



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

### ISSUE HIGHLIGHTS

The second issue of the 5G!Drones newsletter presents the project activities during the period September-November 2019. 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
- Two Conference Papers
- Six Presentations
- Three Field Tests/Trials
- One Workshop and Call for Papers
- Three Deliverables
- 5GPPP 5G-Initiative Steering Board meeting
- One General Assembly Meeting

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## DISSEMINATION AND COMMUNICATION ACTIVITIES

### JOURNAL PAPERS

#### IEEE WIRELESS COMMUNICATIONS MAGAZINE 2019

- 5G!Drones paper entitled “Dynamic Maps for Automated Driving and UAV Geofencing” by Aalto University was published in the IEEE wireless Communications Magazine 2019 (volume:26, issue:4, August 2019).



### CONFERENCE PAPERS

#### IEEE GLOBECOM 2019

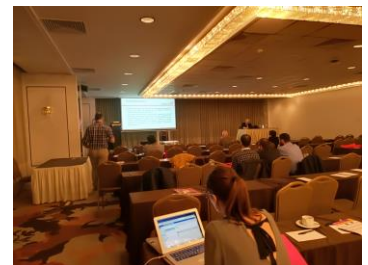
- A conference paper entitled “Toward a UTM-based Service Orchestration for UAVs in MEC-NFV Environment” by Aalto University has been accepted in 2019 IEEE Global Communications Conference (IEEE GLOBECOM 2019).
- The conference papers entitled “Efficient Steering Mechanism for Mobile Network-enabled UAVs” by Aalto University has been accepted in 2019 IEEE Global Communications Conference (IEEE GLOBECOM 2019).
- 5G!Drones conference paper “Dynamic slicing of RAN resources for heterogeneous coexisting 5G services” by Eurecom has been accepted in 2019 IEEE Global Communications Conference (IEEE GLOBECOM 2019).



### PRESENTATIONS

#### INFOCOM WORLD CONFERENCE 2019 (29/11/2019, ATHENS, GREECE)

Cosmote presented 5G!Drones at INFOCOM WORLD CONFERENCE 2019 - “Economy 4.0: Connected Future” on Tuesday 26 November 2019 in Athens, Greece



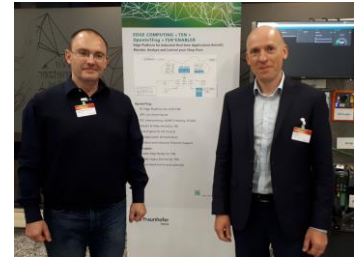
INFOCOM 2019, Athens, Greece



## PRESENTATIONS

### FOKUS FUSECO 2019 FORUM (7-8/11/2019, BERLIN, GERMANY)

On 7-8 November 2019 Dr. Lechostaw Tomaszewski (Orange Labs, Poland) and Tanel Järvet (CAFA Tech, Estonia) participated in the 10th FOKUS FUSECO 2019 Forum - Berlin, Germany with the presentation “5G!Drones trials - how to match UAV business cases, drone capabilities and 5G test facilities“, which was co-prepared with Pascal Bisson (Thales Group, France).



FOKUS FUSECO 2019 Forum, Berlin

### FRUCT 19 (08/11/2019, HELSINKI, FINLAND)

Tero Vuorenmaa (Robots Expert) presented "Is UAM ready for business?" focused on challenges of the Urban Air Mobility and 5G!Drones as a use case of activity towards 5G connected drones, on 8 November 2019 in the FRUCT2019 conference Helsinki, Finland



Tero Vuorenmaa (REX) in FRUCT19

### 5GTNF RESULTS AND DEMO SEMINAR (01/11/2019, HELSINKI, FINLAND)

Prof. Ari Pouttu (UO) presented the 5G!Drones at the poster session of 5GTNF Results and Demo Seminar in Helsinki, Finland, on 1st of November 2019. Additional information can be found at: <http://5gtnf.fi/5gtnf-results-and-demo-seminar/>



### ITS WORLD CONGRESS 2019 (24/10/2019, SINGAPORE)

Tero Vuorenmaa (Robots Expert) presented Urban Air Mobility requirements and 5G!Drones project in ITS World Congress 2019 in Singapore on 24 October 2019. More information about the event are available at <https://itsworldcongress2019.com/>



Dr. Jussi Haapola at Digital Transport Days, Finland

### DIGITAL TRANSPORT DAYS (09/10/ 2019, HELSINKI, FINLAND)

Dr. Jussi Haappola presented the 5G!Drones Project during the discussion entitled “What can 5G bring to each mode of transport?” in the Digital Transport Days in Helsinki, Finland in October 9th 2019.





