



**FLAME**

FACILITY FOR LARGE-SCALE ADAPTIVE MEDIA EXPERIMENTATION

# FLAME Introduction and Expectations for the 3<sup>rd</sup> Open Call

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FLAME Open Call Webinar

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# Project Overview

# FLAME Objectives



- **Our goals**
  - establish an *Future Media Internet ecosystem* using *Experimentation-as-a-Service* (EaaS)
  - support experimentation of *novel FMI products and services*
  - *use real-life adaptive experimental infrastructures* encompassing compute, storage and software-enabled communication infrastructure
- **Our systems** are interactive media systems with tight integration with networks
- **Our activities** are conducted using an EaaS paradigm
  - trials and experiments exploring acceptance, viability and performance
- **Our outcomes** are delivered to an FMI ecosystem
  - creative industries, media service providers, infrastructure providers, and beyond



# Who's involved

- EU H2020 R&D grant
- 4 European locations
  - Bristol, Barcelona, London, Sicily
- 11 consortium partners
- 20+ 3<sup>rd</sup> party experiments
- 2 3<sup>rd</sup> party replications



## The Consortium

### Platform Providers

InterDigital Europe Ltd. (*United Kingdom*)  
Atos España (*Spain*)

### Content providers

VRT.be (*Belgium*)  
The Walt Disney Company GMBH (*Switzerland*)

### SMEs

Martel Innovate (*Switzerland*)  
Nextworks Srl (*Italy*)

### Municipalities

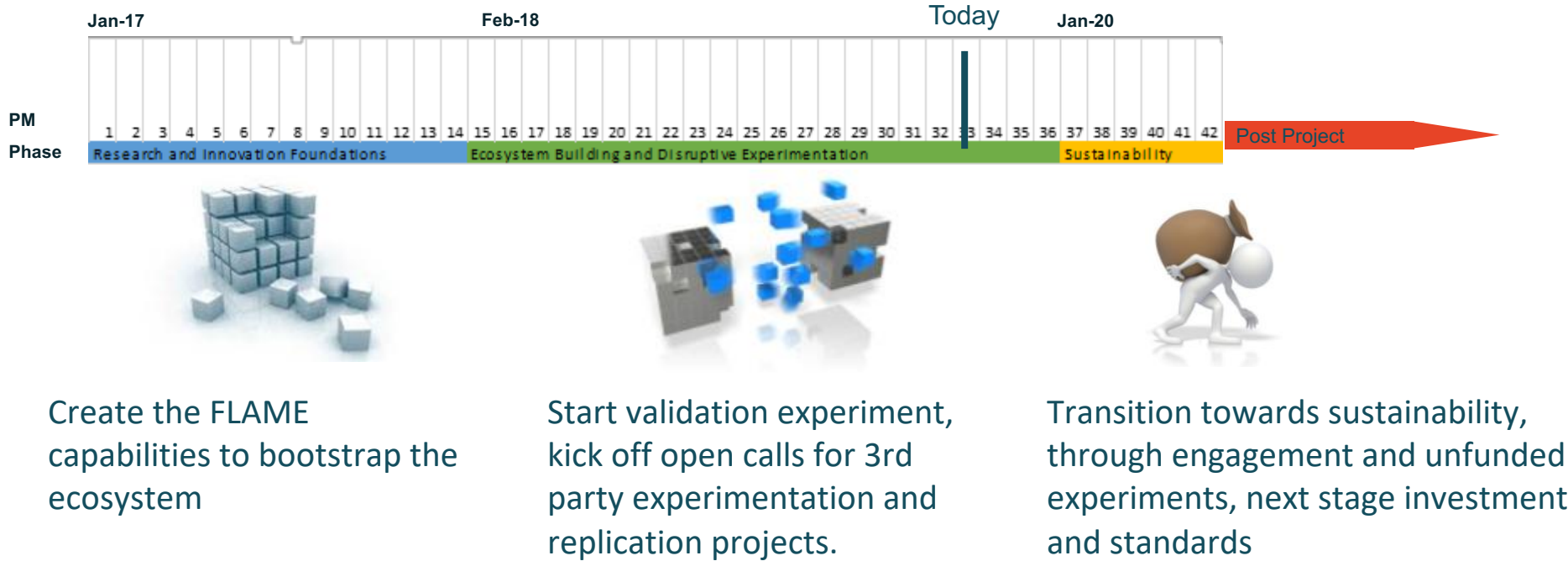
L'Institut Municipal d'Informàtica de Barcelona (*Spain*)  
Bristol is Open (*United Kingdom*)

