

5G Media – Serverless platform for implementation and operation of advanced services

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5G  MEDIA



Outline

- 5G Media
 - project
 - vision
 - use cases
- 5G-MEDIA architecture
- UC1 Tele-immersive media
 - goal
 - testbed
- Conclusion



5G Media project



- 5G Media: *Programmable edge-to-cloud virtualization fabric for the 5G Media industry*
- H2020-ICT-2016-2
- 1/6/2017



GROUP OF COMPANIES



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5G Media vision

- **Motivations:** Fast-growing Media & Entertainment vertical industry
 - 5G for high performance network services, high volumes, Any Device, Anytime, Anywhere, QoS
 - Telcos, manufacturers and media content providers are looking for solutions to design and deploy media functions for replication, distribution and adaptation of media contents
- **Our focus:** Consolidate/build an orchestration and DevOps platform for network media services and applications running on 5G networks

SDK and DevOps
environment for
Media Application

Hide the complexity of service development and deployment on the underlying 5G network and distributed cloud infrastructure

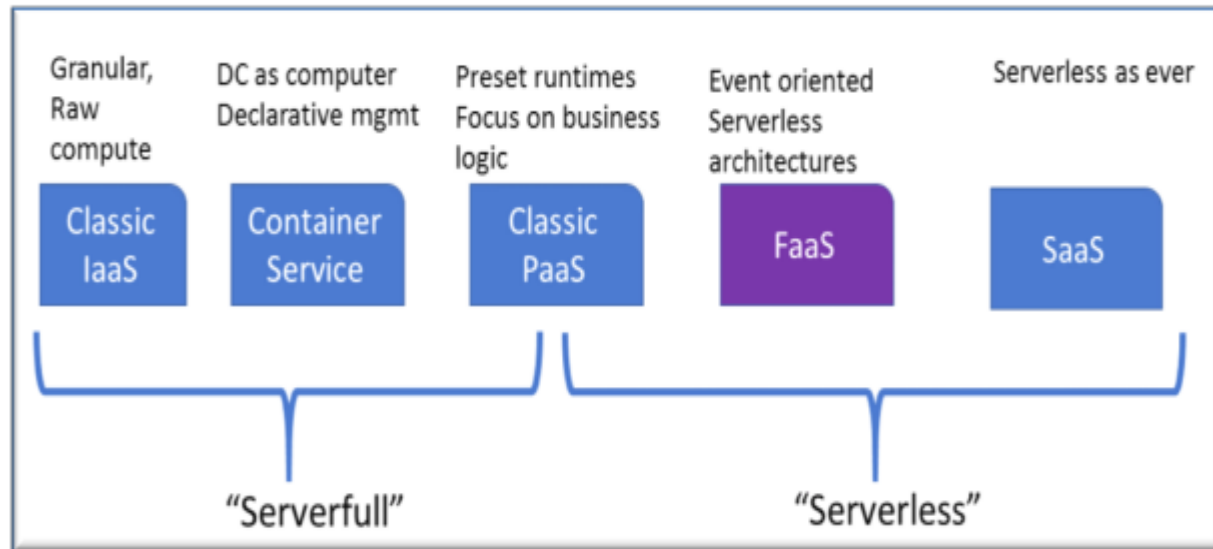
Service
Virtualisation
Platform

Orchestrate the deployment and scaling of media applications, interacting with the underlying network for dynamic control of resource by applying machine learning and cognitive optimisation



Serverless programming model

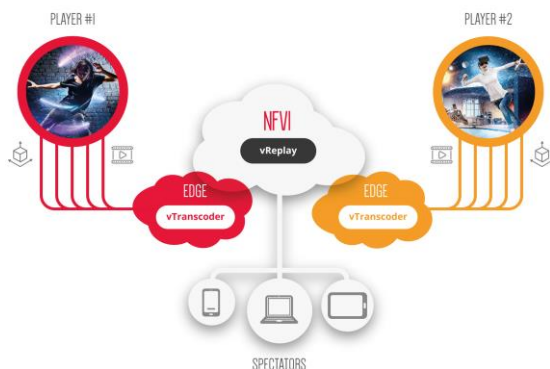
- One of the **project innovations** is the **integration of the serverless computing approach**
- **Function-as-a-Service (FaaS)**



