects. More information available at:

<https://www.ihu.gr/ucips/post-3399>



INTERDRONE ONLINE EVENT: WHAT DO WE NEED FOR SUCCESSFUL IMPLEMENTATION OF UTM TECHNOLOGIES

5G!Drones partner robots.expert, participated in the InterDrone online event, 16 December 2020. The panel discussed about "What do we need for successful Implementation of UTM Technologies" where insights about the 5G!Drones were also shared. More information available in the following link: <https://interdrone.com/>





UNMANNED CARGO AIRCRAFT CONFERENCE 9TH EDITION

Gokul Srinivasan from robots.expert, 5G!Drones partner participated in Unmanned Cargo Aircraft conference presenting "Drone Deliveries: Who pays the bills". In this session he also shared some useful insights of 5G!Drones project. You may watch the session online here:

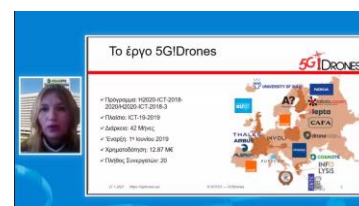
<https://www.youtube.com/watch?v=MhU1D0r6Coc&feature=youtu.be>



PRESENTATION: TRIALS, CHALLENGES & NEXT STEPS IN DRONE 3S PROJECT (IN GREEK)

Harilaos Koumaras from NCSR, 5G!Drones partner, participated and presented in the Drones Pro 3s forum in Greece. He shared useful insights and details from the collaboration between 5G!Drones and 5GENESIS project. You may watch the whole presentation video here:

<https://www.youtube.com/watch?v=S82hNTULUzA>



PRESENTATION: GOALS, TRIALS & GREEK PARTICIPATION IN 5G!DRONES IN DRONE 3S PROJECT (IN GREEK)

Fofy Setaki from COSMOTE, 5G!Drones project partner, represented our project in the Drones Pro 3s forum in Greece. She presented its nature and scope along with details about the use cases of the project! You may watch the presentation by clicking on the following link:

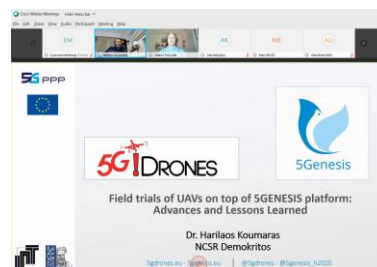
<https://www.youtube.com/watch?v=S82hNTULUzA>



WORKSHOP

5G-PPP TECHNOLOGY BOARD E-WORKSHOP PRESENTATION

Dr. Harilaos Koumaras (NCSR), 5G!Drones partner, presented online the presentation "Field Trials of UAVs on top of 5GENESIS platform: Advances and Lessons Learned" at the 5G-PPP Technology Board e-Workshop, session "Working on Verticals", on 10 December 2020.

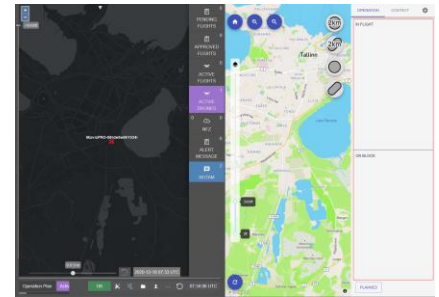




FEASIBILITY TESTS-TRIALS

REMOTE FEASIBILITY TESTS (FRANCE) ON 17-18 DEC 2020

5GDrones partners EUR, CAF, AIR, DRR, FRQ, REX conducted remote Feasibility tests using Eurecom (France) and CAFA Tech (Estonia) facilities on 17-18th December 2020 to initially test how 5G!Drones containers (C2+U-Space-, MCS- and latency measurement container) the connections with these containers' client applications in smartphones work in Eurecom servers. A demo video from the feasibility test is available at 5G!Drones YouTube channel: <https://youtu.be/DUxaUAABuVk>





5G-PPP ACTIVITIES

NEWSLETTER ISSUE 23

The latest Newsletter issue (January 2021) of 5g-ppp is available online at the 5G-PPP website:

<https://5g-ppp.eu/newsletter-23-january-2021/>

NEWSFLASH ISSUES

The latest newsflash issues of the 5g-ppp are available here:

- Newsflash Issue 55 (December 2020):
<https://5g-ppp.eu/newsflash-december-2020/>
- Newsflash Issue 56 (January 2021):
<https://5g-ppp.eu/newsflash-january-2021/>





UPCOMING DELIVERABLES

D2.2 Initial implementation of the trial controller - M23: A deliverable describing the initial version of the trial controller engine, and execution and management APIs.