## WORKSHOPS

### 5G-PPP TECHNICAL WORKSHOP ON KEY ENABLERS FOR 5G EXPERIMENTATION (10/10/2019, UNIVERSITY OF MALAGA)

Pascal Bisson (Thales), Technical manager of 5G!Drones Project, represented the project in the Technical Workshop on Key Enablers at the University of Malaga.



Technical Workshop on Key Enablers, University of Malaga

## TESTS/TRIALS

### WINDSURF FRENCH CHAMPIONSHIPS IN SAINT-PIERRE-QUIBERON

Orange France conducted an experiment of a tethered drone embedding a cellular base station based on Open Air Interface, acting as a connectivity bubble, at French championships of Windsurf in Saint-Pierre-Quiberon France, from 1st to 3rd of November, as part of 5G!Drones use case #4 (UC4).



Orange France tests

### TALLINN, ESTONIA

CAFA Tech conducted a 5G drone test flight on 1st of November 2019, in Tallinn, Estonia as part of 5GDrones initial tests.

### AALTO UNIVERSITY, HELSINKI

CAFA Tech conducted the first initial tests with DJI Mavic Pro drone and 5G smartphone in Aalto University, Helsinki, Finland, on 24/10/2019

More details on CAFA Tech tests available at <https://5gdrones.eu/trials/5gdrones-initial-field-trials/>

## CALL FOR PAPERS

### AERCOMM WORKSHOP (6-9/04/2020)

5G!Drones Project co-organizes with EU-Korea PriMO5G project the Aerial Communications in 5G and Beyond Networks (AERCOMM) workshop, co-located with IEEE WCNC 2020, 6-9 April 2020, Seoul.

Paper deadline is on the 31<sup>st</sup> of December 2019.

Read additional CfP information: <https://5gdrones.eu/call-for-papers/call-for-papers-aerocomm-workshop/>



Cafa Tech tests



**AERCOMM WORKSHOP, WCNC 2020**

Workshop on Aerial Communications in 5G and Beyond Networks





## DELIVERABLES

Three deliverables have been published in the period September - November 2019:

**D1.1 Use case specifications and requirements:** This WP1 deliverable describes the overall use case specifications and detailed end-user requirements for the new tools and applications to be developed.

**D1.2 Initial description of the 5G trial facilities:** This deliverable contains a detailed description of the supported features and identified requirements of 5G test sites to deploy 5G!Drones.

**D5.1 Communication, showcasing, dissemination and exploitation plan and standardization roadmap:** This WP5 deliverable describes the initial 5G!Drones communication, showcasing, dissemination and exploitation plan, including project website, social media accounts and a standardization roadmap.

## UPCOMING 5G!DRONES DELIVERABLES

**D4.1 Integration plan:** This deliverable presents a guide for integrating all architecture and use case components into the full 5G!Drones system over the selected 5G facilities

**D1.3 5G!Drones system architecture initial design:** First version of 5G Architecture to be used for 5G!Drones trials of use cases.

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/>

## 5G-PPPP MEETINGS

### 5G-PPP 5G-INITIATIVE STEERING BOARD MEETING (BRUSSELS, 17/09/2019)

Dr. Jussi Haapola (project coordinator), participated at 5G-PPP 5G-Initiative Steering Board meeting in Brussels where he met the rest 5G-PPP project coordinators and represented 5G!Drones project. Decisions and plans were made for the next months mainly concerning 5G-PPP initiatives and actions.



5GPPP 5G-Initiative steering board meeting



## GENERAL ASSEMBLY MEETINGS

The second general assembly meeting of 5G!Drones was organized in COSMOTE premises, in Athens, Greece at 15-17 of October 2019. All 20 partners met and worked together to set the project plans and actions for the next period. The main scope of this meeting was to discuss about the 5G!Drones architecture, use cases, project objectives, deliverables and the upcoming actions that will be taken.



5G!Drones partners at the Cosmote premises, Athens, Greece

The next GA meeting will be hosted by Eurecom in Sophia-Antipolis, France at 28-30 January 2020.



5G!Drones 2<sup>nd</sup> GA Meeting in Athens



### Communication Channels



<https://5gdrones.eu/>

e-mail: [info@5gdrones.eu](mailto:info@5gdrones.eu)



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**Call:** H2020-ICT-2018-2020  
**Topic:** ICT-19-2019  
**Type of action:** R&I  
**Duration:** 36 Months  
**Start date:** 1/6/2019