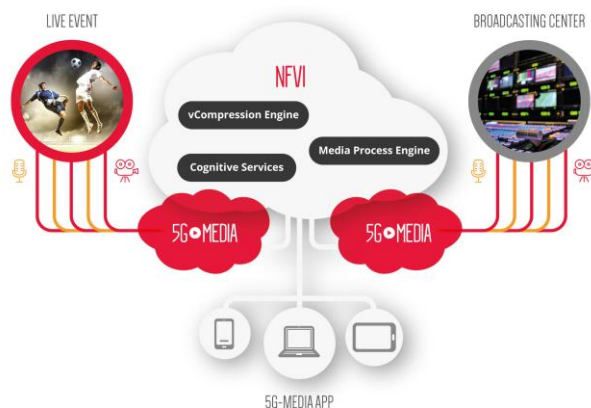


5G Media Use Cases

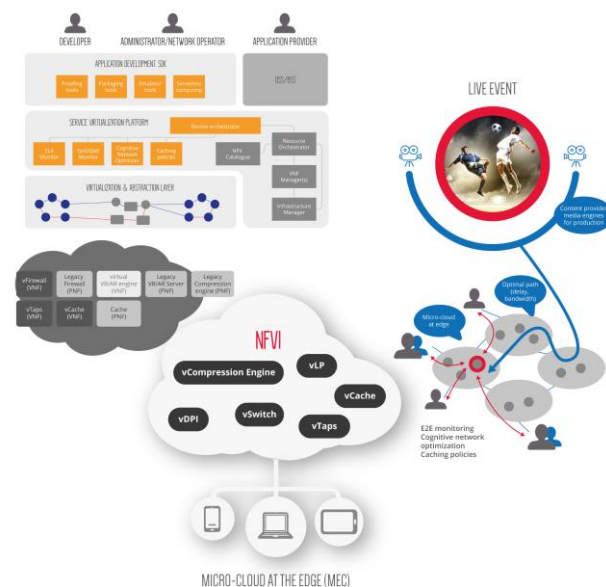
Use Case 1 Tele-Immersive Media



Use Case 2 Smart + Remote Media Production

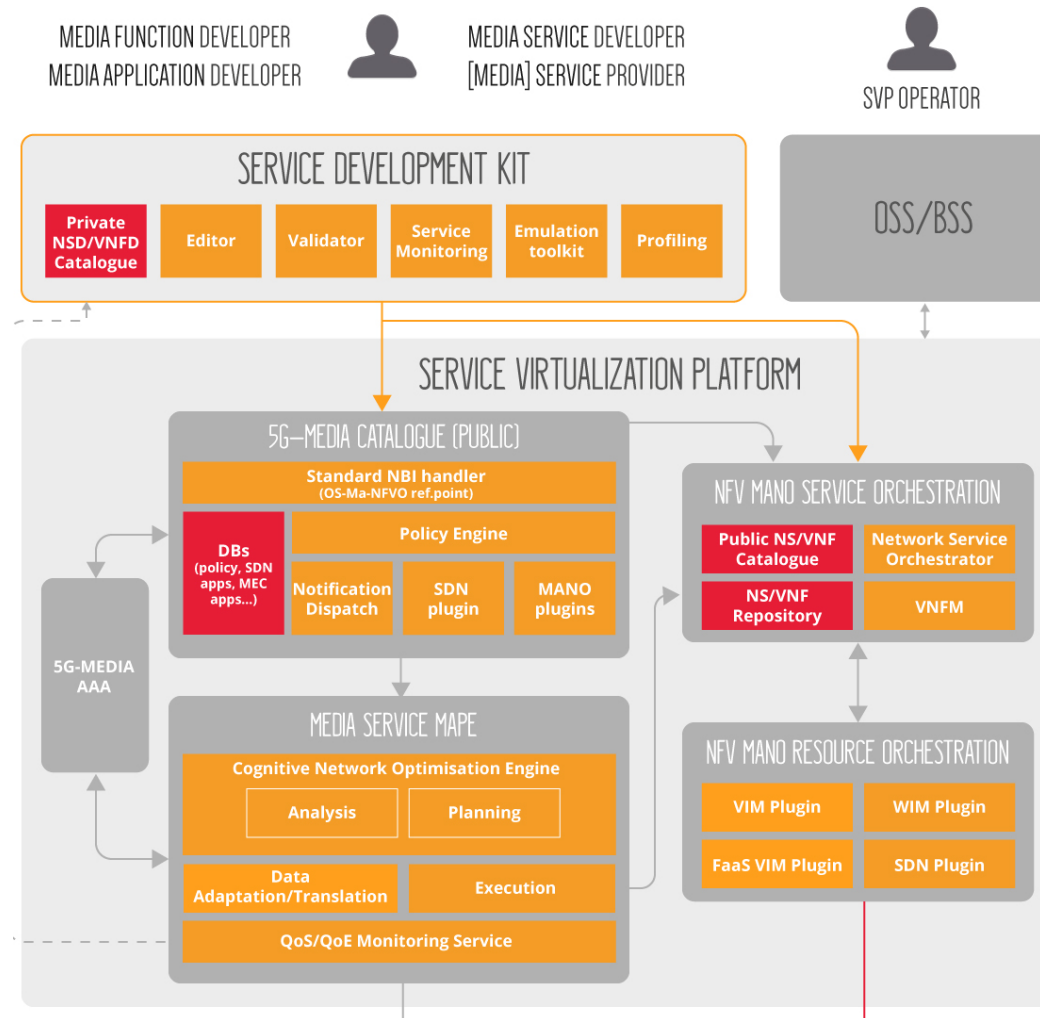


Use Case 3 UHD over Content Delivery Network





