5G INDUCE

Open cooperative 5G experimentation platforms for the industrial sector NetApps

www.5G-induce.eu

5G PPP Software Networking WG
Online meeting
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5G-INDUCE Project Overview

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UBITECH ubiquitous solutions

This project has received funding from the European Union's Horizon 2020 Research and Innovation programme under grant agreement No. 101016941

Agenda

Background

Main idea

Architecture & interfaces

Use cases

5G-INDUCE background

- Industry 4.0
  - Originally rely on locally installed smart IoT monitoring and automated control technologies **but**…
  - Smartly interconnected and collaborating infrastructures offer even more advanced capabilities in
    - Manufacturing process optimization
    - Supply chain optimization
    - Offering of added value services (maintenance, surveillance, security, safety, …)
- 5G systems as the enabler
  - 5G meets the unique Industry 4.0 requirements and KPIs
    - Latency, Bandwidth, Modularity,…
  - 5G provides the overall framework platform for the porting and deployment of advance applications
    - Apps move beyond the strict limits of an industry
    - Can be tailored made or specially adapted apps

5G-INDUCE in a nutshell

- 5G-INDUCE
  - Open cooperative 5G experimentation platforms for the industrial sector NetApps
  - Visit: https://www.5g-induce.eu/
- GA No: 101016941
- Duration:
  - 1st Jan. 2021 – 31st Dec. 2023
- Call:
  - ICT-41-2020: 5G PPP – 5G innovations for verticals with third party services
- Budget:
  - ~6M€ (~8M€ total cost)

Consortium

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UBITECH ubiquitous solutions
OTE
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3
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Whirlpool CORPORATION
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5G-INDUCE objectives

Objective 1 — **NetApp porting platform**

- Refers to the mechanism for deploying NetApps including the adaptation framework for NetApps to the platform structure for seamless porting.

Objective 2 — **5G end-to-end orchestration framework platform**

- Refers to the overall orchestration platform including a) the NAO, b) OSS and c) control plane layers.

Objective 3 — **Experimentation facilities for NetApp validation**

- Refers to the building the experimentation facilities including: the provisioning of the infrastructure, the deployment of the orchestration platform (obj2) and the porting mechanism (obj1).

Objective 4 — **5G Trials and evaluation**

- Refers to the demonstration actions of the deployed NetApps over the 5G experimentation facilities.

Objective 5 — **Technology watch and business models**

- Refers to the business-related evaluation process and synchronization with standardization and common technology practices.

Objective 6 — **Communication and attraction of 3rd parties**

- Refers to the communication/dissemination activities with emphasis on raising industry awareness and the attraction of 3rd party NetApps over the 5G-INDUCE 5G experimentation facilities.

5G-INDUCE main idea

➔ Bring and extend a complete 5G system platform that includes the mechanisms of:

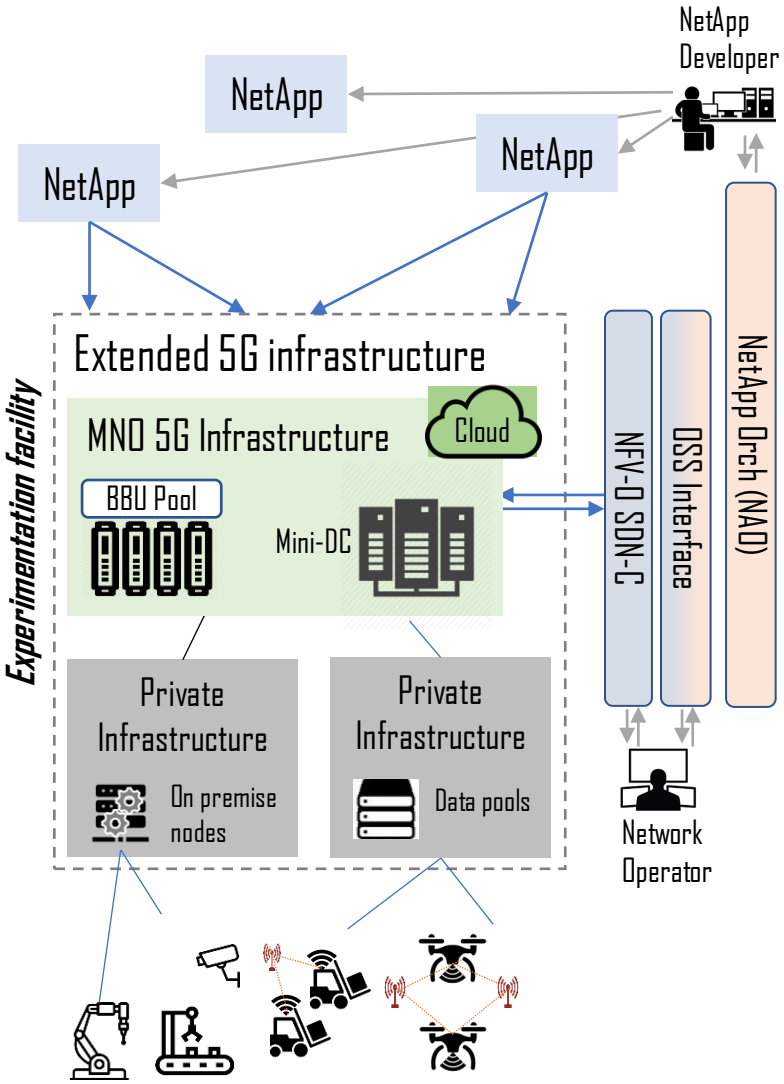
- Service deployment,
- Network management and
- Network resource orchestration

➔ Deploy the 5G system platform and interconnect it with an industrial sector

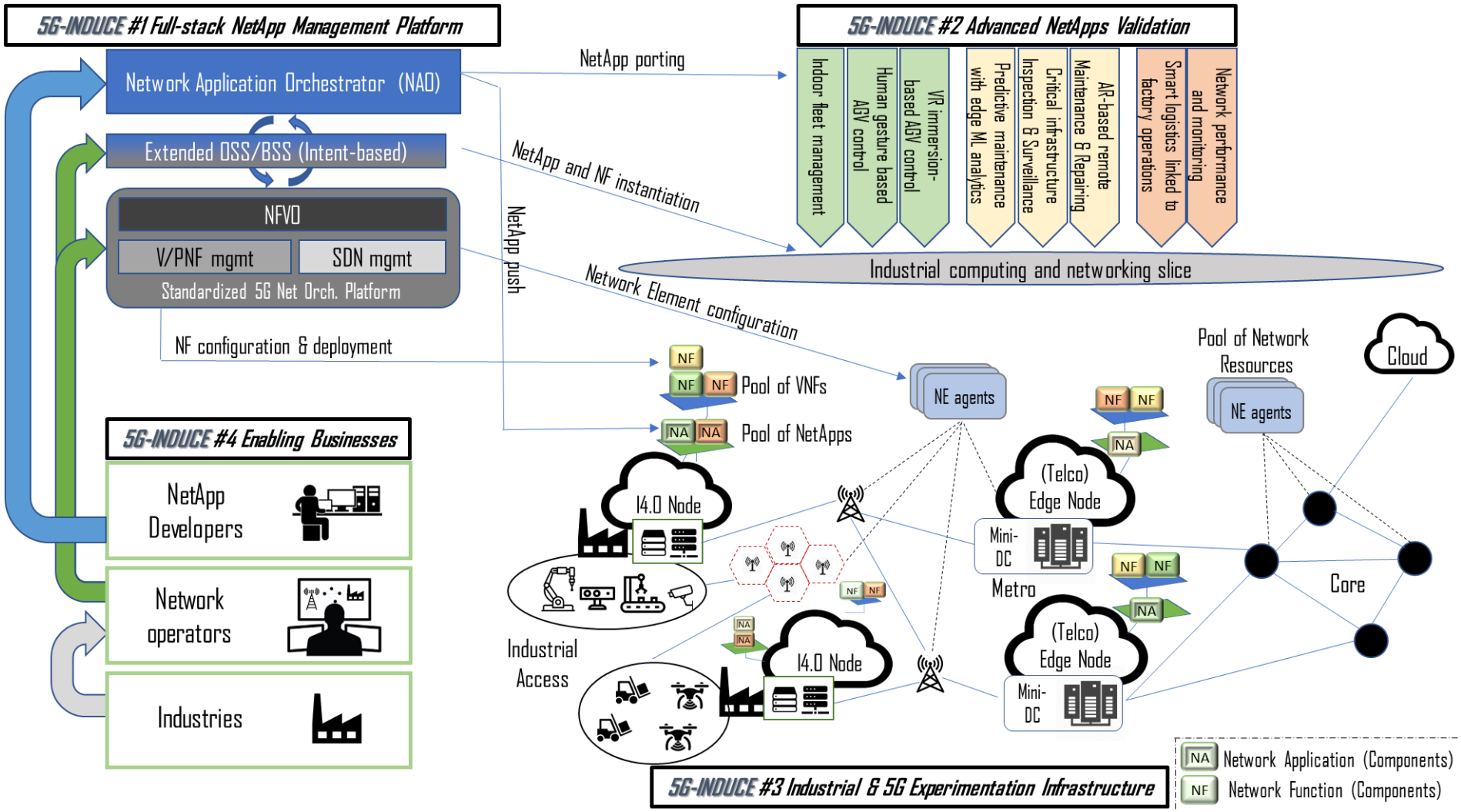
- Creating 5G Experimentation Facilities able to attract and evaluate Network Applications