### Academia & Research Institutes

University Southampton (*United Kingdom*)  
i2CAT Foundation (*Spain*)  
University of Bristol (*United Kingdom*)  
ETH Zürich (*Switzerland*)

- 3.5 years
  - Jan-17 to June-20
- 11 Partners
  - 438 PMS
- EUR 6.9M Budget
  - EUR 2.2M 3<sup>rd</sup> party project investment

# Project Delivery Phases

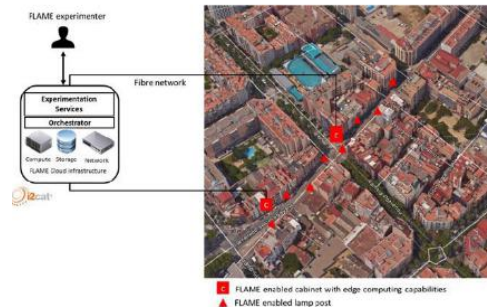
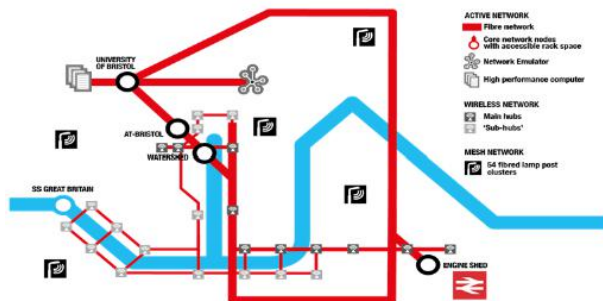




**We are building a media service platform through collaborative trials, experiments and replication**



# FLAME Offering - Real Life Infrastructures



Compute resources distributed and integrated with communication infrastructures across real-life infrastructures (edge, metro and core)

*FLAME IaaS specification for mobile edge computing and software defined real-life experimental infrastructures*



