FLAME: Co-creating Localised Interactive Places for Culture, Entertainment, Learning and More using 5G

Carlos Alberto Martín Edo
Senior project engineer in ATOS
FLAME Project

Introduction

FLAME is a R&I project funded by the European Commission. FLAME is developing a highly programmable platform for delivering media services using smart city infrastructures. Based on 5G technologies and new network paradigms, such as network resources virtualisation.

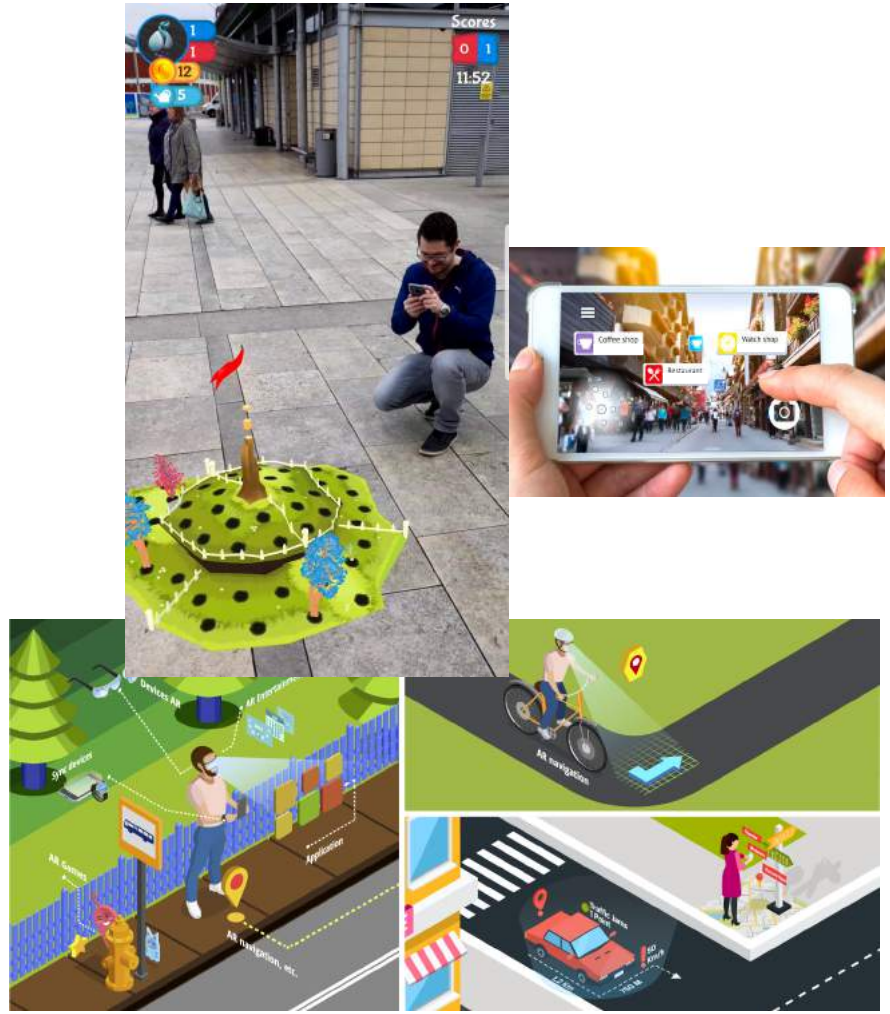
Carlos Alberto Martín Edo is senior project engineer in Atos Research and Innovation since March 2017. He has been working for fifteen years in research and development projects on digital video and television projects.

Media market trends

- Technologies provide an **enriched user experience. More engaging, immersive and exciting experiences.** E.g.: Gaming, AR, VR, MR, 360.
- Demand for **improved quality, including more pixels and also better pixels**. E.g.: UHDTV, HDR... Impact on transmission throughput requirements.
- Users wish to watch **any content anywhere and at any time**, e.g., when they move around the city.
- **Localised, contents and experiences, linked to a physical or symbolic space**, like a sports match or a culture festival.
- Many **content consumers become content producers**. Enabled by modern equipment (quality acquisition) and social networks.

