

FUDGE-5G

**FULLy DisinteGrated private nEtworks
for 5G verticals**

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Main Technology Innovations for 5G Private Networks

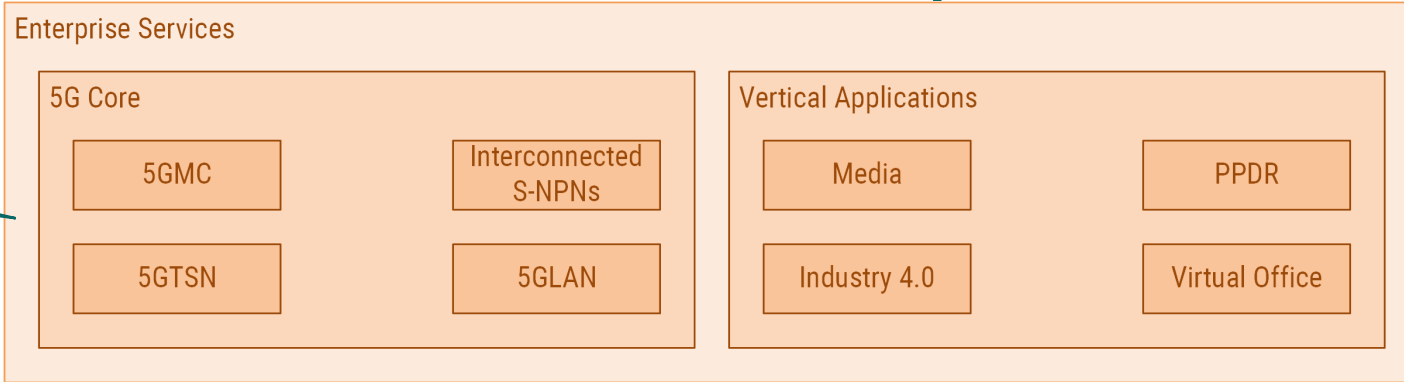
- **5GC NFs as micro-services**
 - New cloud-native 5G NFs to be deployed anywhere (edge, on-premises and cloud)
- **LAN-Native Support in 5G networks**
 - Unified access across fixed LAN, WiFi and 5G (“all Ethernet” access), including 5G-Multicast
- **Interconnecting Standalone Non-Public 5G Networks**
 - Not supported by current 3GPP specifications
- **Unified Service Based Architecture for 5G NPNs**
 - SBA for the user data plane, in addition to the control plane
- **Integration between Public and Non-Public 5G Networks**
 - 5G-VINNI as public network and FUDGE-5G as non-public network
- **5G-TSN (Time Sensitive Networking)**
 - Time synchronization on top of 5GLAN
- **5GC deployments on Public/Private Clouds, hybrid, etc.**
- **Multi-vendor 5GC deployments**
- **Subscription concealed identifier (SUCI)**





FUDGE-5G Platform Component Overview

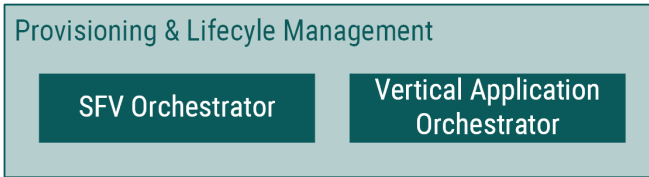
5GC innovations



Stakeholder-driven vertical applications

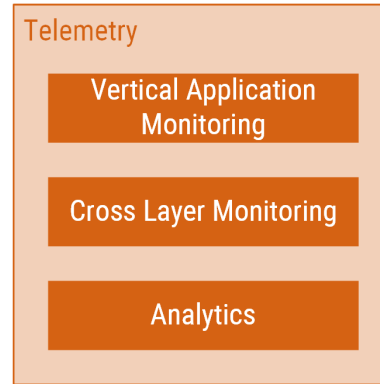
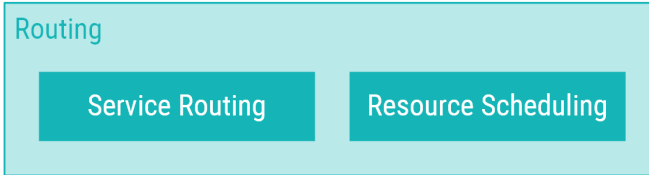
Service Layer

Evolution of NFV for location-aware cloud native orchestration of Enterprise Services



Cross-layer monitoring and analytics for lifecycle management purposes of Enterprise Services

Novel service routing and resource scheduling for 5GC NFs



Platform Layer

Programmable and flexible Service Slicing

Support for SDN-based CP & UP

Unified Access Domain

SDN

Infrastructure Orchestration


Infrastructure Layer

F5G platform orchestration into NFV-enabled infrastructures

Unified all-Ethernet access



FUDGE-5G Use Cases


Concurrent Media Delivery

This Use Case will provide multimedia content using Multicast in Unified eSBA and 5GLAN. Showcase Interoperability between NFs





PPDR

The PPDR Use Case will showcase the customization and flexibility capabilities of all-in-one 5GC, as standalone (5G "bubbles") or with 5G Backhaul


5G Virtual Office

This Use Case will unify the devices and services inside an hospital and make them accessible via 5G, ensuring data isolation.

