5G-IANA: 5G Intelligent Automotive Network Applications

SME WG:

Open Call opportunity for SMEs in the automotive sector

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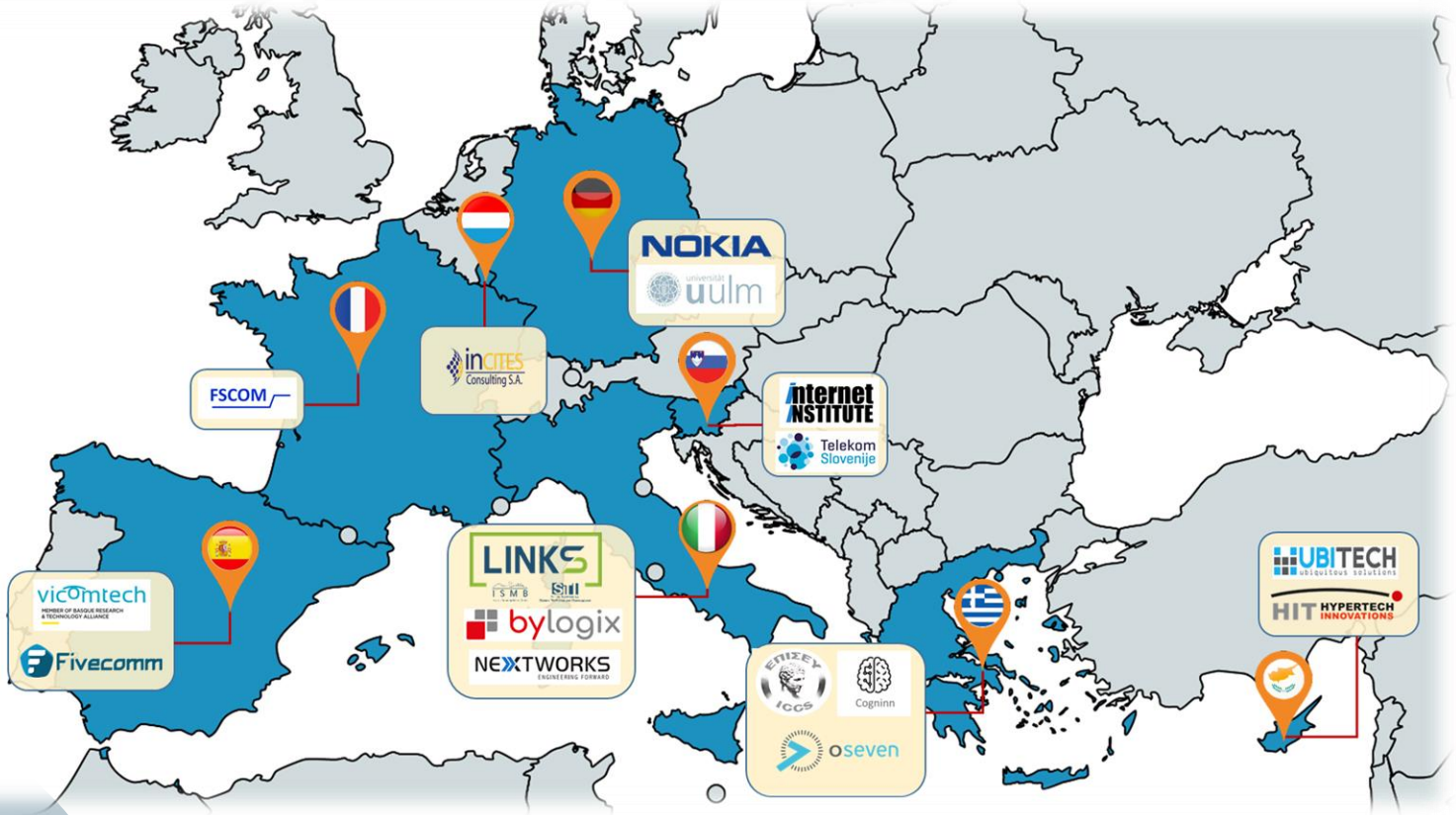
About 5G-IANA



- H2020-ICT-41-2020
- June 2021 to November 2024
- 16 partners from 8 EU countries
- 10 SMEs

From ICT-41-2020 call scope to 5G-IANA

- *Provide enhanced experimentation infrastructure on top of which third party experimenters will test their applications.*
- *Provide an integrated, open, cooperative and fully featured network platform tailored to specific vertical sectors.*
- *Design an open experimental network platform to allow SMEs to experiment.*
- *Create 5G open source repositories for wide use and towards standards development.*
- *Typical vertical use cases include connected and automated mobility, ..., PPDR, ...*

5G-IANA objectives relative to SMEs

- Provide an Automotive Open Experimental Platform (AOEP) at the disposal of “third parties”.
- Implement an open repository environment for nApps and VNFs to ease the design and chaining of new automotive-related services of SMEs.
- Implement and trial Connected and Automated Driving relevant Use Cases to validate and assess the AOEP suitability.
- Create new business opportunities and boost market for start-ups and SMEs with Automotive nApps.