D5.2 Report on communication, showcasing, dissemination and exploitation achievements and plan for the second term of the project - M23: This deliverable gives information about the activities of the first half of the project's duration and describes the revised plan for communication, showcasing, dissemination and exploitation.

D1.6 5G!Drones system architecture refined design - M24: This deliverable will describe possible changes in the first revision of the system architecture, based on lessons learned during the system design in the first half of the project, feedback from implementation and integration activities, and the evolution of the trial facilities.

D2.3 Report on algorithms, mechanisms and tools for data analysis and visualisation - M24: Update on algorithms, mechanisms and tools used for data analysis and visualisation

D2.4 Definition of the trial controller architecture, mechanisms, and APIs - M24: Updated definition of the trial controller architecture, mechanisms and APIs based on feedback from integration and trial preparation activities.

D6.4 Annual report, year 2 - M24: The closing report of the project containing all the project results and their evaluation.

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/>

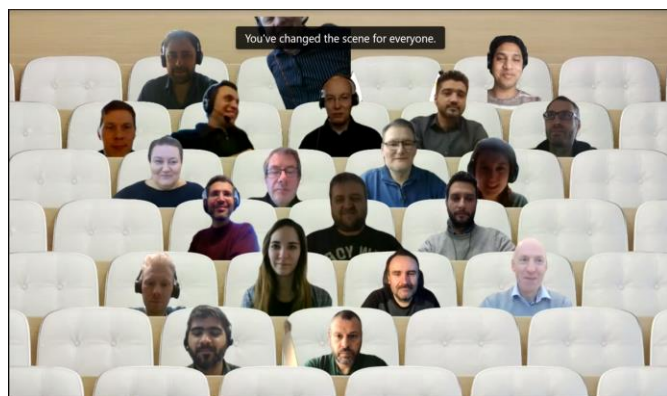
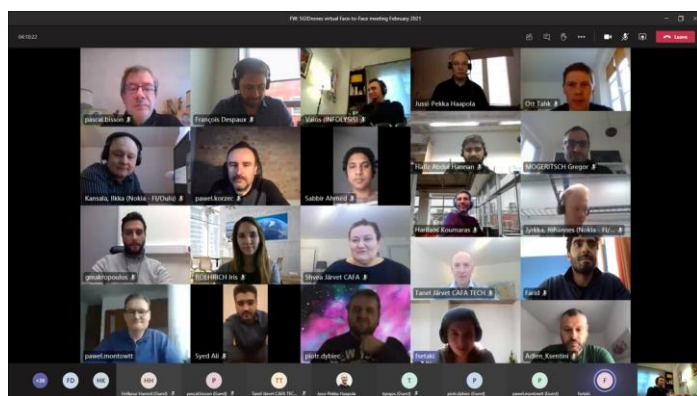
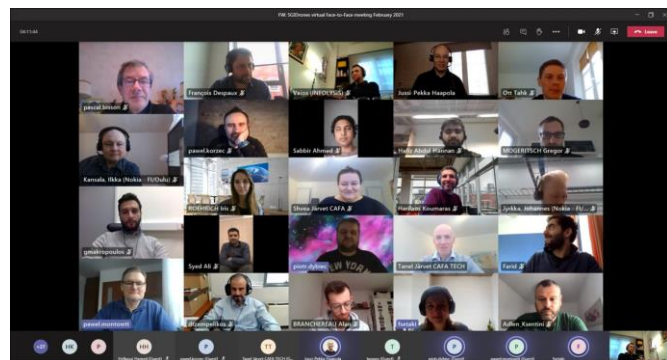


Deliverables



6th 5G!Drones GENERAL ASSEMBLY MEETING

The 6th 5G!Drones GA plenary meeting was organised remotely due to the COVID-19 impact and safety restrictions that apply worldwide! This virtual GA meeting ran for 2 days 3-4 February 2021 discussing the project progress, WPs/tasks activities, the upcoming deliverables, trials results/KPIs, and the new goals to be met over the next period.



Communication Channels



<https://5gdrones.eu/>

e-mail: info@5gdrones.eu



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 857031

Call: H2020-ICT-2018-2
Topic: ICT-19-2019
Type of action: R&I
Duration: 42 Months
Start date: 1/6/2019