5G Media architecture



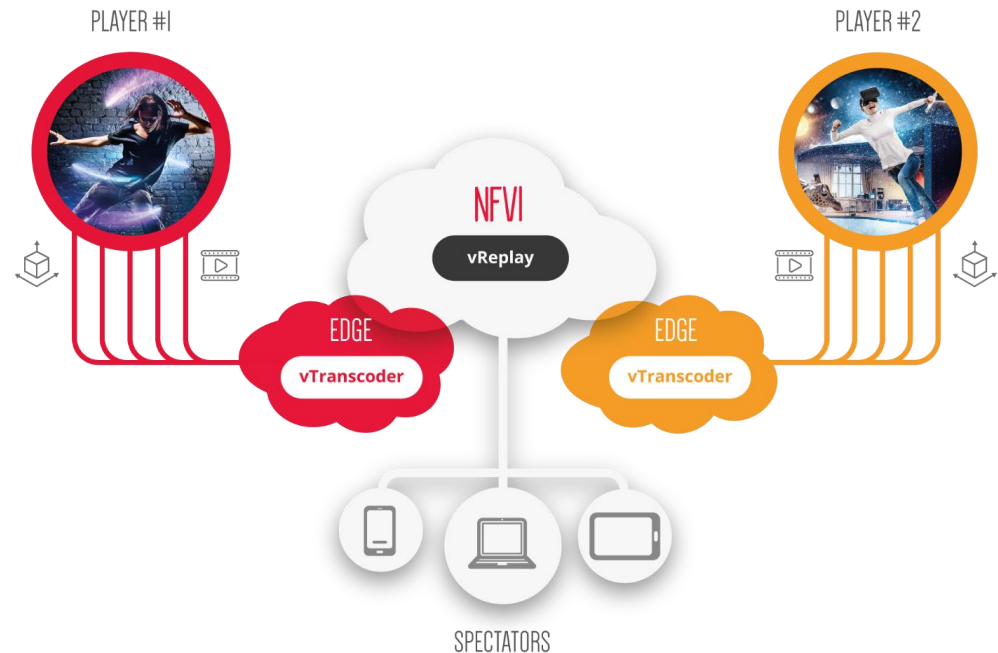


Use Case 1: Immersive applications and Virtual Reality

Goal: Ensure Quality of Experience for real-time multi-party applications, enabling HQ 3D virtual reconstructions of users

