



INTELLIGENT AUTOMOTIVE NETWORK APPLICATIONS

Newsletter April 2023

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5G-IANA: a Horizon 2020 project on 5G Intelligent Automotive Network Applications aiming at providing an open 5G experimentation platform, on top of which third party experimenters, i.e., Small and Medium Enterprises (SMEs) in the Automotive-related 5G-PPP vertical will have the opportunity to develop, deploy and test their services.

1 The fourth issue of 5G-IANA Newsletter summarises

5G-IANA's activities from December 2022 to March 2023.

5G-IANA project has currently completed the Development Phase of the first release of the AOEP platform, while intensive work is ongoing in terms of testbed deployment and integration. Extensive effort is currently also put towards the preparation of the pre-testing and validation phases of the SMEs' experiments/use cases that are going to be eventually selected through our Open Call. 5G-IANA has completed its first period in M21, so the consortium is also working on the periodic reporting to the EU.

This issue puts the focus on 5G-IANA's first Open Call that launched in February 2023. 5G-IANA will organise two Open Calls during the implementation of the project for the involvement and engagement of "third parties" with the 5G-IANA "Automotive Open Experimental Platform (AOEP)" the project is developing. 5G-IANA's first Open Call was launched on February 22nd, 2023. The project is calling for SMEs and start-ups to apply to this program, which will allow them to run their automotive network applications on top of the platform provided by the 5G-IANA project making use of 5G connectivity. Applications are already open and can be submitted here until the 22nd of May 2023. Keep reading for all the information!

This issue also summarises the communication and dissemination activities addressed during this four-month period, including the new dedicated website section we have published about the Open Call and the Info Day we have organised on March 14th..



OPEN CALL #1

5G-IANA's first Open Call was launched

Launch date: **22 February 2023**

Deadline: **22 May 2023**

2

The 5G-IANA project calls for SMEs and start-ups from Europe to apply to the project's first Open Call that will allow them to run their automotive network applications on top of the platform provided by the 5G-IANA project using 5G connectivity. The 5G-IANA consortium will support its participants to develop and integrate their innovative idea using the 5G-IANA platform, facilitating in parallel the developed Repository of Virtual Network Functions (VNFs).

Selected participants will reap the following benefits offered by 5G-IANA:

- Gain access to a “canvas” to develop new functions and services in the automotive 5G landscape.
- Test and validate their existing or new services in real-time with 5G connectivity.
- Gain access to real-life 5G resources (vehicles, OBUs, RSUs, edge server/MEC).
- Get continuous mentorship and support from the network and automotive experts.
- Explore/Build new business models within the 5G ecosystem.
- Gain visibility towards the EU, the 5G and the automotive communities.
- Get an award of 15.000 euros!

The program starts in June 2023 and ends in November 2023.

Applications are already open and available through our website here.

- Application period: 22nd February-22nd May 2023
- Evaluation period: 22nd May-31st May 2023
- Pre-testing phase: June-July 2023
- Validation & testing phase: July-October 2023
- Reporting period: November 2023
- Award phase: December 2023

Visit our website and download the
“Open Call Guide for Applicants”
to check all the required information!

OPEN CALL #1

GUIDE for Applications

Deadline: **22 May 2023**





1ST OPEN CALL

TIMELINE
2023



Visit our website and download the “Open Call Guide for Applicants” to check all the required information!

- Scope and terms of the Open Call
- Project overview
- How to apply
- After the application: what to expect
- Selection of award winners

OPEN CALL #1
GUIDE for Applications

Launch date:
22 February 2023

Deadline:
22 May 2023



3 “Get Involved” in 5G-IANA Open Call!

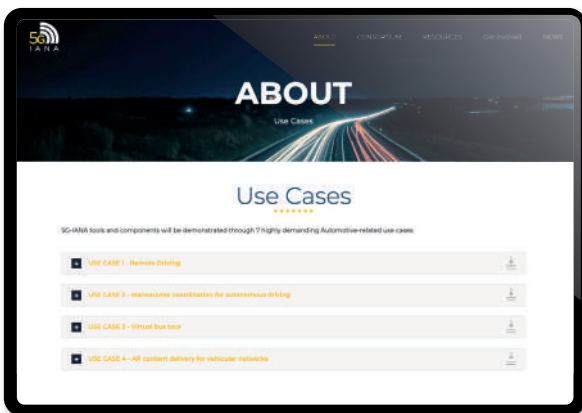
new dedicated WEBSITE SECTION on www.5g-iana.eu

“Get Involved” was launched in February 2023. This new 5G-IANA website section provides guidance to external experimenters on their overall engagement with the open experimentation of the 5G-IANA platform and participation in the Open Calls!