We invite you to leverage our platform!

Motivation for SMEs

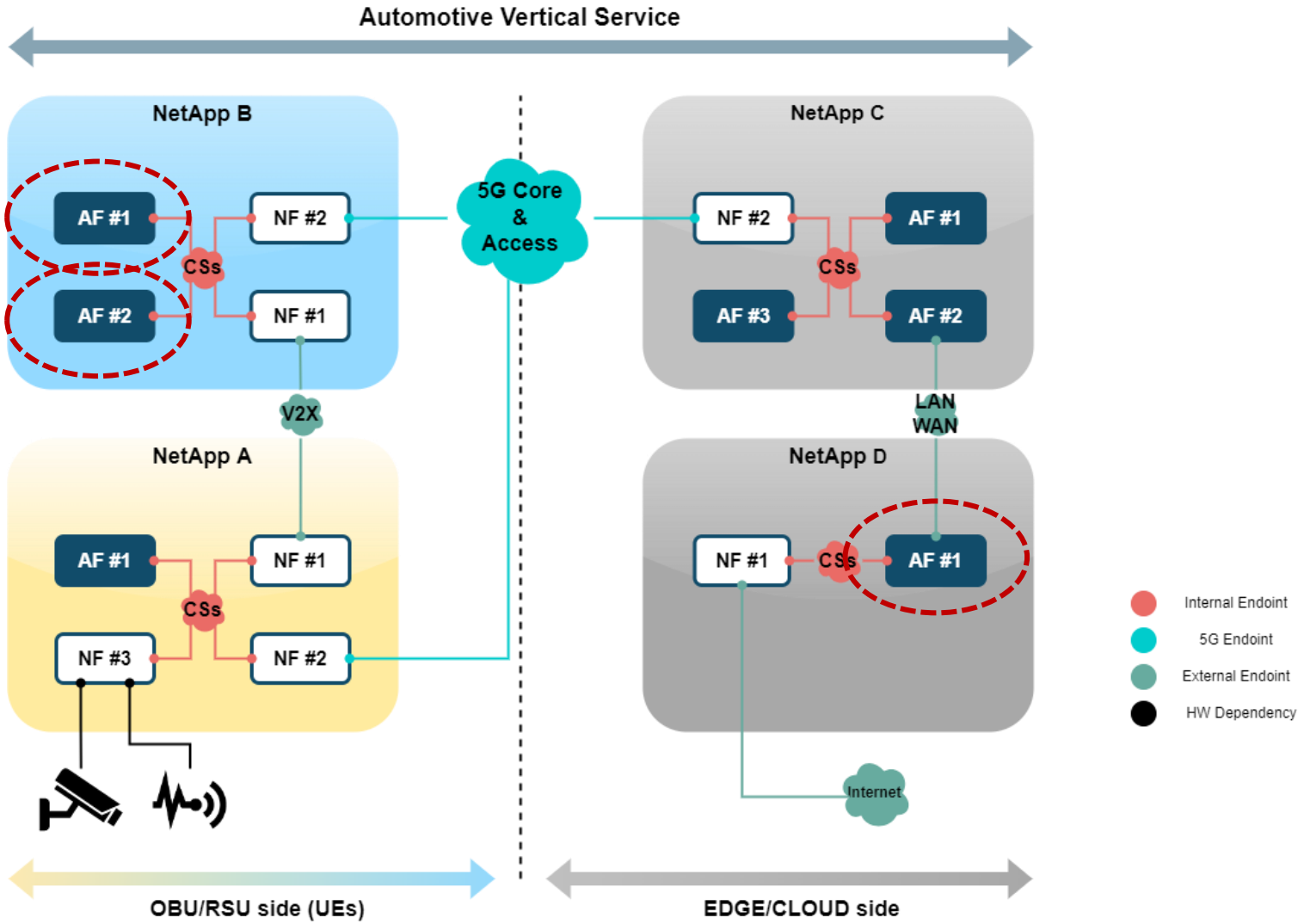
- How can you benefit from leveraging our platform?
- What do we offer to you?
- What do we expect from you?
- How can you practically get involved?