➔ Demonstrate use cases that highlight

- The 5G system capabilities and functionalities
- The deployed NetApp capabilities and offered services
- The benefits offered to the industry sector



The 5G-INDUCE architecture & interfaces



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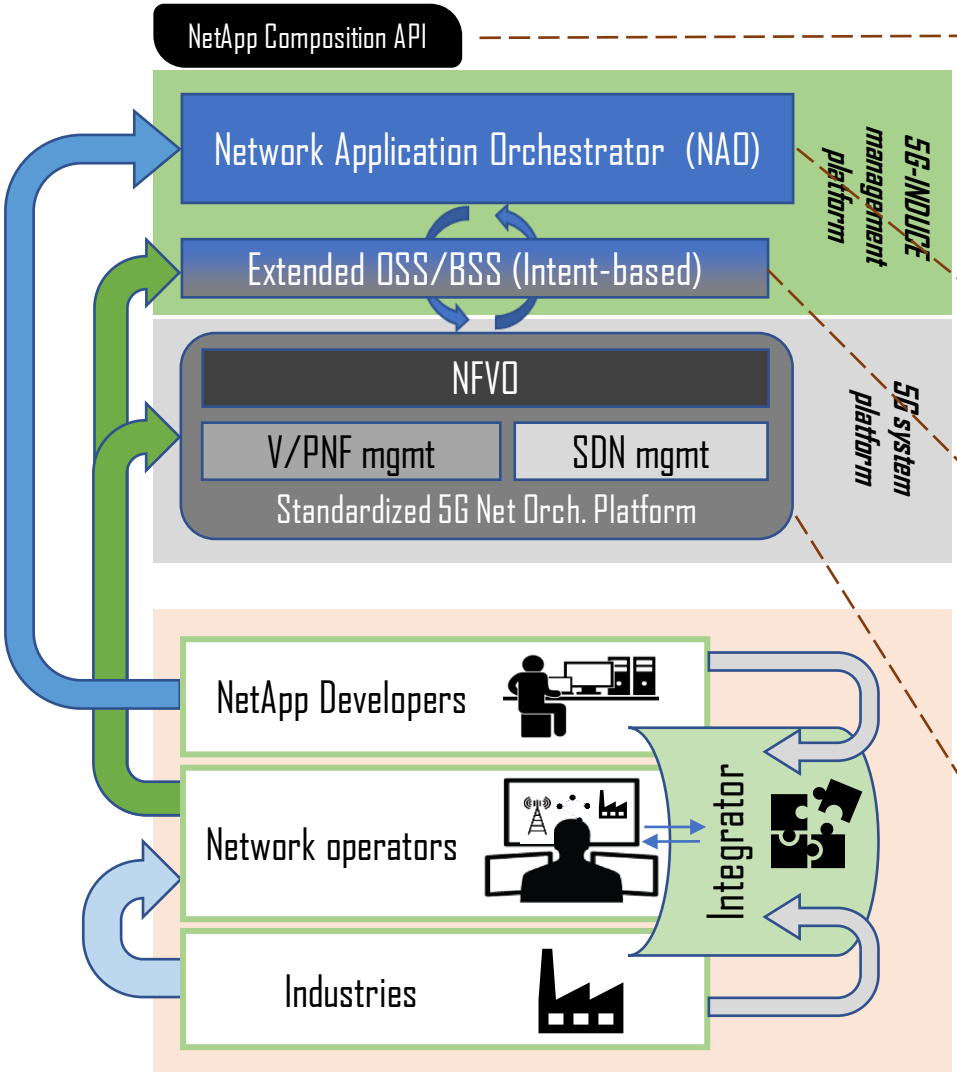
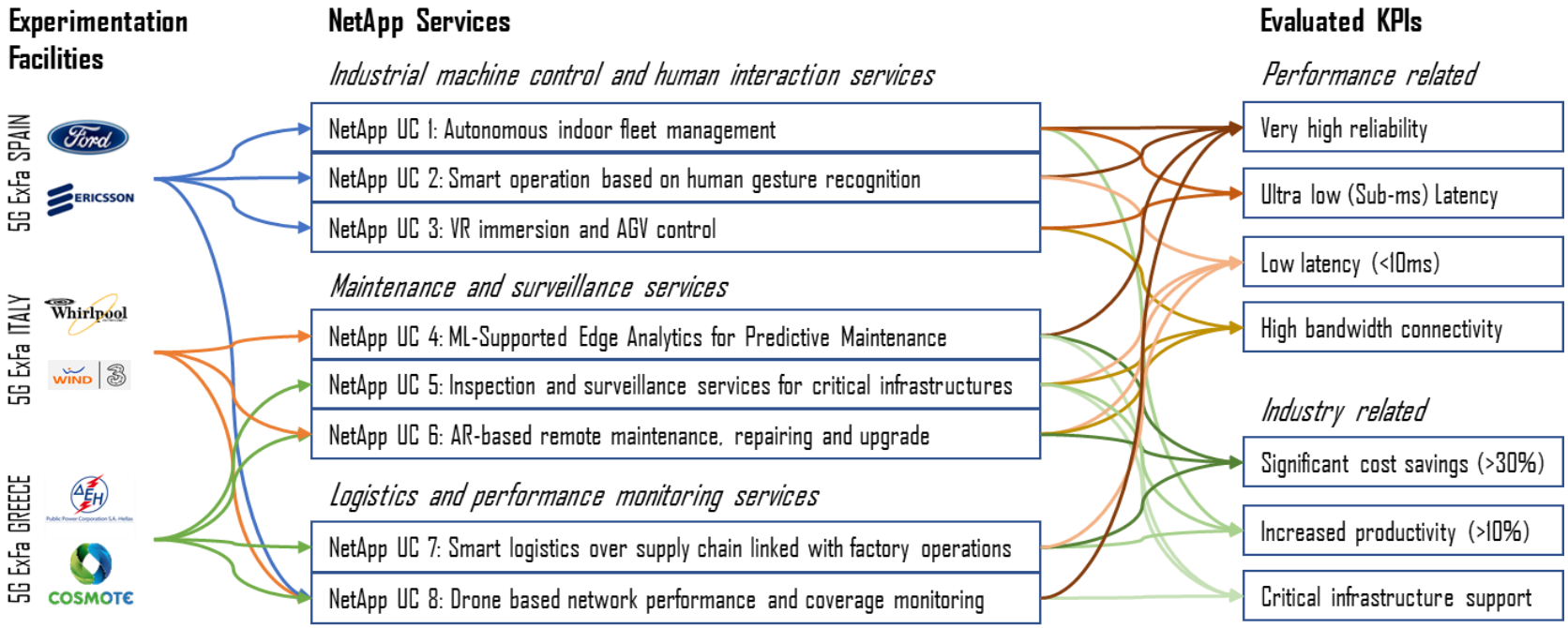


