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5GENESIS Newsletter

January - March 2021 - Issue 11

5GENESIS website: www.5genesis.eu/

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5GENESIS Project Overview

The 11th issue of the 5GENESIS newsletter presents the project activities and achievements during the period January - March 2021. This issue focuses on the latest 5GENESIS dissemination (papers, articles) and communication activities, the deliverables that are planned to be published, as well as the details of the 11th GA plenary meeting, which was hosted virtually, due to the coronavirus pandemic, on 16-18 February 2021.

5GENESIS activities in numbers for the January - March 2021 period:

- Two Special Issues - Call for Papers
- One Special Issue - Call for Demo
- Four Journal papers
- One White Paper
- Two Online Articles
- One Interview
- One Online Conference
- Three Presentations
- Two Workshop Activities
- Four 5GPPP Activities
- Six Submitted Deliverables
- Three Upcoming Deliverables
- One GA meeting



Communication Channels



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Dissemination and Communication Activities

Dissemination and Communication activities of 5GENESIS during January - March 2021, cover a great number of initiatives such as publications, articles, presentations and trials.

Special Issues - CfP

5GENESIS team of SRL, KAU, NCSR, UMA and INTEL are leading a special issue on the Sensors journal entitled: "Experimentation in 5G and Beyond Networks: State of the Art and the Way Forward". This Special Issue aims to collect original contributions on experimental aspects of 5G and beyond networks and systems. Manuscripts submission is now open! Start submitting your papers now! Deadline 30 October 2021. More information available here:

https://www.mdpi.com/journal/sensors/special_issues/5G_beyond_networks



5GENESIS-supported Special Session on "Securing Future Networks" in IEEE MeditCom 2021. 5GENESIS is among the projects co-organising the Special Session on "Securing Future Networks", in the frame of IEEE MeditCom 2021 (5-8 July 2021). CfP is open. Submission deadline is April 10th 2021. More info available in the following link:

<https://5genesis.eu/call-for-papers-ieee-meditcom-2021/>



Special Issue – Call For Demo

Please consider submitting your demo paper at the IEEE MeditCom 2021 Demo session co-chaired by Dr. Harilaos Koumaras (NCSR partner). Submissions should be a two-page proposal summary that follows the IEEE formatting guidelines: refer to the IEEE submission instructions for details. Be as specific as possible in describing what you will demonstrate or display as demo. Summaries of accepted demos will be included in the IEEE MeditCom 2021 Proceedings. Accepted and presented summaries will be submitted to IEEE Xplore®. You may find more information here: <https://meditcom2021.ieee-meditcom.org/authors/call-for-demos/>



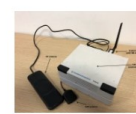
Journal Papers

5GENESIS partners, G. Caso, K. Kousias, Ö. Alay, A. Brunstrom, M. Neri, submitted a journal paper entitled "NB-IoT Random Access: Data-driven Analysis and ML-based Enhancements", on IEEE Internet Things Journal. The journal is to appear in 2021. Supplementary materials and Dataset available at the following link: <https://mosaic-simulamet.com/nbiot-randomaccess/>

NB-IOT RANDOM ACCESS: DATA-DRIVEN ANALYSIS AND ML-BASED ENHANCEMENTS

The content in this webpage complements the paper "NB-IoT Random Access: Data-driven Analysis and ML-based Enhancements". The paper has been accepted for publication in IEEE Internet of Things Journal, and its early access version can be found here: <https://doi.org/10.1109/IIOT.2021.3055555>. The complete dataset is available below. Please consider to cite the paper if you use the dataset: G. Caso et al. "NB-IoT Random Access: Data-driven Analysis and ML-based Enhancements", IEEE Internet Things J., in press, 2021.

Tool Description



The journal paper entitled “5G-Enabled UAVs with Command and Control Software Component at the Edge for Supporting Energy Efficient Opportunistic Networks” by Harilaos Koumaras, George Makropoulos, Michael Batistatos, Stavros Kolometsos, Anastasios Gogos, George Xilouris, Athanasios Sarlas and Michail-Alexandros Kourtis, was published at MDPI, Special Issue 5G Enabled Energy Innovation, Energies 2021, 14, 1480. The paper is available online at: <https://www.mdpi.com/1996-1073/14/5/1480/pdf>

5GENESIS partners Zanaj, E., Caso, G., De Nardis, L., Mohammadpour, A., Alay, Ö., Di Benedetto, released a journal paper entitled “M.-G. Energy Efficiency in Short and Wide-Area IoT Technologies—A Survey” at MDPI Technologies 2021, Volume 9, Issue1, 22. You may learn more by clicking on the following link: <https://doi.org/10.3390/technologies9010022>