Required 5G-powered features:

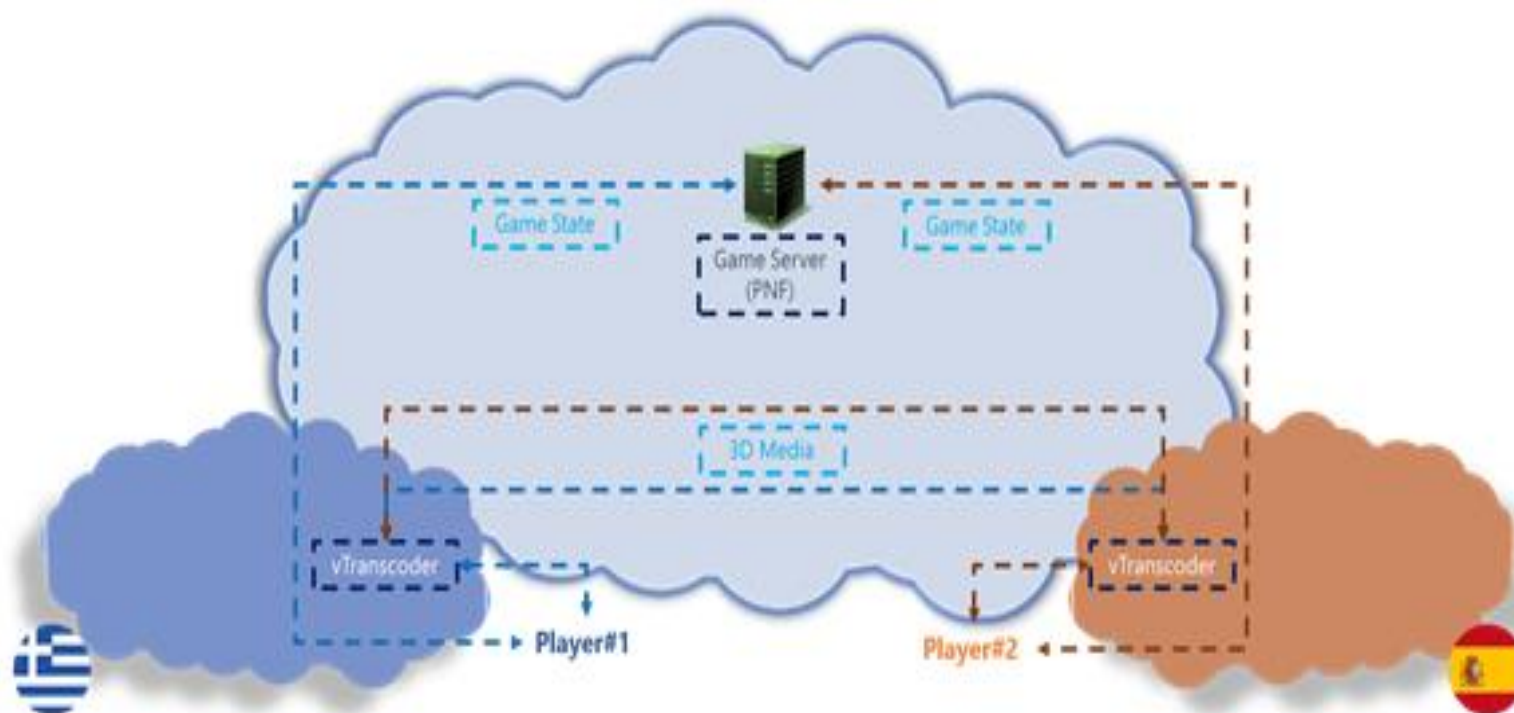
- **Enable VNF transcoding**
 - Accommodate high computational power
 - Support GPUs container integration
- **Transcoding in the edge**
 - Minimize latency and core traffic
- **Instantiate transcoders on demand upon session initiation**
- **Accommodate other event-based media processing functions (e.g. replay clips)**