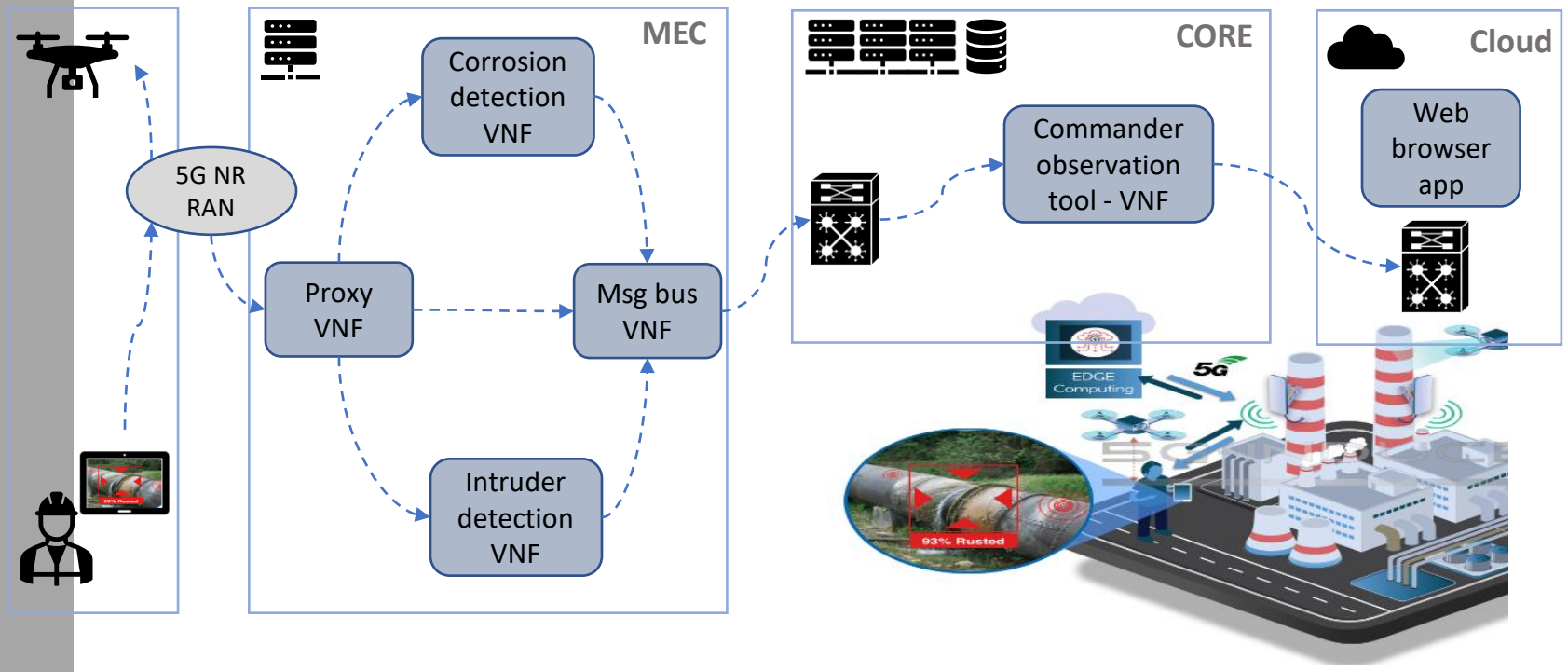
- NetApp preparation
  - Break a required NetApp into cloud-native components
  - Create and upload a docker image per component
  - Build or generate the interconnection of NetApp components
  - Add requirements, per component or NetApp or both
- NetApp porting
  - Slice Intent generation
  - NetApp life-cycle management during run time
  - Polices and Analytics
- NetApp and NF instantiation
  - Fulfil NetApp service deployment requests
    - Identify resources for NetApp components
  - Identify NF and connectivity needs + resource availability
  - Process monitoring
  - Resource optimization
  - Interfacing with VIM/WIM/NFVO
- NF configuration & deployment
- Network Infrastructure configuration

5G-INDUCE use cases



5G-INDUCE use cases

- **UAV inspection** over tank and pipeline infrastructure
- Demonstration of **intruder surveillance** over designated open areas
- Real-time warning while the flying operator is running UAVs in industrial critical infrastructures.
- Complex NetApp service deployment with AI inspection and surveillance running in the edge. Local and remote monitoring.



THANK YOU!

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