The journal paper entitled "Empirical Models for NB-IoT Path Loss in an Urban Scenario" by Caso, G.; Alay, Ö.; De Nardis, L.; Brunstrom, A.; Neri, M.; Di Benedetto M.-G., was accepted by IEEE Internet of Things Journal. Camera ready paper available at 5GENESIS website: <https://5genesis.eu/wp-content/uploads/2021/03/SRL-KAU-Internet-of-Things-Journal-2021-Empirical-Models-for-NB-IoT-Path-Loss-in-an-Urban-Scenario.pdf>

White Paper

The 5G PPP Initiative and the 5G-IA published a new white paper entitled “Edge Computing for 5G Networks”. This white paper provides an in-depth analysis of Edge solutions that have been selected, deployed and validated by 17 different EU funded 5G PPP projects including 5GENESIS. You may access and read the paper online at: <https://5g-ppp.eu/white-paper-on-edge-computing-for-5g-networks/>

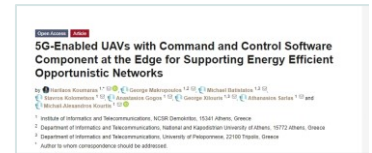
Website Articles

XTYPOS.GR

An online article about the 5G!Drones (ICT-19 project) trials that took place in the 5GENESIS 5G Athens platform in 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>

KEDKE.GR

An online article published by kedke.gr (in Greek) described a brief overview of 5G!Drones trials (ICT-19 project) that conducted in 5GENESIS 5G Athens platform at Municipal stadium of Egaleo. You may access the article by clicking on the following link: <https://kedke.gr/techniques-dokimes-5g-me-drones-sto-dimotiko-gipedo-aigaleo/>



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Interview

Startupper.gr

Dr. Harilaos Koumaras (NCSR "Demokritos"), 5GENESIS project coordinator, provided an interview at Startupper Magazine (in Greek) providing insights about NCSR "Demokritos" pioneering activities in 5G research and EU 5G-PPP projects. Special mention is made to 5GENESIS project and its 5G activities. You may access the whole interview here: <https://5genesis.eu/wp-content/uploads/2021/03/startupper-NCSR.pdf>



Online Conference

On 27th and 28th of January 2021, 5GENESIS partner Athonet, hosted the first edition of the UPTIME conference at Villa Griffone, Italy, where Guglielmo Marconi made his first wireless transmission. The conference was free of charge and celebrated the 10 years of the Private LTE industry. The aim of the event was to look forward to the next decade of Private 5G with abundant shared and unlicensed spectrum for deployment. Invited speakers came from end-user Industries, mobile network operators, specialist operators, cloud hyperscalers, and device manufacturers. More information available at the following link: <https://www.eventbrite.co.uk/e/uptime-2021-the-annual-private-5g-lte-world-community-conference-tickets-122048445185#>



Presentations/ Webinars

Drone Pro 3s Forum

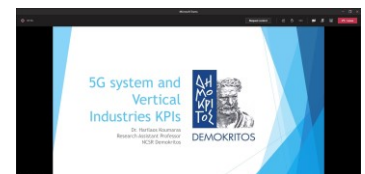
Harilaos Koumaras from NCSR "Demokritos", 5GENESIS project coordinator, participated and presented in the Drones Pro 3s forum in Greece. He shared useful insights and details from the interaction between 5G!Drones and 5GENESIS project. He also shared details about the trials that 5G!Drones conducted in the 5GENESIS 5G Athens platform in Municipal stadium of Egaleo.

You may access and watch the whole presentation sessions here: <https://www.youtube.com/watch?v=S82hNTULUzA>



SEMANTIC Project

Harilaos Koumaras NCSR "Demokritos", 5GENESIS project coordinator, presented the "5G system and Vertical Industries KPIs" with focus on Open5Genesis Suite at SEMANTIC project - School 1 virtual session: 5G architectures, enabling technologies, vertical industries and KPIs on 16 February 2021.



ITU-ETSI-IEEE Joint SDOs Brainstorming Workshop on Testbeds Federations for 5G and Beyond

5GENESIS participated at "ITU-ETSI-IEEE Joint SDOs Brainstorming Workshop on Testbeds Federations for 5G and Beyond" (virtual event 15-16 March 2021). This workshop provided a platform for ETSI, ITU-T and IEEE to Brainstorm and share ideas on Testbeds Federation Challenges, including the Testbeds Federation Reference Model being jointly standardized by ETSI and ITU. More information available here: <https://uk5g.org/attend/itu-etsi-ieee-joint-sdos-brainstorming-workshop-te/>



Workshops

Third Workshop "Towards THz Communications" – Invited Talk

The Workshop's main subject was focused on presenting the factors related to THz communication. The talk in which Valerio Frascolla (Intel) participated, referred to the 5GENESIS Berlin platform as a starting point to show that in Europe there are testbeds that are capable of mmwave and are suited for including in the mid-long term THz capabilities. You may learn more about the Workshop by clicking on the following link: <https://ec.europa.eu/digital-single-market/en/news/third-towards-terahertz-communications-workshop>