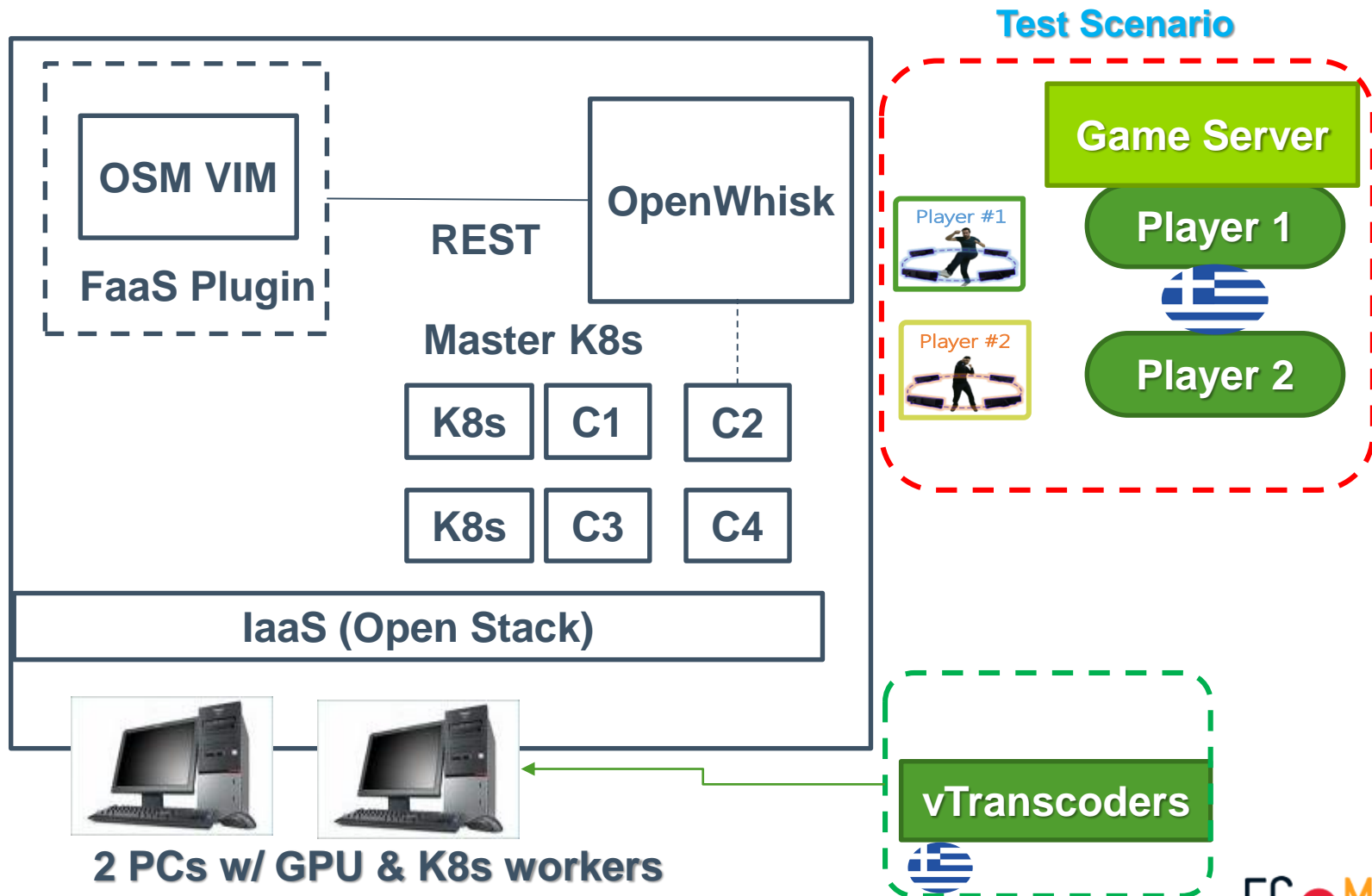
Main Expected Benefits: Improved QoE for players/spectators and support of real time Tele-Immersive applications