Bristol



Barcelona



European City A



European City B



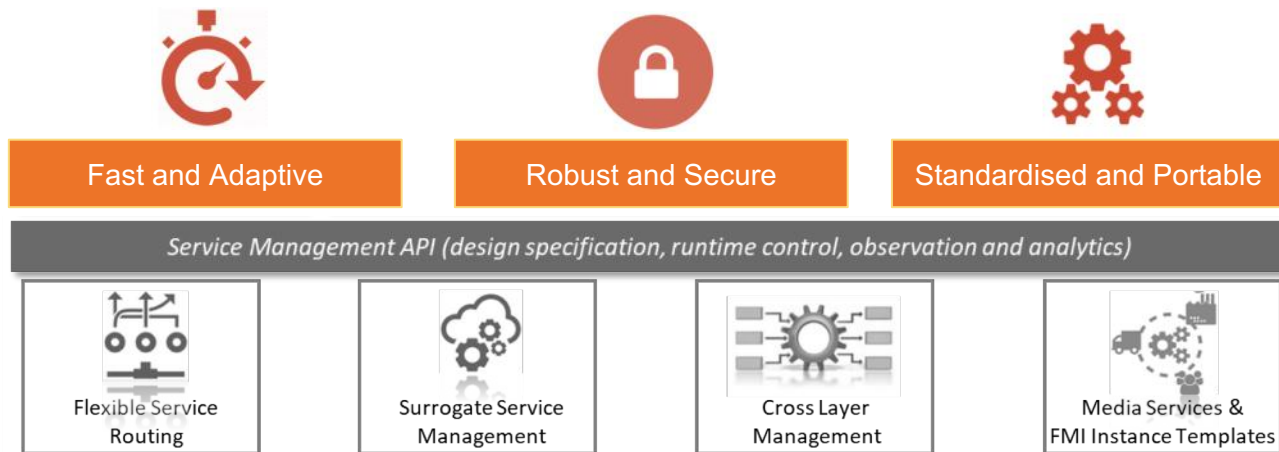
European City C

*FLAME Trailblazing Infrastructures*

*3<sup>rd</sup> Party Investment in FLAME Replicator Infrastructure Projects*

*Experimentation-as-a-Service (EaaS) Sustainability and Governance Models*

# FLAME Offering – Media Service Platform



## Core Platform Features

- Flexible service deployment
- Improved service request routing
- Multicast delivery of http responses
- Net-level indirection
- Less chance of insecure direct object references
- Secure end-to-end access to content



## Foundation Media Services

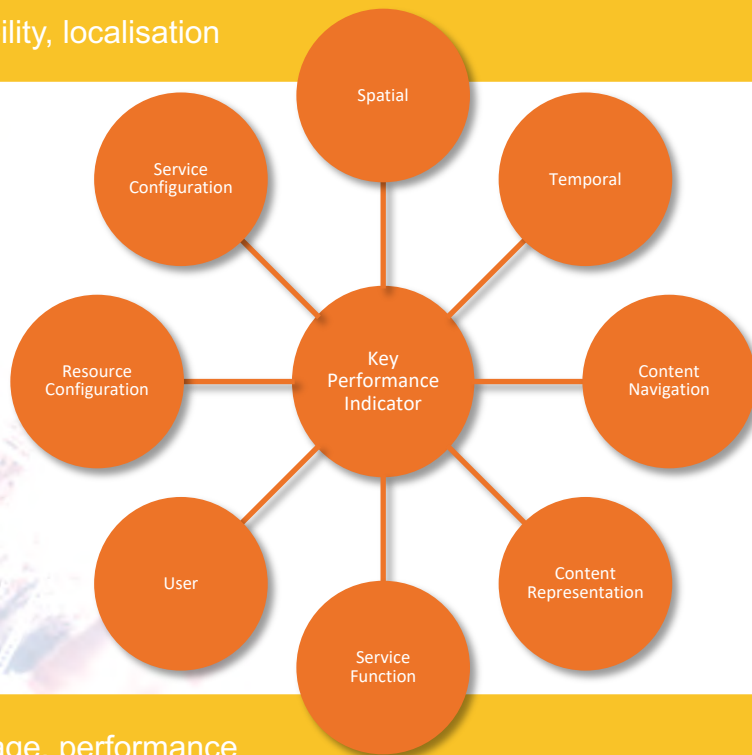
- Media Content Management
- Content Conditioning
- Transcoding and Transrating
- Adaptive Streaming
- extensible to further services ...