Industry 4.0

This Use Case will deploy a 5GLAN featuring 5G-TSN for robotics in a factory environment, providing low latency and high precision clock synchronization across the 5G network



Interconnected NPNs

This Use Case will illustrate the benefits of 5G + WiFi for private Networks. Devices access privileged content and services across access networks





Consortium

x12 Partners, x10 Countries

High-Tech SMEs (x6)

- ATHONET
- Cumucore
- ONE2MANY
- UBITECH
- OneSource
- FIVECOMM

Technology Vendors (x3)

- THALES
- InterDigital
- HUAWEI

Research Institute (x1)

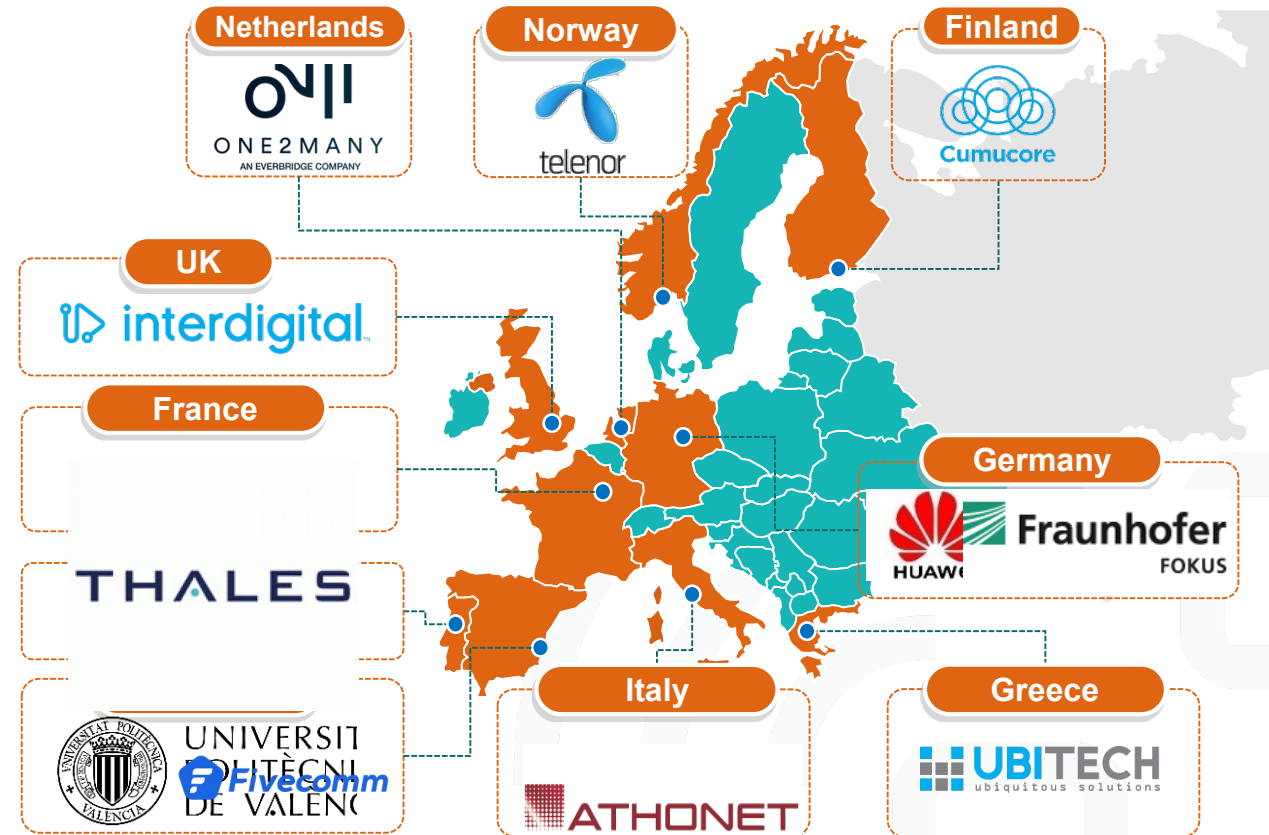
- Fraunhofer FOKUS

Public University (x1)

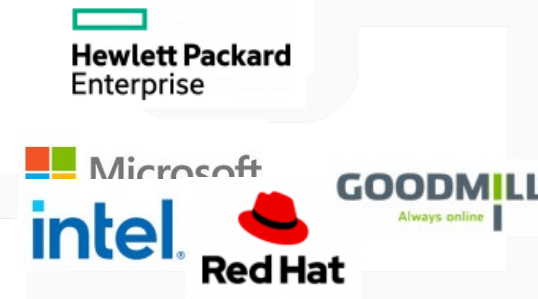
- Universitat Politècnica de Valencia

Mobile Operator (x1)

- Telenor



Advisory Board



Vertical Stakeholders

Technology Experts

Cloud-Edge Solution Providers

Vertical Solution Providers



Thanks for your attention!
Any questions?