Platform capabilities

- Discover the 5G-IANA platform capabilities and Test Sites!
- Download the Open Call#1 User Guidelines!
- Submit your application to the Open Call



And keep browsing 5g-iana.eu we have new features...

Discover

- 5G-IANA's Concept & Approach
- The project objectives
- Detailed info about 5G-IANA Use Cases



...and all the latest news about the project!



COMMUNICATION & DISSEMINATION ACTIVITIES

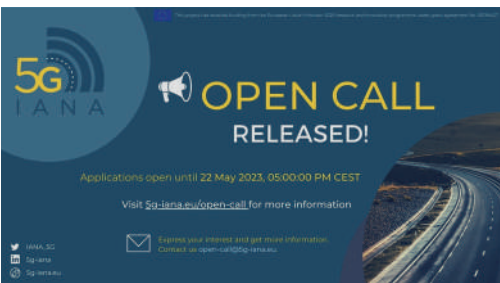
4 Project presentation



IEEE CSCN 2022

(28-30 November 2022), Thessaloniki.

5G-IANA was presented at the IEEE Conference on Standards for Communications and Networking (CSCN 2022).

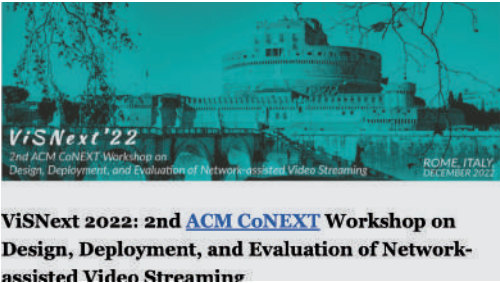


5G-IANA Open Call presentation at 5G-PPP SMEs Working Group

(16th January 2023), online
5G-IANA's Deputy Coordinator, Eirini Liotou, provided an overview of the project and presented the Open Call and the available opportunities for SMEs and start-ups in the automotive sector.



4 Other events:



ViSNext 2022

(6-9 December 2022), Rome.
Professor of Computer Science at the University of Duis-burg-Essen, Amr Rizk, a member of the 5G-IANA project, delivered the keynote speech titled "Live Video Streaming through the ML Lens". 5G-IANA Eirini Liotou, Deputy Project Coordinator of 5G-IANA, co-chaired this event.



4.1 Journal Publications

Enabling far-edge intelligent services with Network Applications: the automotive case

Konstantinos V. Katsaros, Eirini Liotou, Francesca Moscatelli, Theodoros Rokkas, Georgios Drainakis, Edoardo Bonetto, Daniele Brevi, Dimitris Klionidis, Ioannis Neokosmidis and Angelos Amditis

Abstract—The fifth generation of mobile networks (5G) is rapidly reaching deployment across the globe, promising a series of advances for vertical service providers, both in terms of performance and in terms of operational capabilities. In this context, the 5G-IANA Network Application platform focuses on the rapidly advancing domain of intelligent, data-centric, Artificial Intelligence / Machine Learning (AI/ML)-enabled applications, with a particular focus on the automotive domain. In this paper, we present the key functional features designed for the support of such services including the integration of (mobile) far-edge resources, as well as ML-aware orchestration primitives. This includes novel features such as decision support for the optimal distribution of end-to-end ML pipelines, as well as run-time support for client selection in Federated Learning setups, far-edge failure handling and distribution drift aware lifecycle management. Such features come to address a series of limitations associated with legacy 5G management & orchestration systems, such as resource consumption of data-centric services and privacy

operational conditions and further feeding decision making and eventually AI/ML-enabled intelligent automated services. In this paper we focus on the Automotive domain as a notable example domain, of particular economic interest. Indeed, the global connected car market is projected to reach a value of €200 billion by 2025, growing at a compound annual growth rate (CAGR) of 14.8% from 2018 to 2025. It is also forecast that more than 125 million passenger cars produced in the next four years will be equipped with embedded connectivity, out of a total of 1.2 billion motor vehicles in use worldwide¹. This connectivity is expected to fuel a series of AI/ML-based services, such as Automated Driving, Trajectory Planning, Preventive Maintenance, etc., which rely on the rich data generated by vehicles, often (expected to be) operated in fleets