But first a few technical terms…

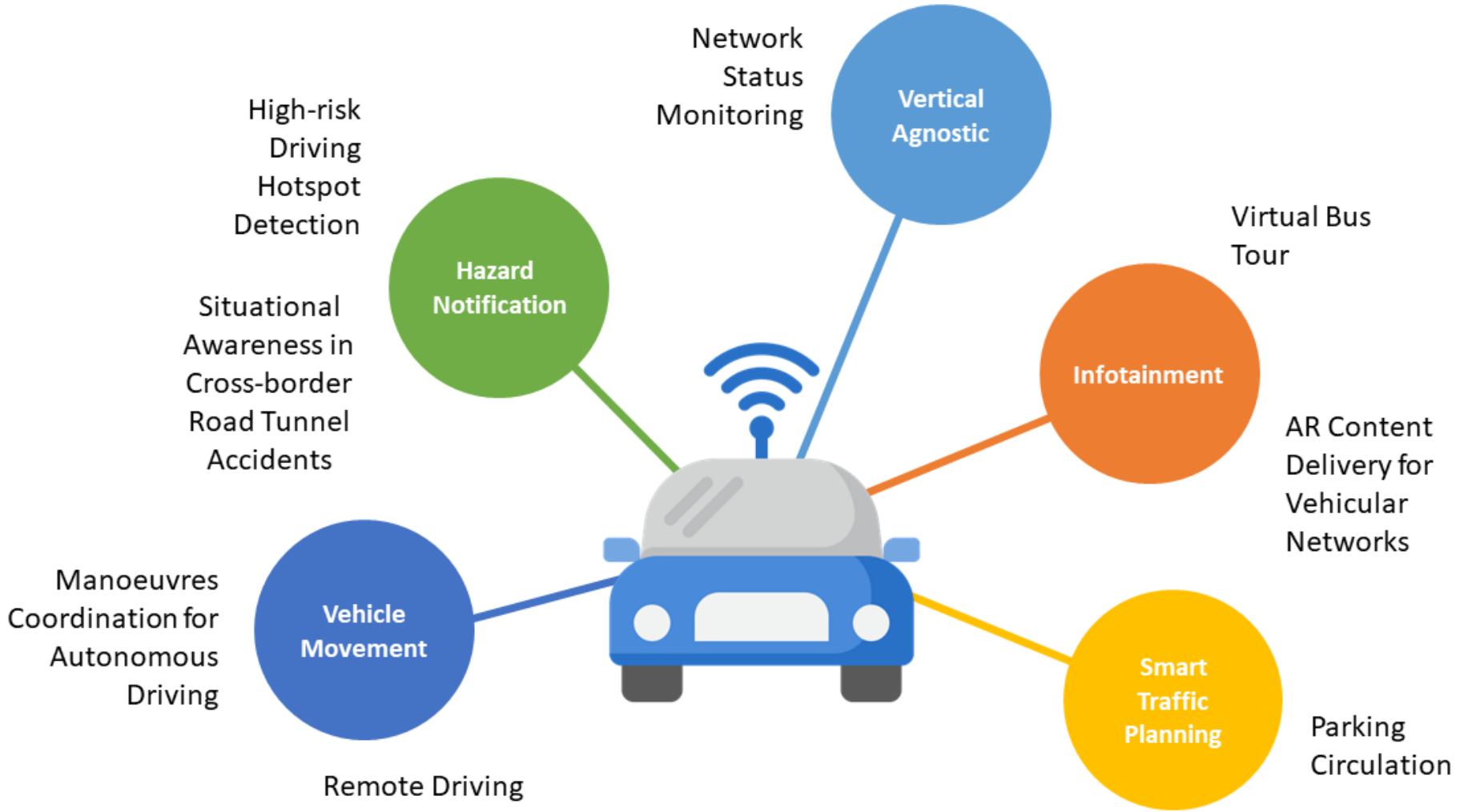
Network Application “nApp” concept

- A nApp is a virtual application that can be deployed in a 5G infrastructure and can use 5G services (e.g., connectivity)
- It implements and exposes a specific service
- A nApp can be composed by one or multiple application and/or network functionalities
  - Application Functions (AF) → *implement the Vertical Service logic*
  - Network Functions (NF) → *implement the network/communication functionalities*
- An Automotive Vertical Service can be composed by one or multiple nApps