# FLAME Offering – Knowledge and Analytics

**User Demand:** personalisation, interactivity, mobility, localisation

Cross-layer multi-dimensional data analysis

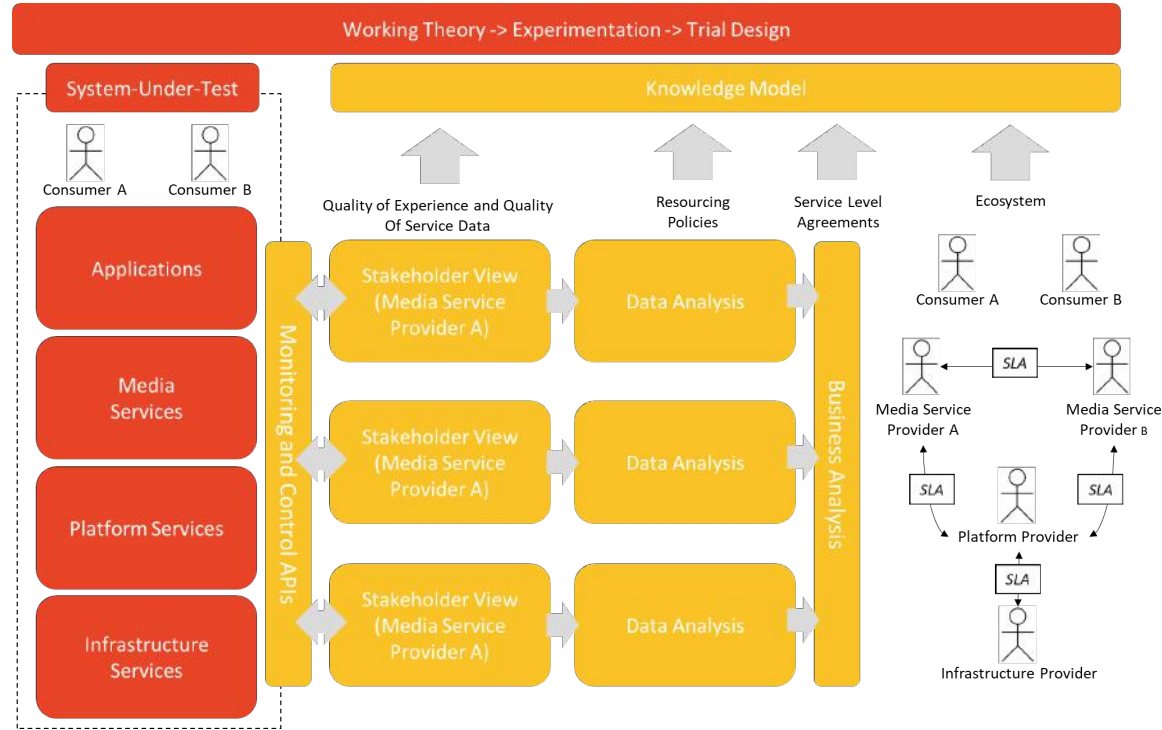
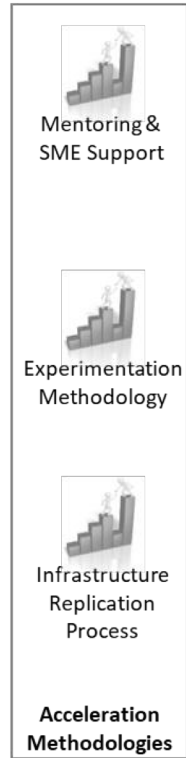
Media service template modelling and evolution



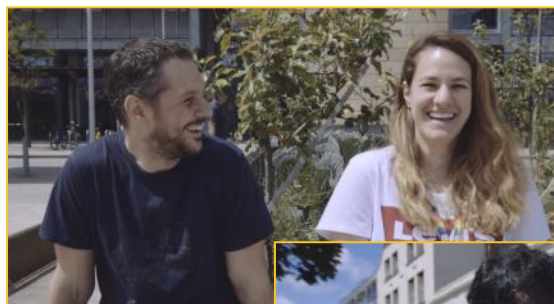
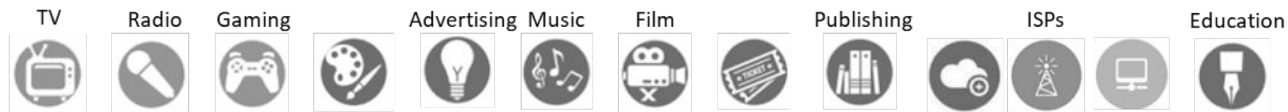
**Infra Resource:** spatial-temporal allocations, usage, performance