Localised experiences in the city

- A place to enjoy media
- A place to meet people and interact with other users
- A place to participate in content creation and to share it
- A place to know symbolic values (e.g., city history)
- A place to enjoy cultural activities
- A place to play games
- A place where physical and virtual worlds converge



Media Scenarios

Video/Audio

Personalisation

Interactivity

AR/VR

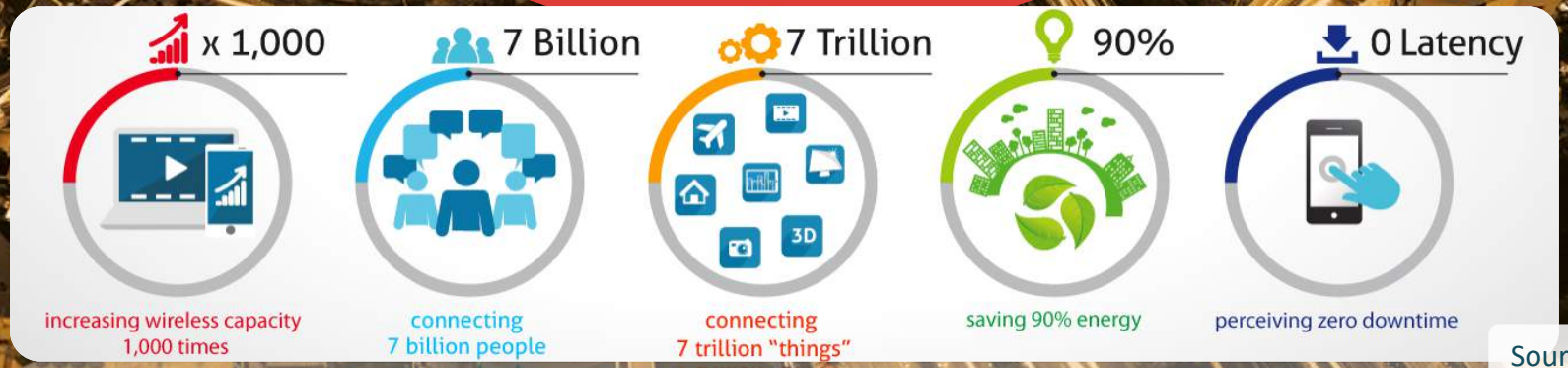
Human-Centric Interaction

360

Localisation

Mobility

IoT



Source: www.5g-ppp.eu

5G Drivers

- Programmable infrastructure
  - Programmable infrastructure to gain architecture flexibility
  - SDN, NFV and virtualisation
- Cloud native deployment of 5G
  - Highly distributed data centres
  - Cloud-based applications
- Deep in-network service deployment
  - Deployment on the Edge
  - Orchestration frameworks

To learn more: "Enable 5G with FLAME" FLAME whitepaper.
https://www.ict-flame.eu/publications/