“nApp” communication



Automotive application (nApp) categories



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Use cases

UC1

Remote driving

UC2

Manoeuvres coordination for autonomous driving

UC3

Virtual bus tour

UC4

AR content delivery for vehicular networks

UC5

High-risk driving hotspot detection

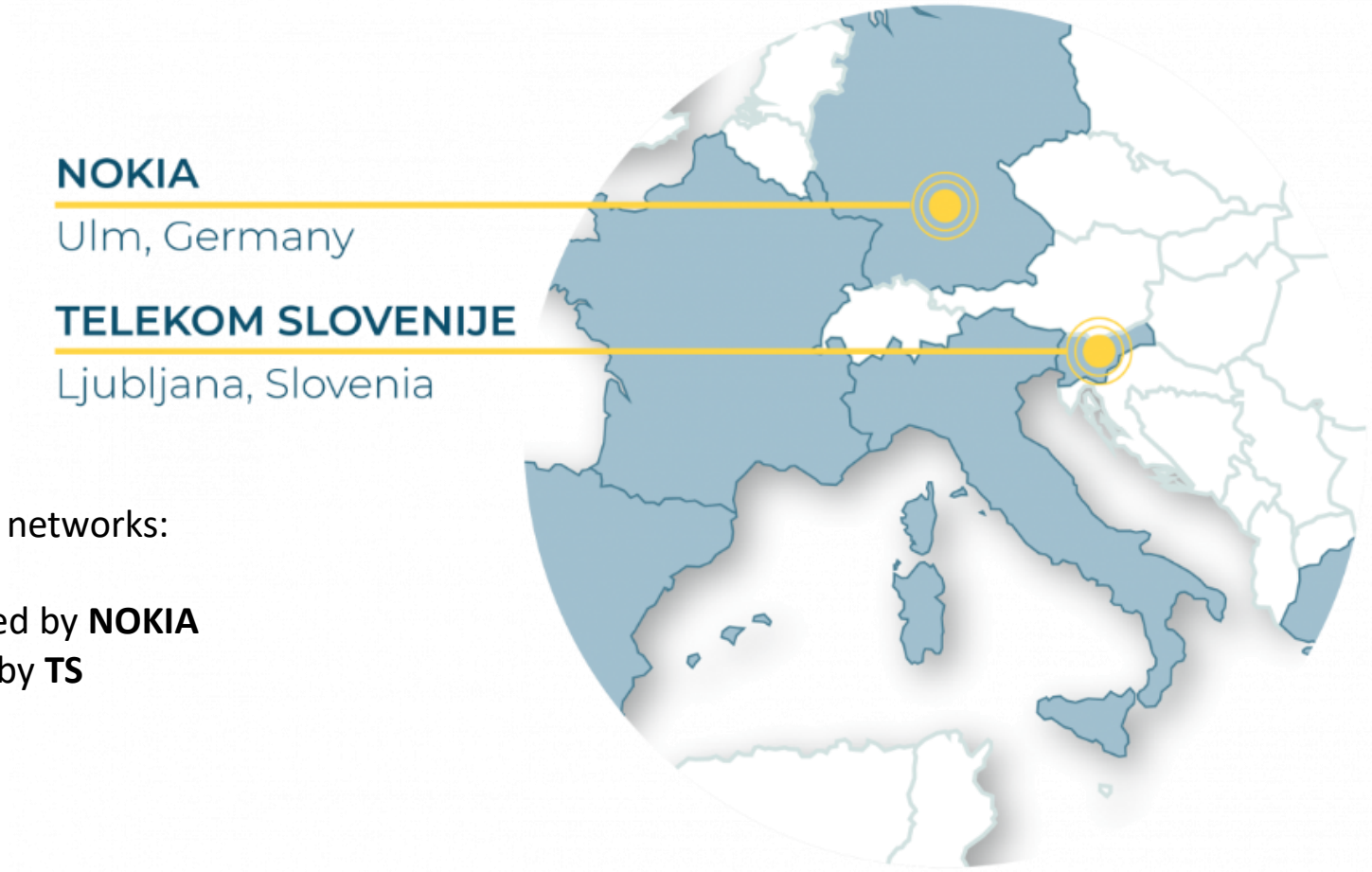
UC6

Network status monitoring

UC7

Situational awareness in cross-border road tunnel accidents

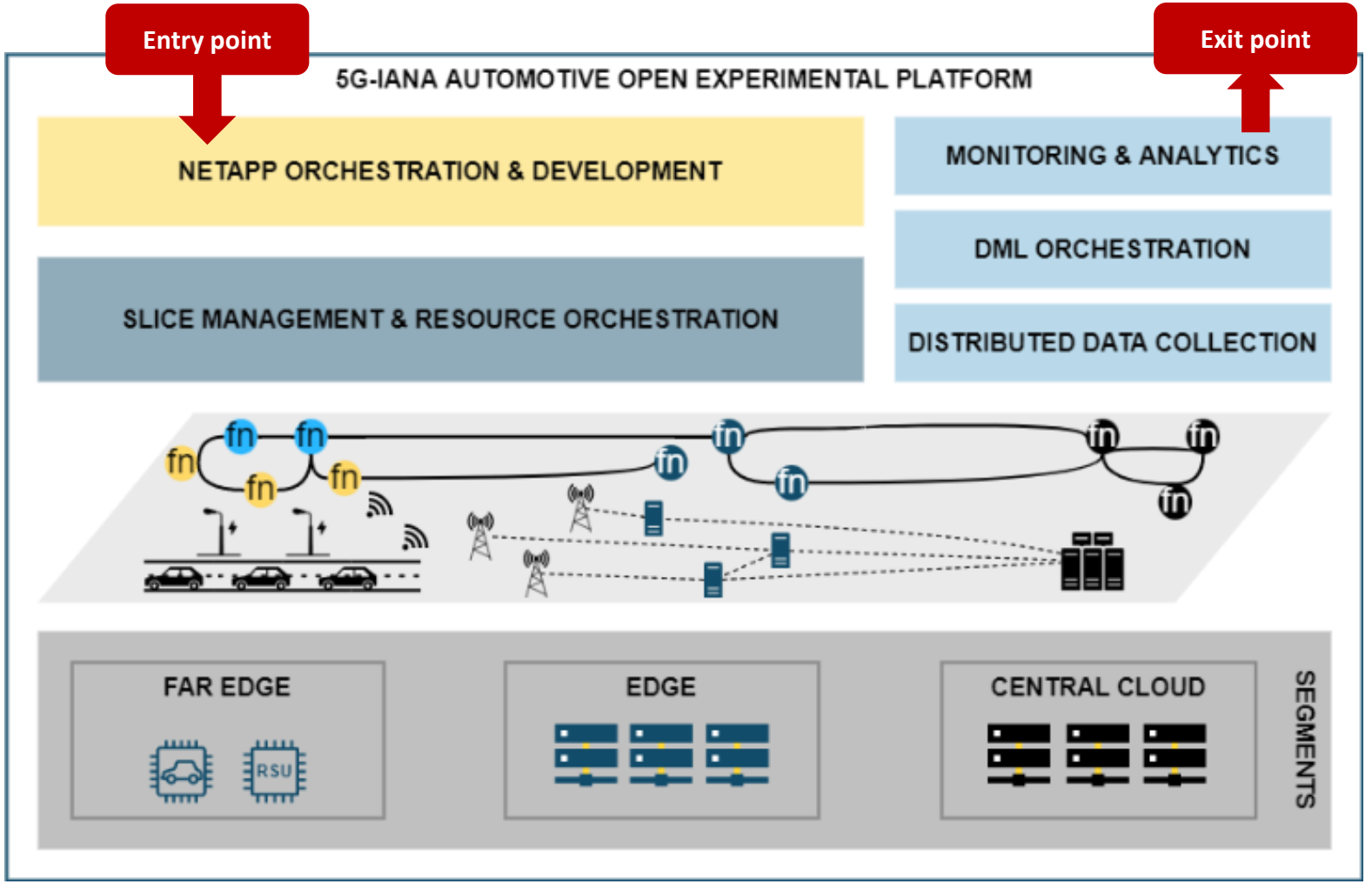
Testbeds



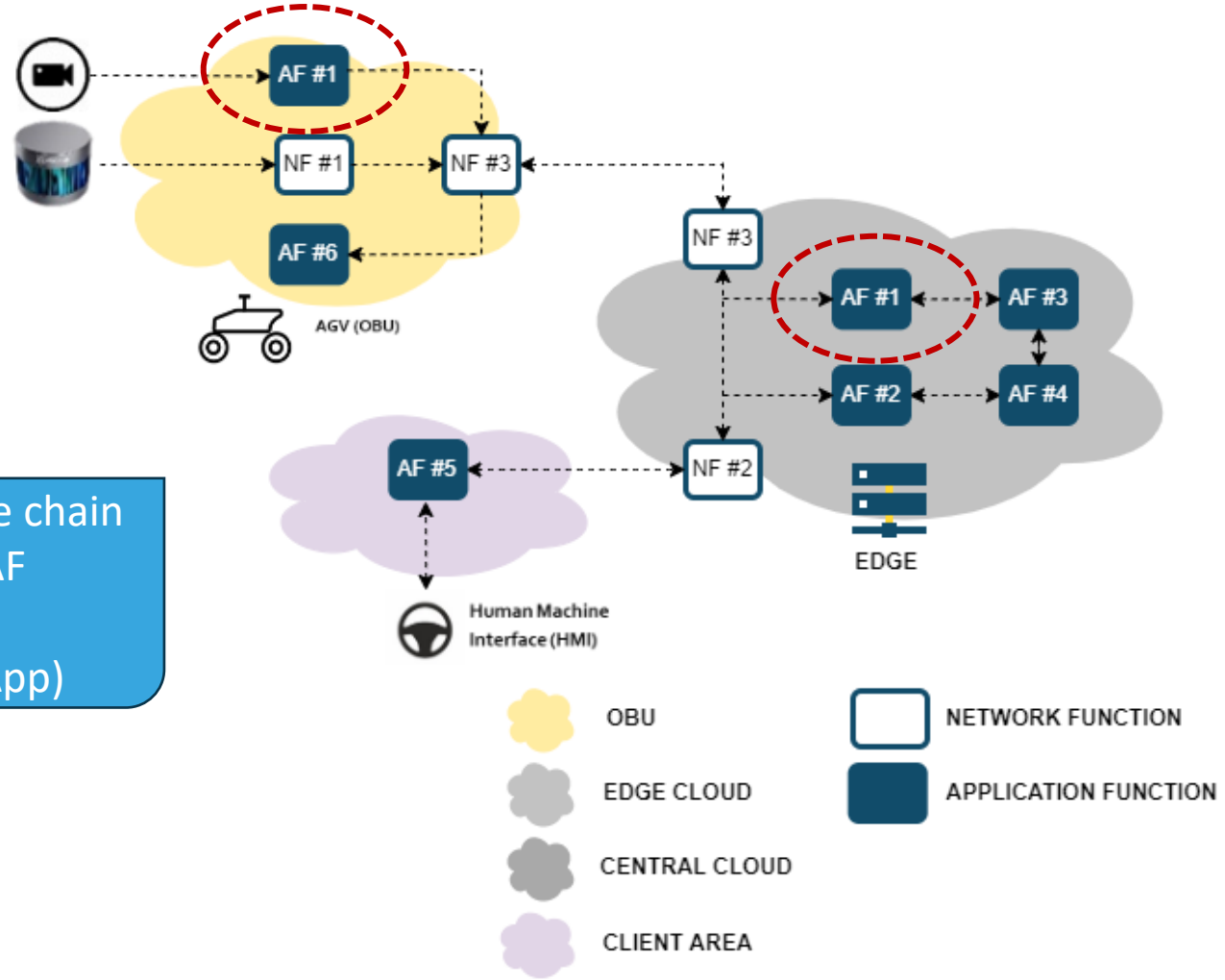
5G-IANA will utilize 2 different 5G SA test networks:

- One in City of **Ulm (Germany)** operated by **NOKIA**
- One in **Ljubljana (Slovenia)** operated by **TS**

Abstracted architecture

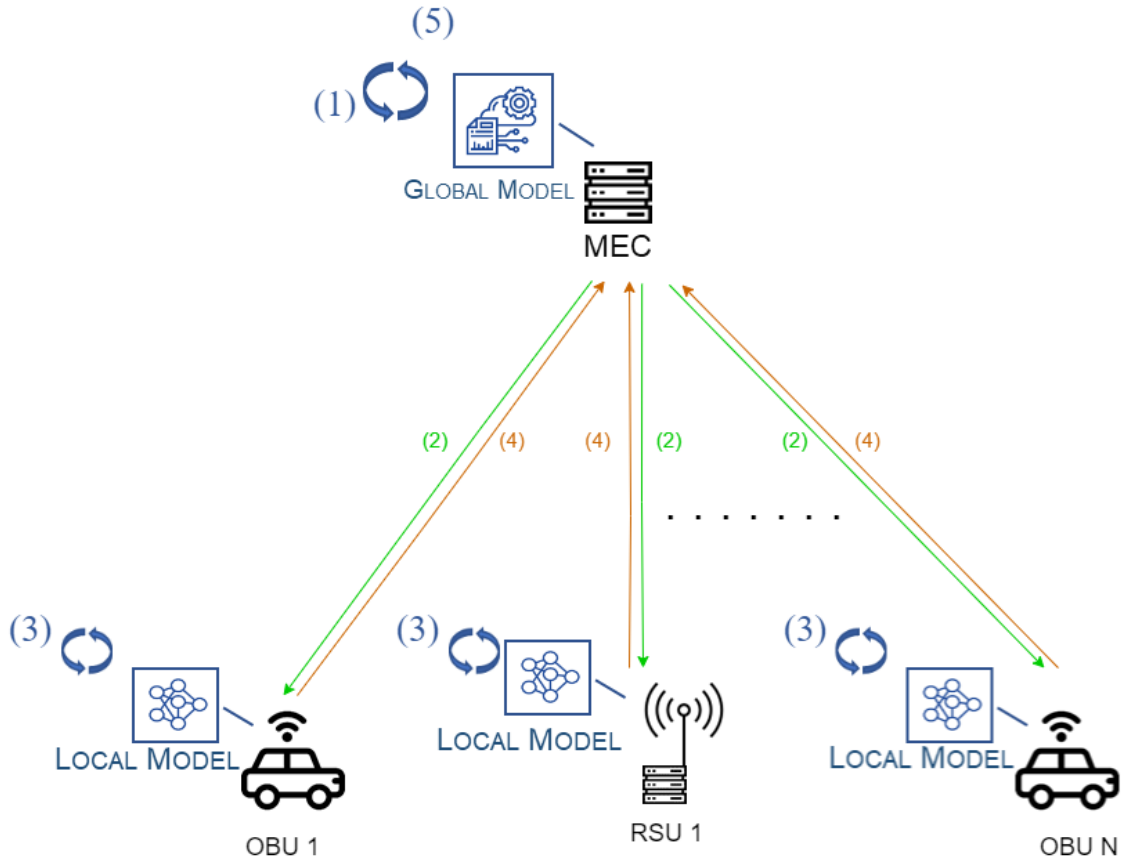


Example: Remote driving

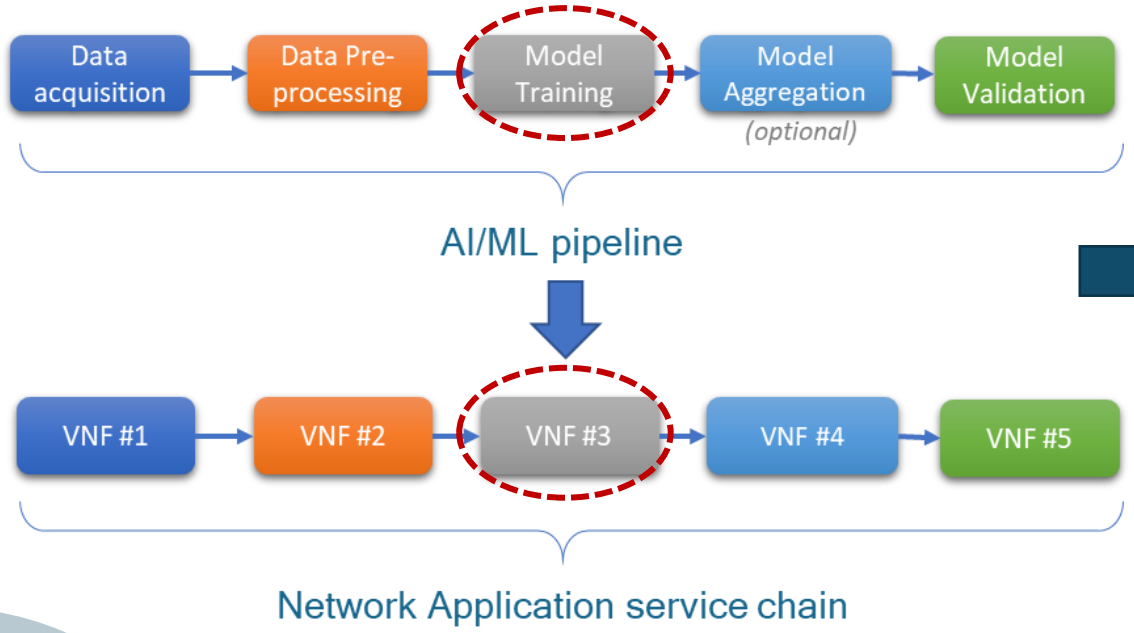


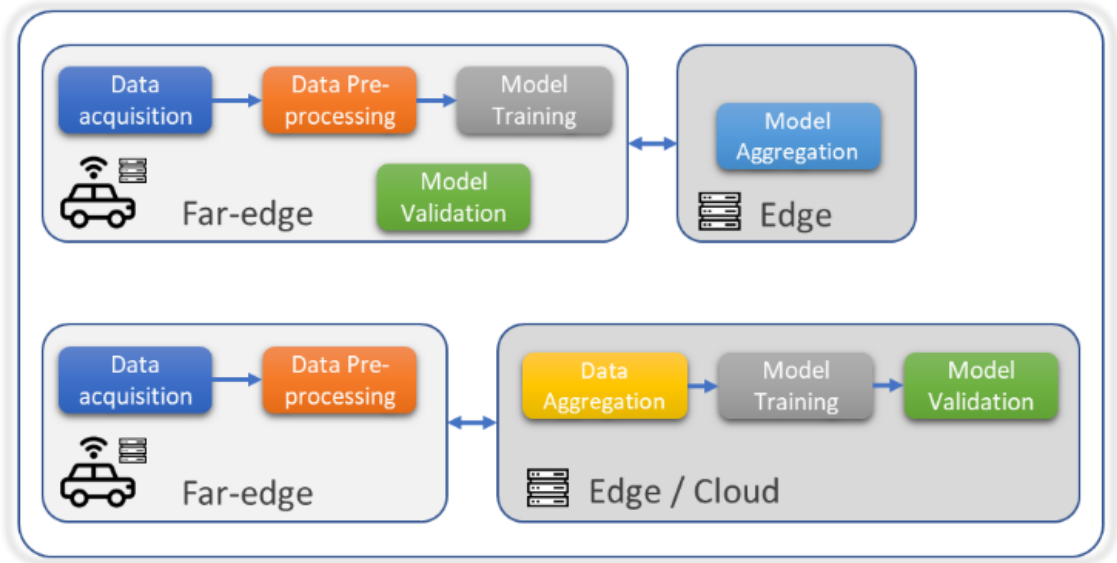
New AF in existing service chain
Update to existing AF
New algorithm
New service chain (nApp)

Example:
Distributed ML – Federated Learning framework enabled through 5G-IANA



Distributed ML orchestration





Potential SME profiles

- Infrastructure providers who provide different types of resources such as MNOs, Cloud Providers and Road Infrastructure operators
- Vendors who provide either HW or SW to all other actors
- Vehicle manufacturers (OEMs) who provide the vehicles
- Service developers who include all types of service creators and research centres
- Network Application-related players who include both nApp developers and providers
- Service providers that provide the service to users