Enabling Far-Edge Intelligent Services with Network Applications: The Automotive Case

K. V. Katsaros, E. Liotou, F. Moscatelli, T. Rokkas, G. Drainakis, E. Bonetto, D. Brevi, D. Klionidis, I. Neokosmidis, A. Amditis.

"Enabling Far-Edge Intelligent Services with Network Applications: The Automotive Case," in IEEE Internet of Things Magazine, vol. 5, no. 4, pp. 122-128, December 2022, doi: 10.1109/IOTM.001.2200215.



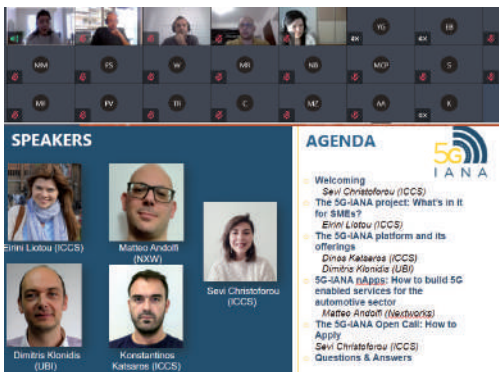
5 Project Events: 5G-IANA webinar series



5G-IANA first webinar (internal)

November 22nd 2022

The project's Technical Coordinator, UBITECH, conducted the first webinar of the project titled "Bridging the gap between the 5G-IANA platform developers and the use case NetApp/VNF developers".



5G-IANA Info Day Webinar

March 14th 2023

5G-IANA Deputy Coordinator, 5G-IANA Technical coordinator, 5G-IANA Network Applications expert, and 5G-IANA Dissemination Manager hosted this Info Day webinar where 5G-IANA project and the Open Call were presented to interested third party experimenters. The recording will be very soon available on our website.



UPCOMING PROJECT EVENTS:

A new WEBINAR is approaching: **"Presentation of the 5G-IANA test sites (NOKIA and Telekom Slovenia) and the (autonomous) vehicles / OBUs / RSUs features"**. Stay tuned for the date to be announced!



DELIVERABLES & UPCOMING EVENTS

6

Early 2023 has been a busy period, 5G-IANA project has submitted a new round of deliverables:

5G-IANA – D6.1 - Market analysis and initial business models

5G-IANA – D1.5 - Data management plan V2

5G-IANA – D4.1 - First report on 5G-IANA NetApp Toolkit and VNFs Repository development

5G-IANA – D7.3 - Communication strategy and plan V2

5G-IANA – D7.5 - Communication tools V2

5G-IANA – D7.7 - Exploitation plan

All 5G-IANA public deliverables are available online for download at our website: 5g-iana.eu/resources/.

RESOURCES

Public deliverables
download at our [website](https://5g-iana.eu/resources/)



5G-IANA project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101016427.



The 5G Infrastructure Public Private Partnership

7 Future Events



ITS European Congress

Lisbon (22– 24 May 2023).

5G-IANA will participate in a joint Special Session with 5GMETA, VITAL-5G and 5GASP projects.



IEEE 2023 IEEE International Conference on Communications (ICC). Rome (28-May-01 June 2023).
Paper presentation.

5G-IANA will be present at this conference, presenting the paper “TAILING: Tail Distribution Forecasting of Packet Delays using Quantile Regression Neural Networks”, co-authored by Amr Rizk and that will be published in the IEEE ICC 2023 Conference Proceedings.



CALL FOR PAPERS Special Session: Leveraging Data in Connected, Cooperative and Automated Mobility (CCAM) enabled by Edge and Cloud

5G-IANA partner Vicomtech is organising a Special Session about “Leveraging Data in Connected, Cooperative and Automated Mobility (CCAM) enabled by Edge and Cloud” in the IEEE ITS Conference 2023. All information and key dates are available on our website [here](#).



EuCNC & 6G Summit 2023

6– 9 June 2023, Gothenburg

