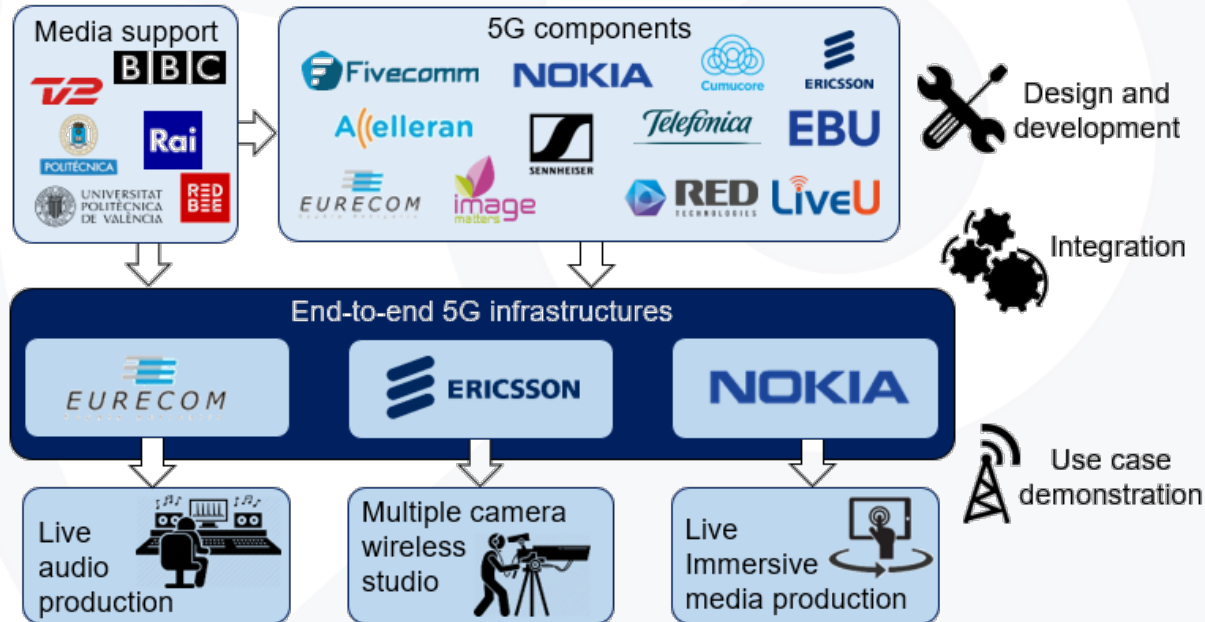# *5G Key Technology Enablers for Emerging Media Content Production Services*

Irene Alepuz Benaches
Universitat Politecnica de Valencia

Overview

5G-RECORDS is about the design, development, integration, validation and demonstration of **5G components** for **professional media content production**, with an important focus on private 5G networks.

Project goals and key technology enablers

Live audio production

Multiple camera wireless studio

Live immersive content production

- Open and virtualised RAN
- SDR NR-RedCap UE prototype
- URLLC air interface
- Dynamic Spectrum Access

- Non-Public Networks
- Timing and Synchronisation
- Network Slicing
- Media Orchestration: Gateway