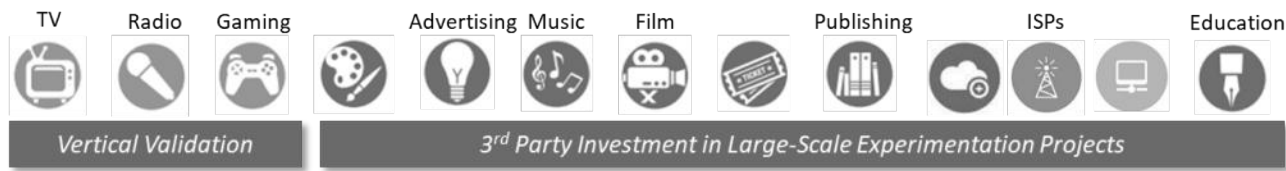
# FLAME Offering – Methodologies, Support and Training



# FLAME Offering – Market Showrooms



# FLAME Offering – Funding



Application,  
Content and  
Device  
Providers

Open Call

OC 1

OC 2

OC 3

2017

2018

2019



Media Service  
Providers

EUR 2M+ funding  
for  
trials, experimentation  
and replication



European City A



European City B



European City C

3<sup>rd</sup> Party Investment in FLAME Replicator Infrastructure Projects

Infrastructure  
Providers

## Market Showroom

3<sup>rd</sup> Party Projects for Trials and Experimentation

5G Media Service Delivery Platform

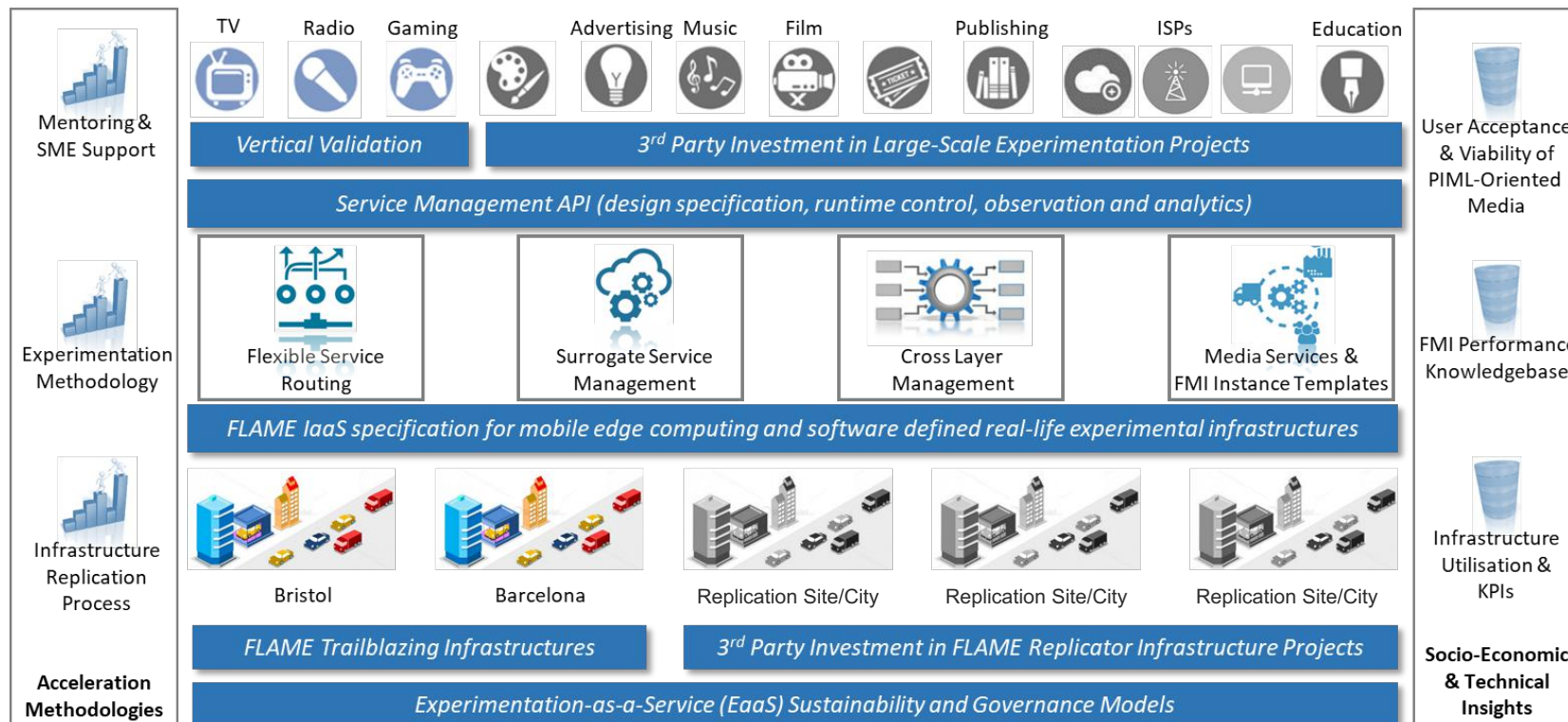
Methods,  
Support and  
Training

Knowledge &  
Analytics

Real Life Infrastructures

3<sup>rd</sup> Party Projects for Replication

# The FLAME Offering – Get Involved





**What we are looking for? The scope of the call**





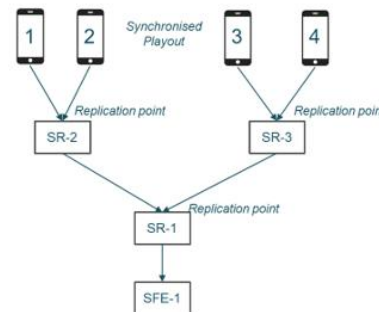
Personalisation

Interactivity

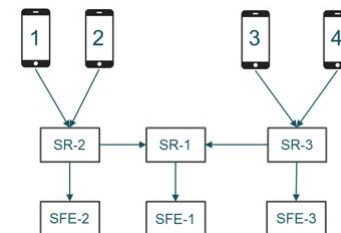


# Scope of the 3rd Open Call – Service Design Patterns

- Design new interactive media services based on FLAME's service design patterns
  - opportunistic multicast, sync playout, nearest playout, proxy cache playout, content placement, application function offloading, scale geographically
- Clearly link FLAME platform benefits to user experience
  - dynamic routing, endpoint management and control, multicast, cross layer management
- Quantifiably measure outcomes in terms of usage, performance, cost and performance



Opportunistic Multicast



Nearest Playout

# Call Scope – Novel Media Services (SME/Start Up)

## Localised video production, consumption and delivery trials – Innovative services for today's devices

- Innovative trial highly localised on-demand and live video production and distribution workflows where the infrastructure and resources more closely aligns with the communication needs to consumers.