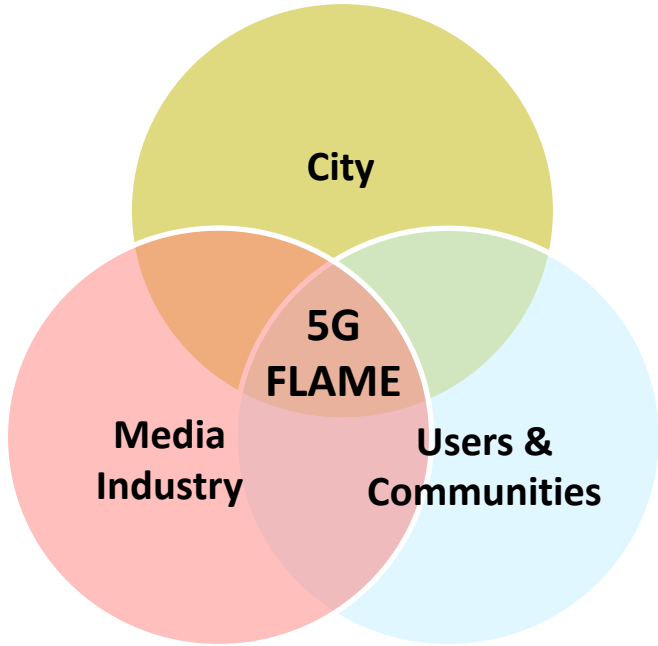
Main 5G use cases for M&E

- **Ultra High Fidelity Media**. More and better pixels.
- **On-Site Live Event Experience**. Better experiences in large events.
- **User Generated Content & Machine Generated Content**. People and objects generating more and more content.
- **Immersive and Integrated Media**. Immersivity, interactivity, telepresence.
- **Cooperative Media Production**. Immediacy of access to content.
- **Collaborative Gaming**. Full immersive, more realistic and anywhere.

Source: 5G-PPP and NEM whitepaper on 5G and Media & Entertainment

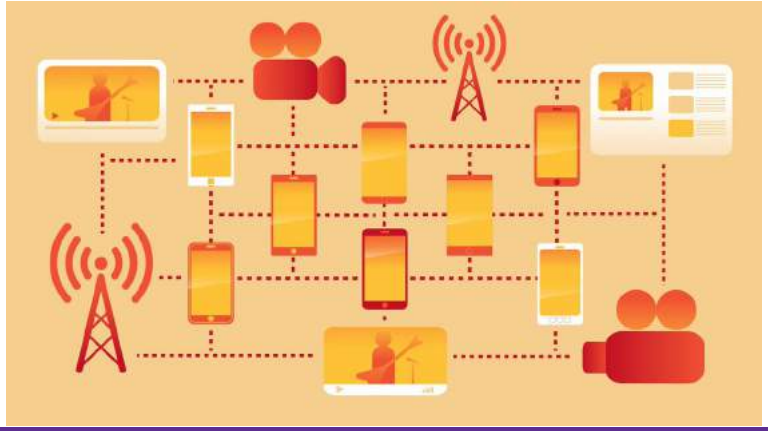
What is FLAME about?

- Personalised, interactive, mobile and localised media services
- Meeting the needs of **users and communities**
- Fulfilling the trends and expectation of the **media industry**
- Using **smart city infrastructure**



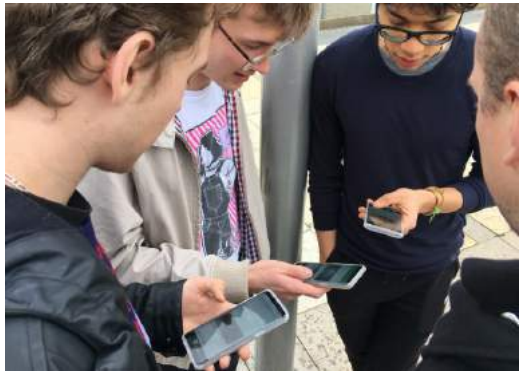
The FLAME approach

- Highly programmable platform
  - Employing 5G paradigms
- Media services are formed as chains of virtual components
  - Deployed in data centres distributed throughout the city
  - Content approaches the user (edge computing)
  - Platform orchestrates and reorchestrates the virtual components to optimise the service
- Routing based on new SDN technology