- mm-Wave Antennas/Devices
- Edge computing
- Centralized/Distributed 5GC

Design
of 5G components for professional content production

Development
of state-of-the-art 5G prototypes

Integration
into end-to-end 5G infrastructures

Validation
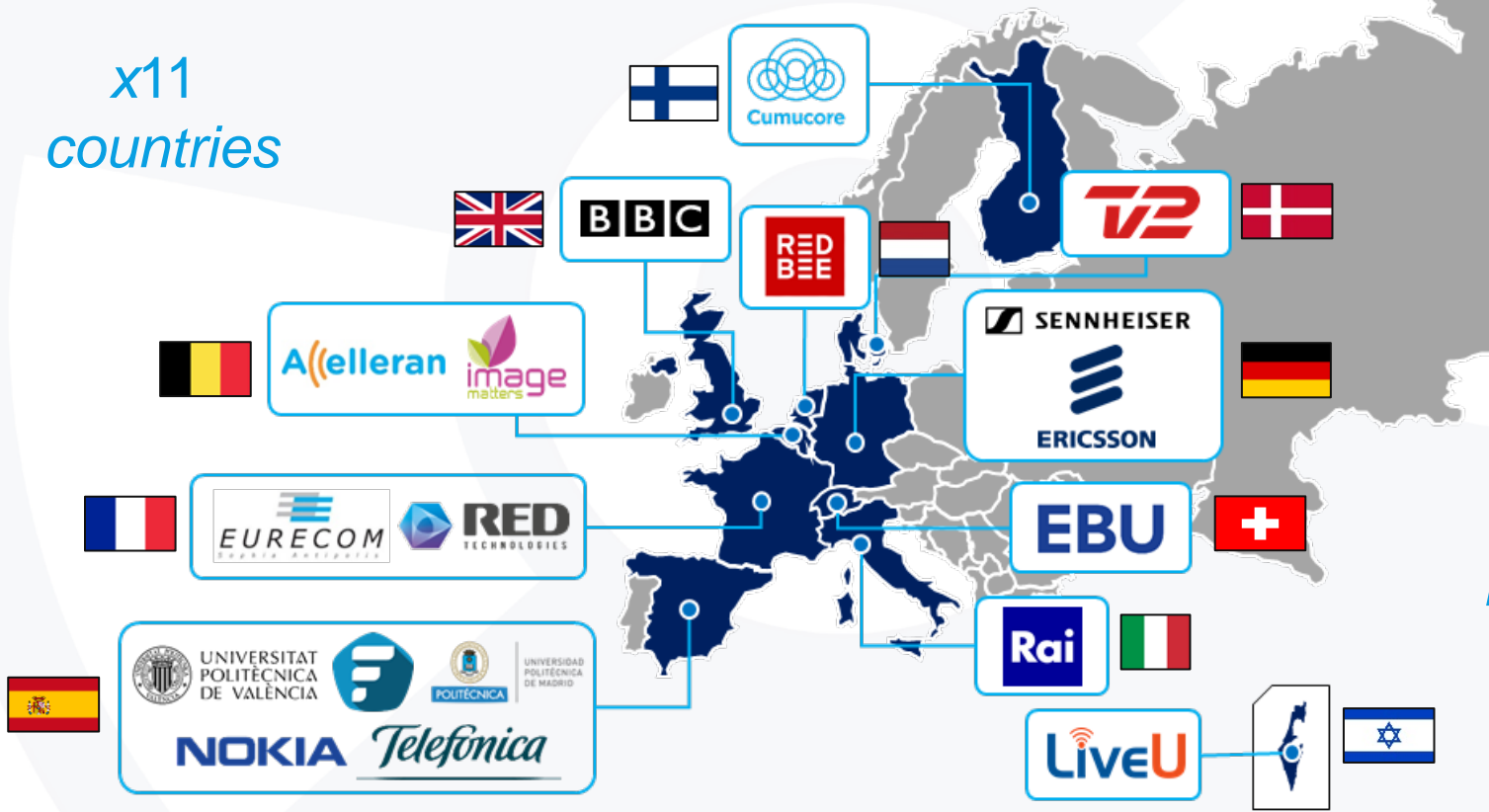in the context of real production use cases.