- Projects should focus on:
  - B2C apps building on intelligent edge-based video processing services
  - B2B media solutions for aggregating and distribution of different sources of geospatial video content and other media
- Proposals relying on video content to be produced, stored, processed and delivered within intelligent edge networks without requiring backhaul to the core network would be preferred

## Augmented and mixed reality trials – Innovative services for future worlds

- Innovative trials in content production, consumption and delivery processes for augmented and mixed reality.
- Projects should focus on:
  - Emerging consumer devices, apps and services for visualisation of augmented reality in outside spaces
  - Emerging consumer devices and services supporting 3D human activity acquisition using emerging wearable and non-invasive techniques in outside spaces
  - B2B services for localised production, processing and orchestration of augmented reality content including real-time content
- Projects do not need to cover entire end-to-end AR/VR workflows, but expect them to offer new edge services to be orchestrated and not just the devices/apps alone

## Scope – Dynamic Infrastructure Capacity (Industry)

- Innovative experiments and trials where industry extend local infrastructure with mobile infrastructure capability (e.g. production unit) in support of adhoc demand for live events
- We expect projects to focus on:
  - Models and processes for dynamic extension of localised infrastructure capacity
  - Policy-based control of edge resources extended to incorporate mobile infrastructure capacity
  - Media services exploiting FLAME's service design patterns, instrumented with suitable data points for policy-based control and provisioning on both local and extended infrastructure.

# FLAME Online



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ONLINE AND GET INVOLVED!



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