uMEC for Akraino TSC

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Introduction

- Developing documentation and CI on github: https://github.com/MicroMEC/documentation
- Aiming to be part of Release 3

- The µMEC concept is to have an open server at the ultra far edge that leverages the ETSI MEC architecture. We want to make it secure and easy to develop to. We want to have running code in the miniature city and a working CI/CD system. We want to focus on the concrete use cases such as Neutral Host.

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Plan for 2020

Here are some of the tasks for 2020, mainly based on the work that has already been done.

- Write the architecture document. We have the pieces already – k3s, Service Registry, developer user interfaces, OpenFaaS serverless, MEC APIs, integration with kubernetes services – but we need to write those up.
- Automatic builds. Since everything in µMEC is built on k3s (kubernetes), we should not worry about OS installation and instead use VMs or containers. One strategy is this:
  - Build all needed containers whenever the code changes
  - Integrate the whole stack: install k3s →install OpenFaaS and its dependencies → install components → run tests
- Once this works, the installation document is easy to write
- Support the specific use cases like Neutral Host
- Trusted computing. We need to make the platform secure
- Integrate OpenFaaS and OpenFaaS Cloud to make application management easy and secure

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What is a “Smart City”?

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XTURRIM5G SMART CITY ECOSYSTEM EXTENDS

ICT & Digitalization | Digitalization | Connected Intelligent Industries Finland | Smart Mobility Finland | Digital Trust Finland

The recently developed 5G smart pole concept in the LuxTurrim5G ecosystem is moving towards productization and practical piloting. Another goal is to create a platform utilizing a wide variety of data in a reliable and secured way and develop new digital services to meet real needs of cities.

Through a two-year and EUR 26 million funding, the group of 26 partners target the global smart city markets worth tens of billions euros in close collaboration. Business Finland provides innovation funding for the project.

The first phase of the LuxTurrim5G project, which ended in May, successfully developed the 5G smart pole concept, which integrates the 5G base station, weather and air quality sensors, video cameras, monitors electric vehicle charging unit and other active devices. The good results and the first pilots at the Nokia Campus in Espoo, Finland have attracted a lot of interest around the world and given the LuxTurrim5G ecosystem a boost for further expansion.

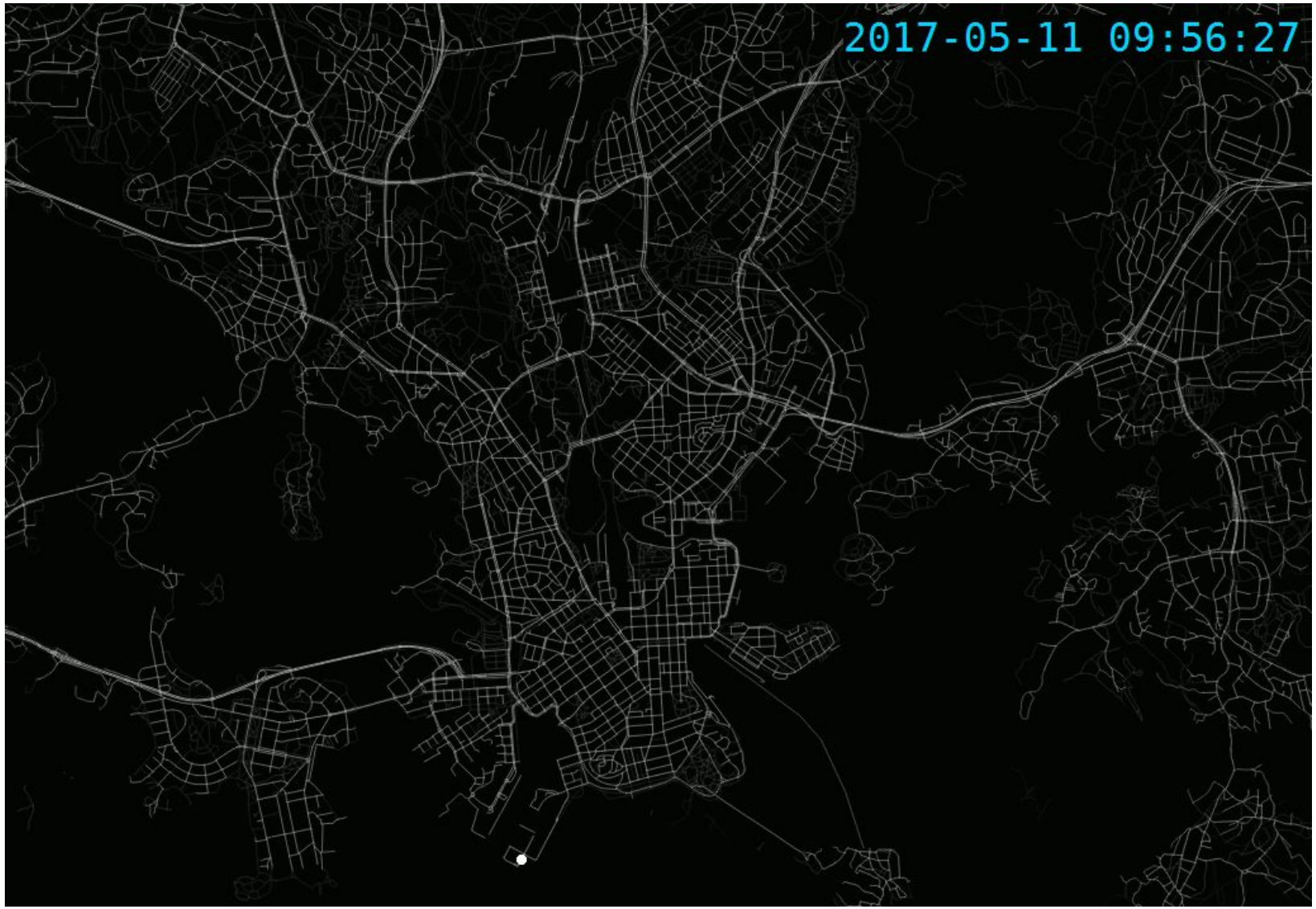
Open data

Open data is publicly available data that can be universally and readily accessed, used, and redistributed free of charge. It is structured for usability and computability. (Source: GovLab)