Demonstration
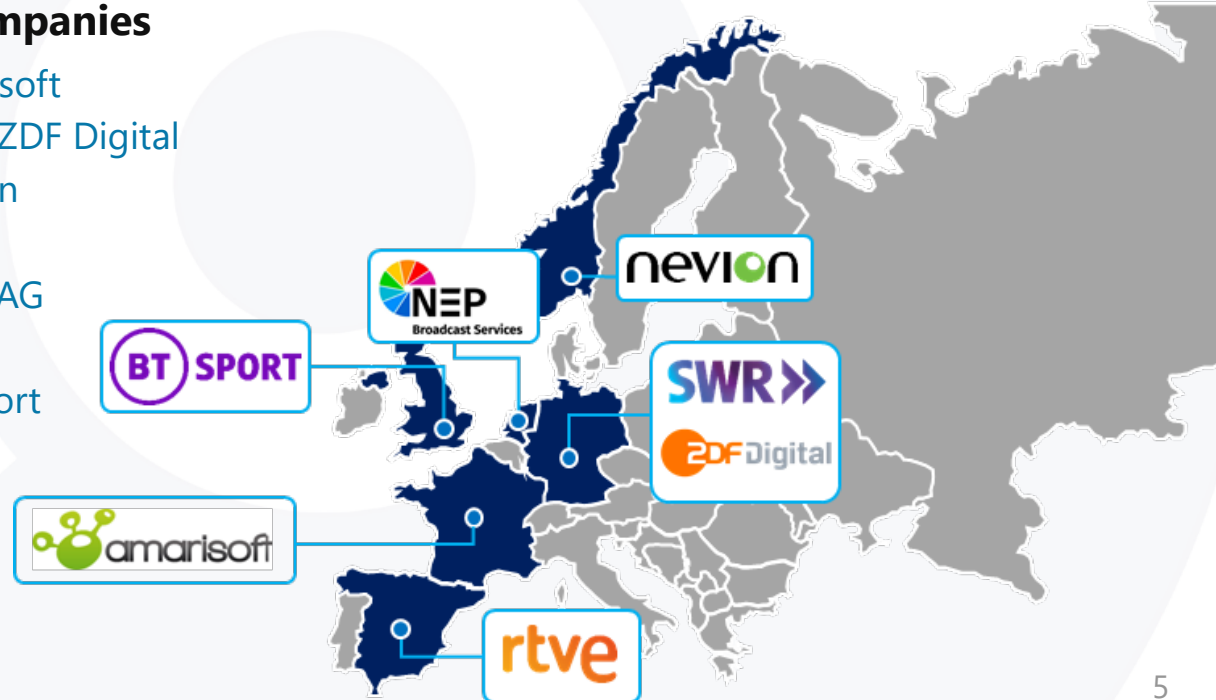of the potential value to the sector

3

Consortium

*x*11
countries

*x*18
partners

Consortium: Advisory Board

- Strong support of companies from both 5G and content production worlds:

7 countries   8 companies

🇫🇷	Amarisoft
🇩🇪	SWR, ZDF Digital
🇳🇴	Nevion
🇪🇸	RTVE
🇨🇭	5G-MAG
🇳🇱	NEP
🇬🇧	BT Sport

Use Case 1 : Live Audio Production

Main partners: SENNHEISER *leader* A((elleran RED TECHNOLOGIES Cumucore EURECOM UNIVERSITAT POLITÈCNICA DE VALÈNCIA
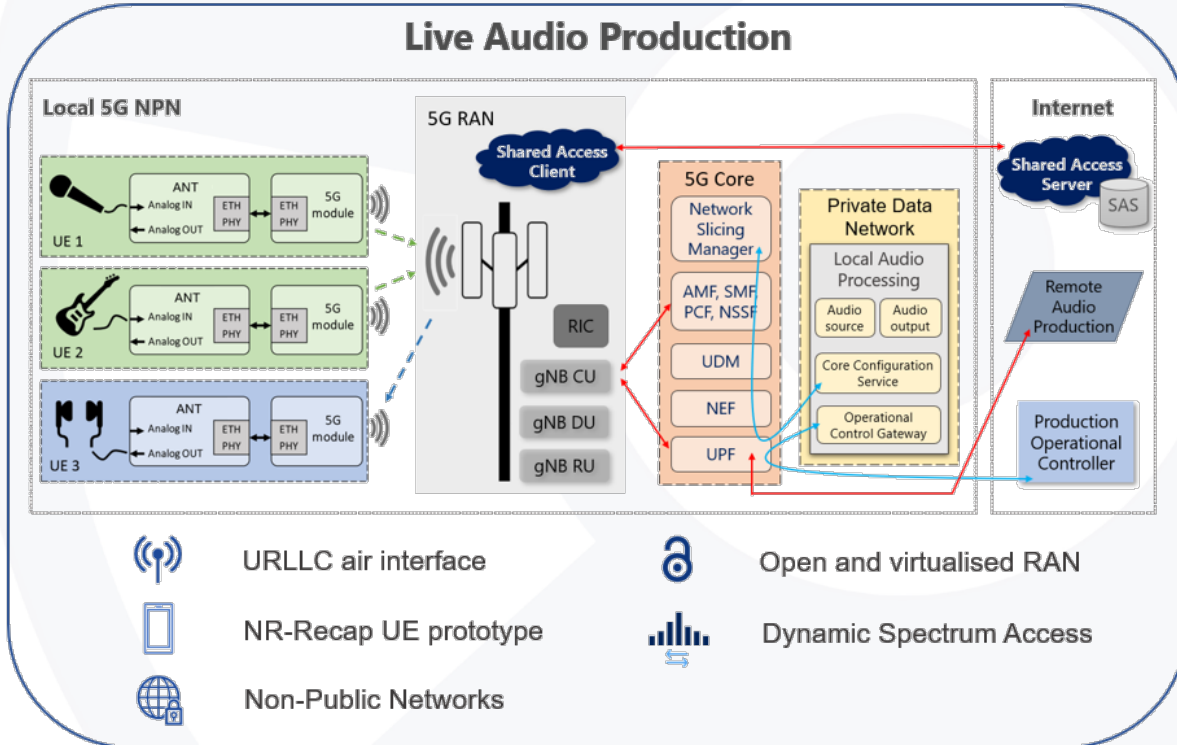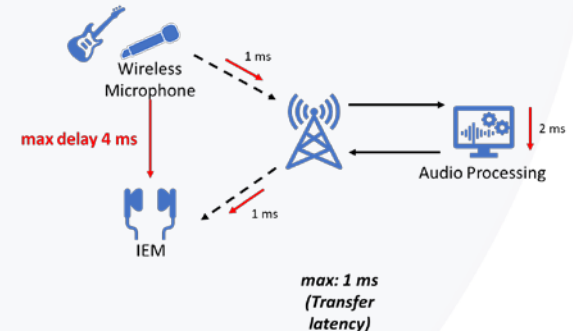