What we offer to you

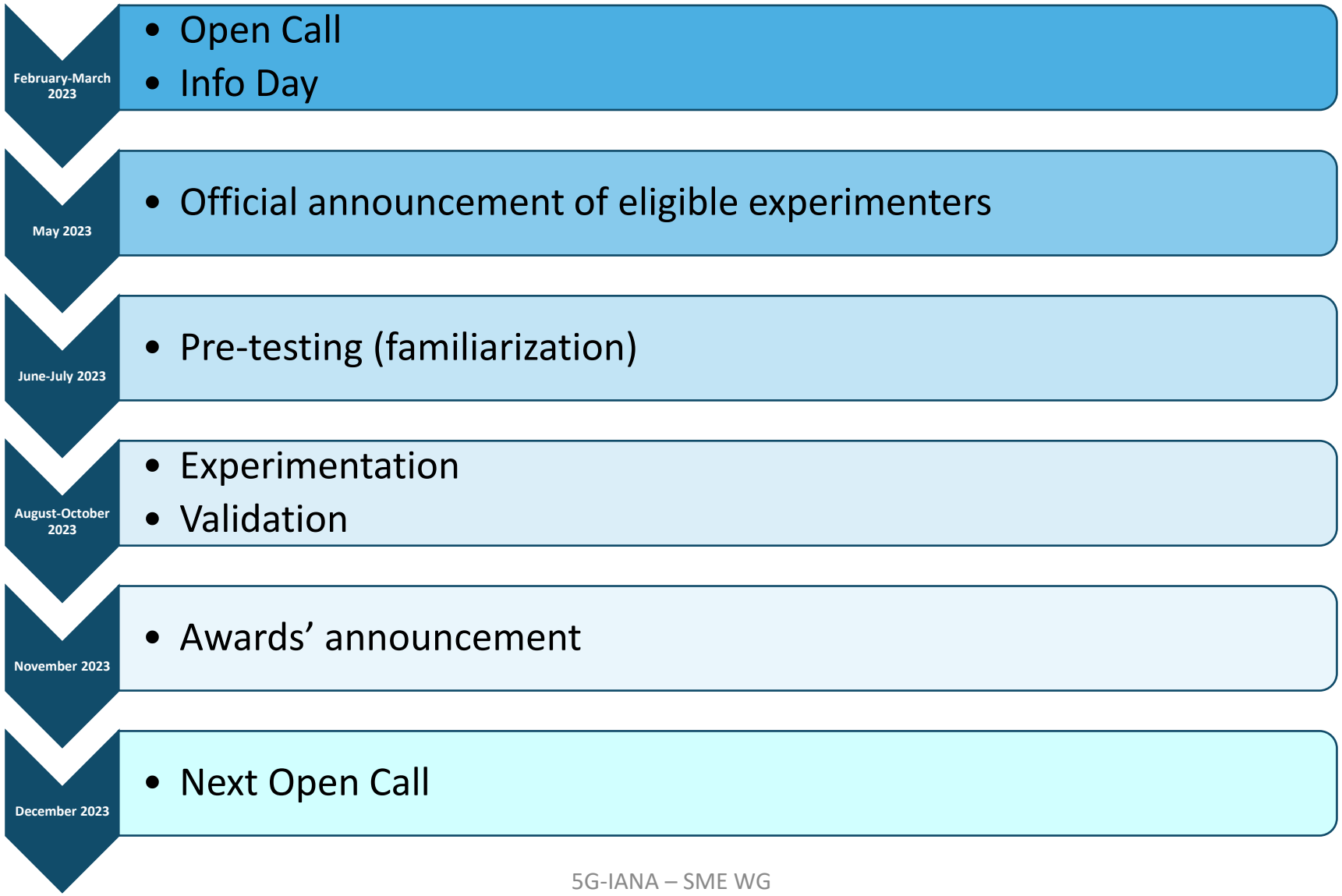
We are offering you the mechanisms to easily design distributed intelligent services, which span from the remote cloud to the far-edge segment, and request their provisioning on top of 5G-enabled infrastructures

- ✓ A platform to develop, deploy and test your services
- ✓ A catalogue of available AFs/NFs (~*70*) and Network Applications (nApps) (~ *25*)
- ✓ Tools to prepare & onboard your own AFs, NFs or nApps on the 5G-IANA platform
- ✓ Remote accessibility to 5G resources
- ✓ Accessibility to OBU/RSU resources
- ✓ Support to AI/ML-oriented services
- ✓ Technical support material (manual, videos)
- ✓ Mentorship and technical assistance
- ✓ Business model mentoring
- ✓ At least 3 prizes of ~10-15K each to selected SMEs

Expected impact to SMEs

- Gain access to a “canvas” to develop new functions and services in the automotive 5G landscape
- Test your services with 5G connectivity (offline → online)
- Get continuous mentorship and support
- Explore new business models within the 5G ecosystem

Open Call timeplan



OPEN CALL

STAY TUNED!

We invite SMEs and start-ups to run their automotive network applications on top of the platform provided by 5G-IANA project, making use of 5G connectivity!

If you would like to:

- Express your early interest
- Explore more details about how/whether our platform can fit and address your needs
- Stay updated about the Open Call

Please contact us:
info@5g-iana.eu

twitter.com/IANA_5G
linkedin.com/company/5g-iana
5g-iana.eu

www.5g-iana.eu

Thank you for your attention!

Any questions?

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