Explore open data resources

International Cooperation

Open Data



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What is µMEC?

Key concept

MicroMEC (aka Micro-MEC, uMEC) is part of Linux Foundation's Akraino Edge Stack.

MEC stands for Multi-access Edge Computing. MEC is meant to enable new functionalities and business models on the network edge. Running applications on the network edge mean:

- lower latency for end users
- real time access to radio network information
- less load on the mobile core network
- improved security and privacy

uMEC targets low powered devices with a maximum power consumption of 30W. It supports different sensors and data sources, such as cameras.

The main operational mode for µMEC is collecting information, processing and forwarding the information, if and when it is necessary.

(see https://github.com/MicroMEC/documentation)

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Your city...

What is Multi-Access Edge Computing?

Multi-Access Edge Computing

- Standardized application development model for the Edge
- Interfaces are defined using OpenAPI that allows generating server and client stubs for tens of programming languages
- MEC-11 (Application Enablement) allows modifying traffic rules, DNS rules, and discovering new services
- Supports multiple transports, security with OAuth2.0 etc

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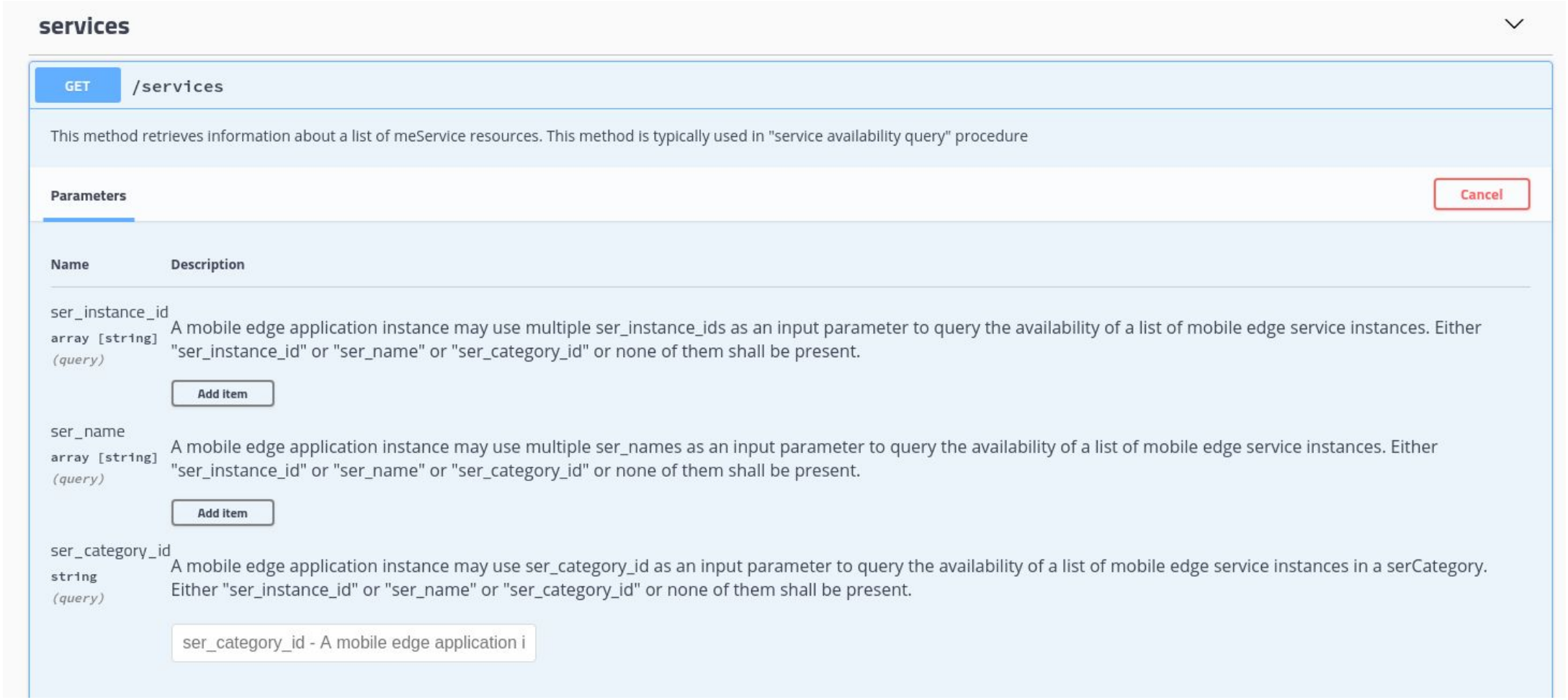
ETSI MEC (Multi-Access Edge Computing)



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