Live audio production

GOALS

- To research the feasibility of utilizing 5G as technology for **wireless ultra-low latency audio devices.**

- To deploy a **local high-quality** audio production network.

- 5G as a **low-latency high-bandwidth IP network**

- **Faster, easier and more optimized setup**

Use Case 1 : Live Audio Production

Requirements:

- Mouth to ear latency < 4ms

- Network latency < 1ms

- Reliability: 99,9999%

- Synchronicity < 500 ns

- Battery life > 6hrs

Use Case 2: Multiple Camera Wireless Studio

Main partners:

ERICSSON *leader* · LiveU · EBU · BBC · image matters · Rai · Cumucore · Fivecomm · UNIVERSITAT POLITÈCNICA DE VALÈNCIA
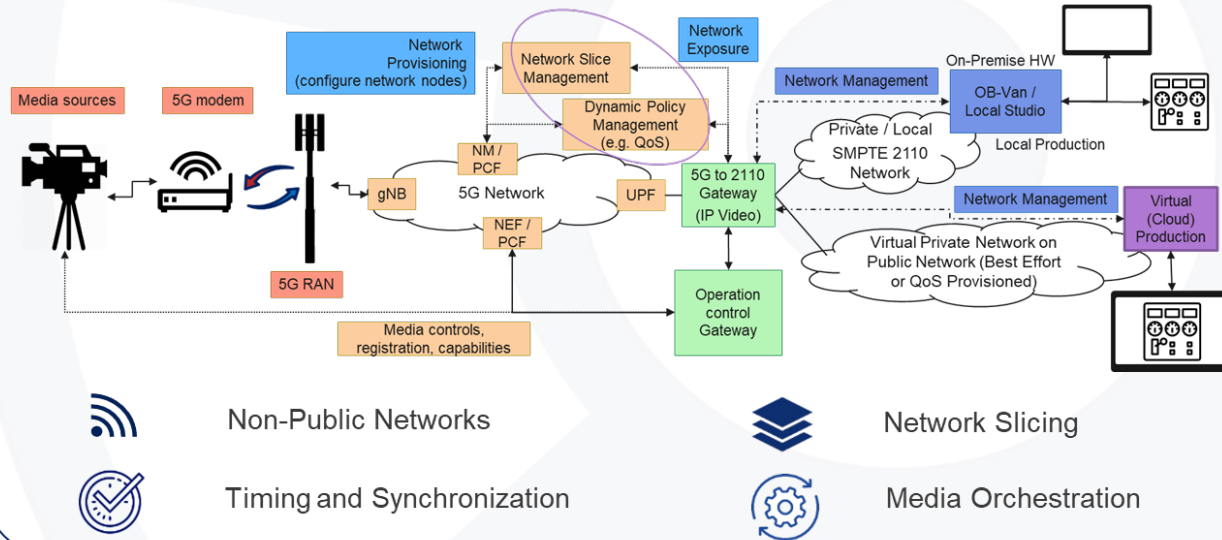

Multiple camera wireless studio

GOALS

- To facilitate media content **remote** production using 5G technologies.