FLAME experiments in the city

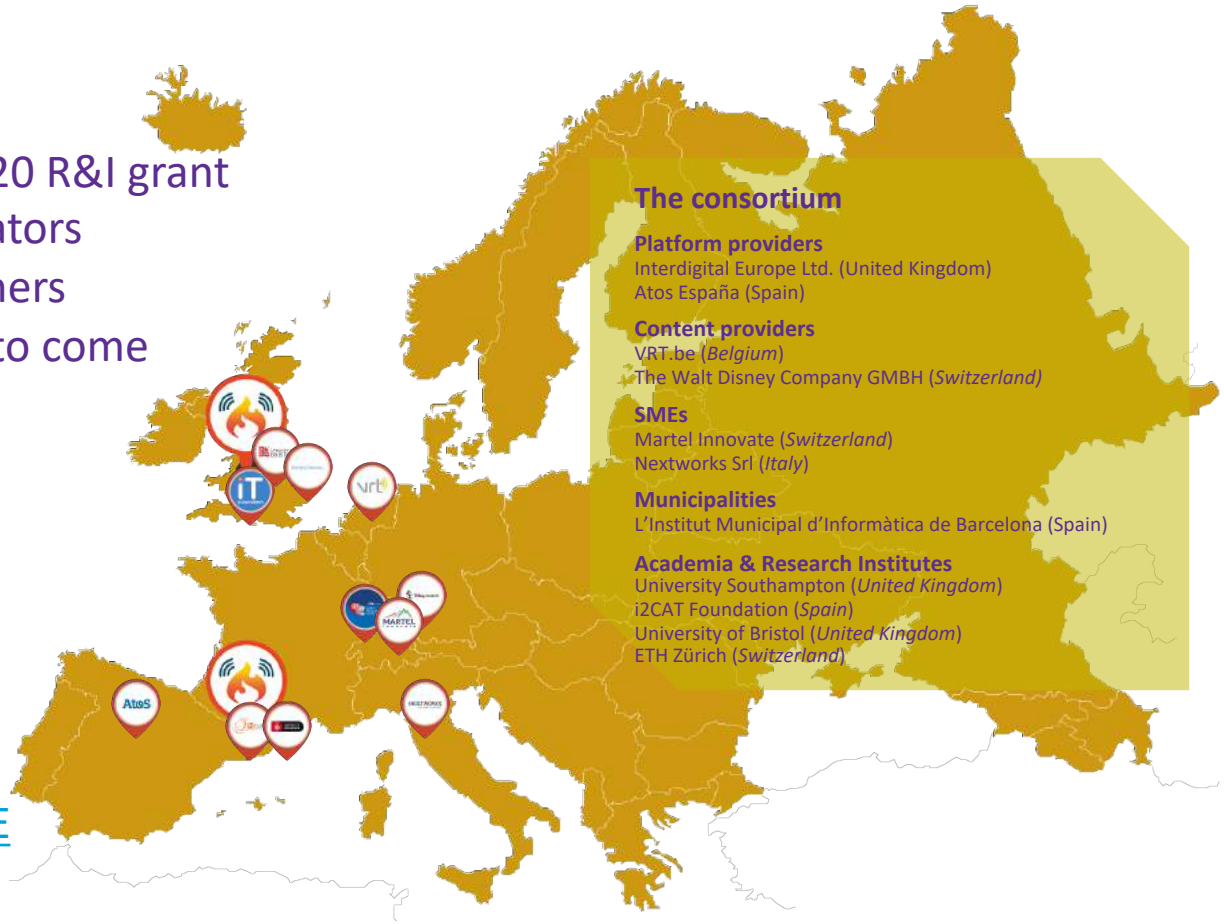
- FLAME is successfully deploying media services in real city infrastructures
  - Bristol
  - Barcelona
  - … and replicators



- Novel experiences in a smart city
  - Non-linear storytelling throughout a city
  - Local interactive immersive experiences in AR
  - Virtual 3D environments to communicate and interact with each other
  - Capture and reproduction of the real world in VR
  - Creation of perceptual congruity between real and virtual worlds

Come and see our booth in stand 8F14!!

- **EU** H2020 R&I grant
- **4** replicators
- **11** partners
- …more to come



- 3.5 years
  - Jan-17 to Jun-20
- 11 Partners
  - 438 PMS
- EUR 6.9M Budget
  - EUR 2.2M 3rd party project investment (open calls)

OUR WEBSITE!
www.ict-flame.eu

CONTACT US!
info@ict-flame.eu

FOLLOW US ON TWITTER!
https://twitter.com/ICT_FLAME

FOLLOW US ON LINKEDIN!
https://www.linkedin.com/groups/8579978

SUBSCRIBE OUR NEWSLETTER!
https://www.ict-flame.eu/newsletter/

This project received funding from the European Union's Horizon2020 research and innovation programme under grant agreement No 731677