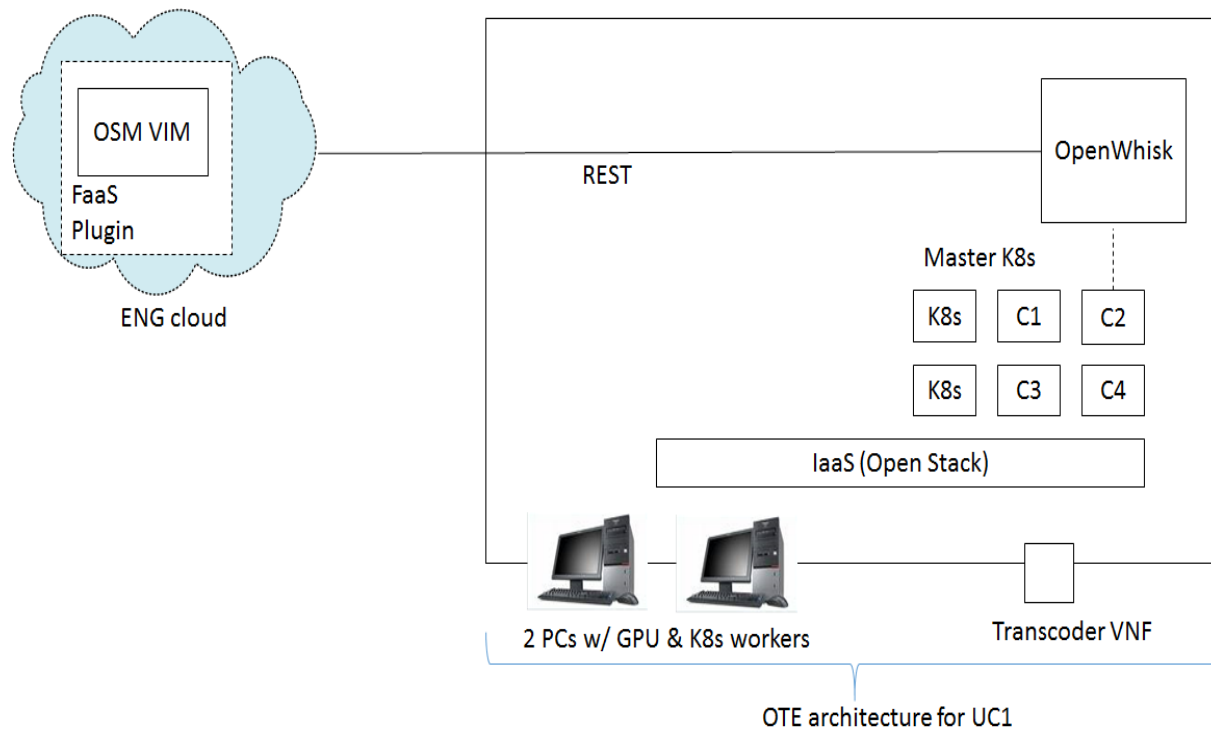
UC1 – General Scenario



5G Media testbed for UC1



Architecture extension for UC1





Conclusion

- ✓ Existing technologies and operator infrastructures are not sufficiently flexible for provisioning and operating the next generation of media services to match the needs of dynamically changing demand patterns from users in an increasing variety of locations.
- ✓ New services need to be deployed rapidly and flexibly and the use of cloud-based infrastructures and virtualized applications and networks are needed to offer elasticity of underlying resources.
- ✓ 5G-MEDIA offers this flexibility through its SVP incorporating advanced MAPE algorithms, FaaS technologies and SDK tools.



Thank you