- To provide more **flexibility** and reduce **media production logistic efforts.**

- To contribute to **3GPP PMSE standardisation.**

Use Case 2: Multiple Camera Wireless Studio

Requirements:

- Latency: 20-150 ms

- Video UL Data Rate: > 50 Mb/s

- Service Area: $1000m^2$

- Mobility: ≤ 10 km/h

- Number of streams: up to 5

- Jitter and latency: constant

Use case 3: Live Immersive Media

- **Main partners:** NOKIA *leader* Telefónica UNIVERSIDAD POLITÉCNICA DE MADRID UNIVERSITAT POLITÈCNICA DE VALÈNCIA

Live immersive content production

GOALS

- To setup and configure a 5G-surrounded production system and achieve **compatibility and functionality.**

- To stream video content offering an **immersive** point of view.

3. Use case 3: Live Immersive Media

Live immersive media production
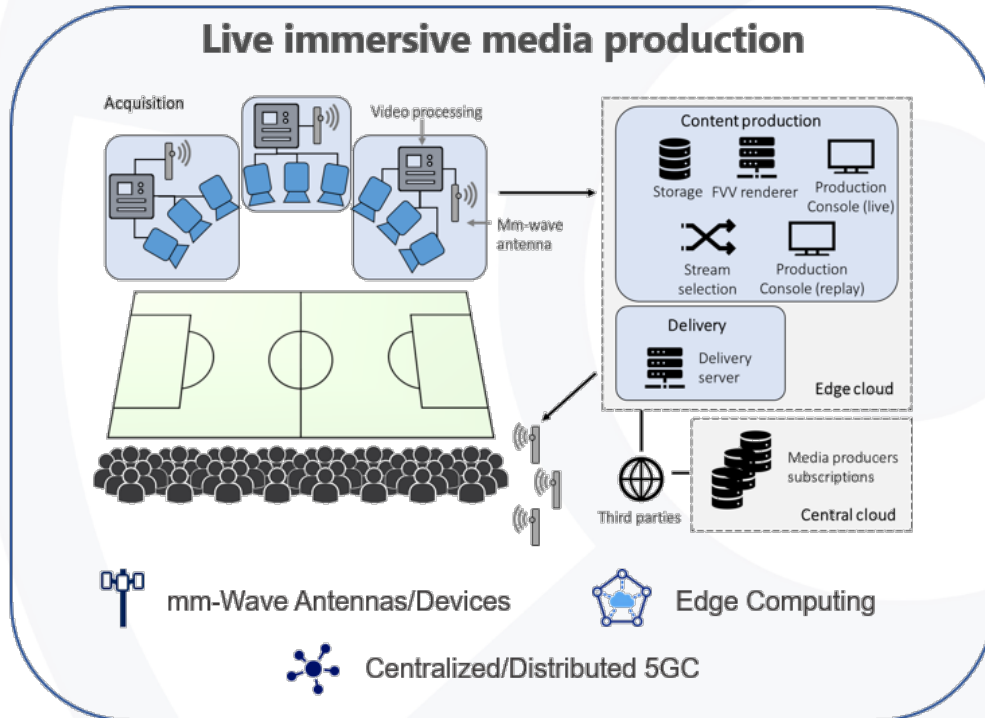
Requirements:

- Media acquisition: up to 1.5 Gbps per camera.
- Radio uplink speeds of 20-200 Mbps.
- Downlink speeds of 2-20 Mbps per user.
- Connected end-users: 10-100 per 1000 m^2.
- Reliability: 1 error every 10 min.

www.5g-records.eu

twitter.com/5g-records

5G-RECORDS Group

5G-RECORDS Channel

Thanks for your attention!
Any questions?
iralbe@iteam.upv.es