Third Workshop "Towards THz Communications' 2021.03.12" – Panel Attendance

Valerio Frascolla from Intel, 5GENESIS partner, was invited to the Industrial Panel of the III Workshop "Toward THz communications" to discuss 5GENESIS involvement in mmwave and THz communications. More information about the discussion available here:

<https://ec.europa.eu/digital-single-market/en/news/third-towards-terahertz-communications-workshop>



5G-PPP Activities

5G-PPP 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/>

5G-PPP 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/>
- Newsflash Issue 57 (February 2021):
<https://5g-ppp.eu/newsflash-february-2021/>



Deliverables

Submitted Deliverables - Period April-June 2021 (M31-M33)

D3.2 Management and orchestration (M33): Final report on the design and implementation of the management and orchestration component of the 5GENESIS facility.

D3.4 Slice management (M33): Final report on the design and implementation of the Slice Manager component of 5GENESIS facility.

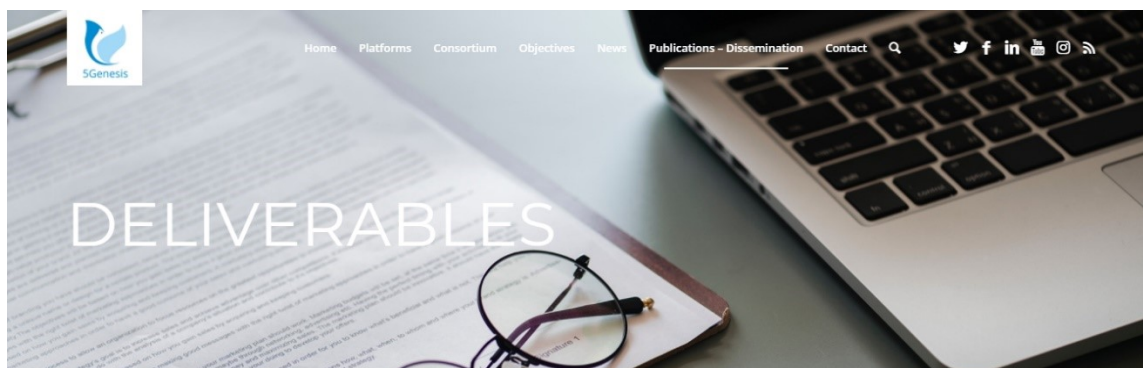
D3.6 Monitoring and analytics (M33): Final report on the design and implementation of the monitoring and analysis tool of the 5GENESIS facility.

D3.8 Open API, service-level functions and interfaces for verticals (M33): Final report on the design and implementation of the 5GENESIS openness framework (east-west interfaces and APIs for verticals are described in detail).

D3.14 Security Framework (M33): Final report on the 5GENESIS security analytics engine.

D3.16 Experiment and Lifecycle Manager (M33): Midterm report on the 5GENESIS Experiment and Lifecycle Manager, also including descriptors and the 5GENESIS data modeling.

Please note that all submitted public deliverables are available online at the 5GENESIS website:
<https://5genesis.eu/deliverables/>



Deliverables

Upcoming Deliverables - Period April-June 2021 (M34-M36)

D3.10 5G Core Network Release B (M36): Final report on 5G network functions developed to support the use cases of the project. The deliverable will also touch the integration progress with the other components of the network chain.

D3.12 Access Components and User Equipment (Release B) (M36): Final report on 5G access components and user equipment, emphasizing on the NR and the wireless access link of the facility. Includes also the MTC end devices, and the non-3GPPP access technologies integrated in the 5GENESIS facility.

D5.2 System-level tests and verification (Release B) (M36): Final report with detailed documentation and analysis of the results from the system-level tests and the verification trials.



Deliverables

GA Meeting

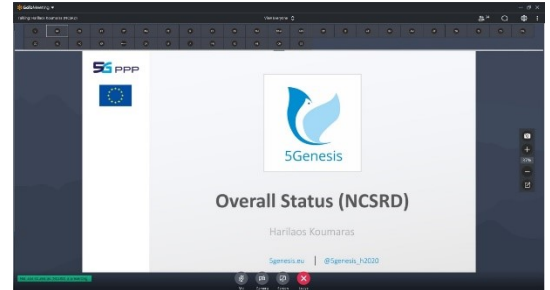
5GENESIS 11th GA Meeting (virtual)

The 11th 5GENESIS GA plenary meeting due to the COVID-19 restrictions and for safety reasons took place virtually! It ran for 3 days (16-18 February 2021) and approximately 50 partners' representatives participated in this online GA meeting. The discussion was focused on plans related to experimental platforms, use cases, trials and upcoming deliverables.



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H2020 EU PROJECT

GA Meeting



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