TAMPERE.
FINLAND

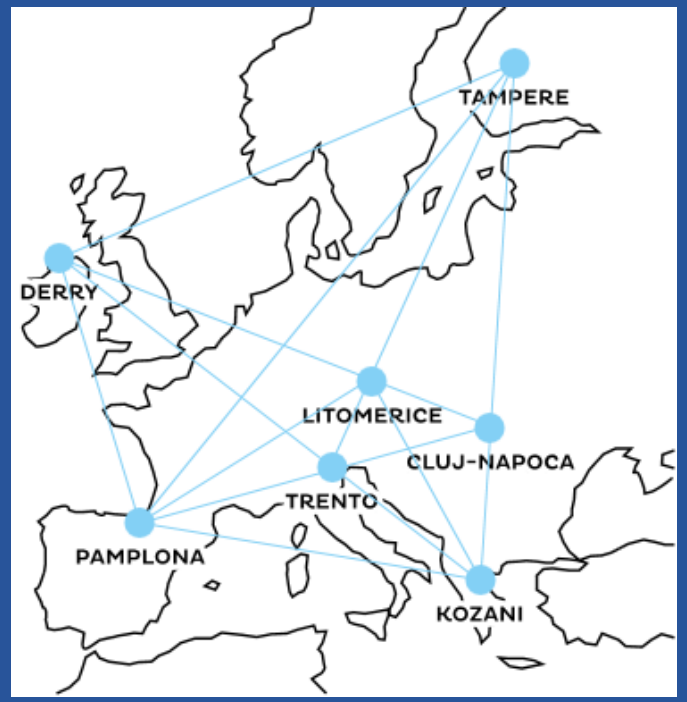
Intelligent Street Lighting, Smart Lighting pilot in Tampere

Maarit Vehviläinen, City of Tampere

CITY OF TAMPERE

STARDUST

- International smart city project that supports the transformation of carbon supplied cities into smart, high energy efficient and citizen-oriented cities. Tampere aims to be carbon neutral by 2030.
- Develops new sustainable, technological solutions, and innovative business models related to them.
- Duration: 60 months (10/2017-9/2022)
- EU funding: € 18 million
- More info: stardustproject.eu
- VIDEO https://www.youtube.com/watch?v=_0kZLQWWaMo



STARDUST
Enlightening
european cities

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 774094.

Where There’s a Will, There’s a Way

Tampere City Strategy

Collaborative and humane, it’s all about the people!

Leader in education & know-how

Creative and innovative

Urban and sustainably growing

Goals

Carbon neutral by 2030

Mainly digital services in use by 2025

Most appealing business environment

A pioneer in smart & sustainable urban development

DATA + TECHNOLOGY + PEOPLE

= SMART CITY

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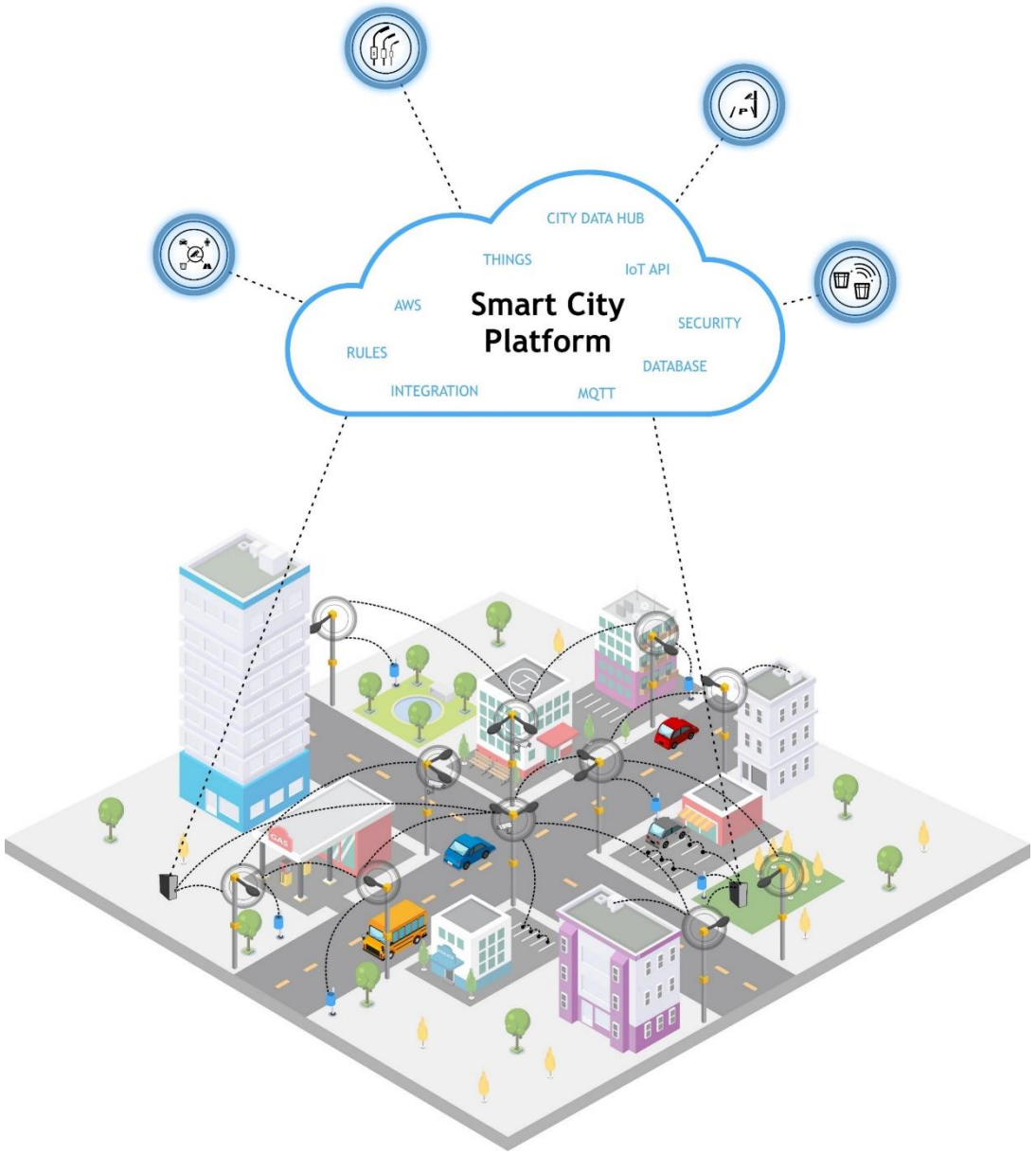

Open IoT Network based on mesh technology and Fiware

- Utilizes the street light infrastucture which then starts to serve as telecommunications infrastructure for digital services
- Open and free of charge for companies to do service innovations and tests
- Fiware –based

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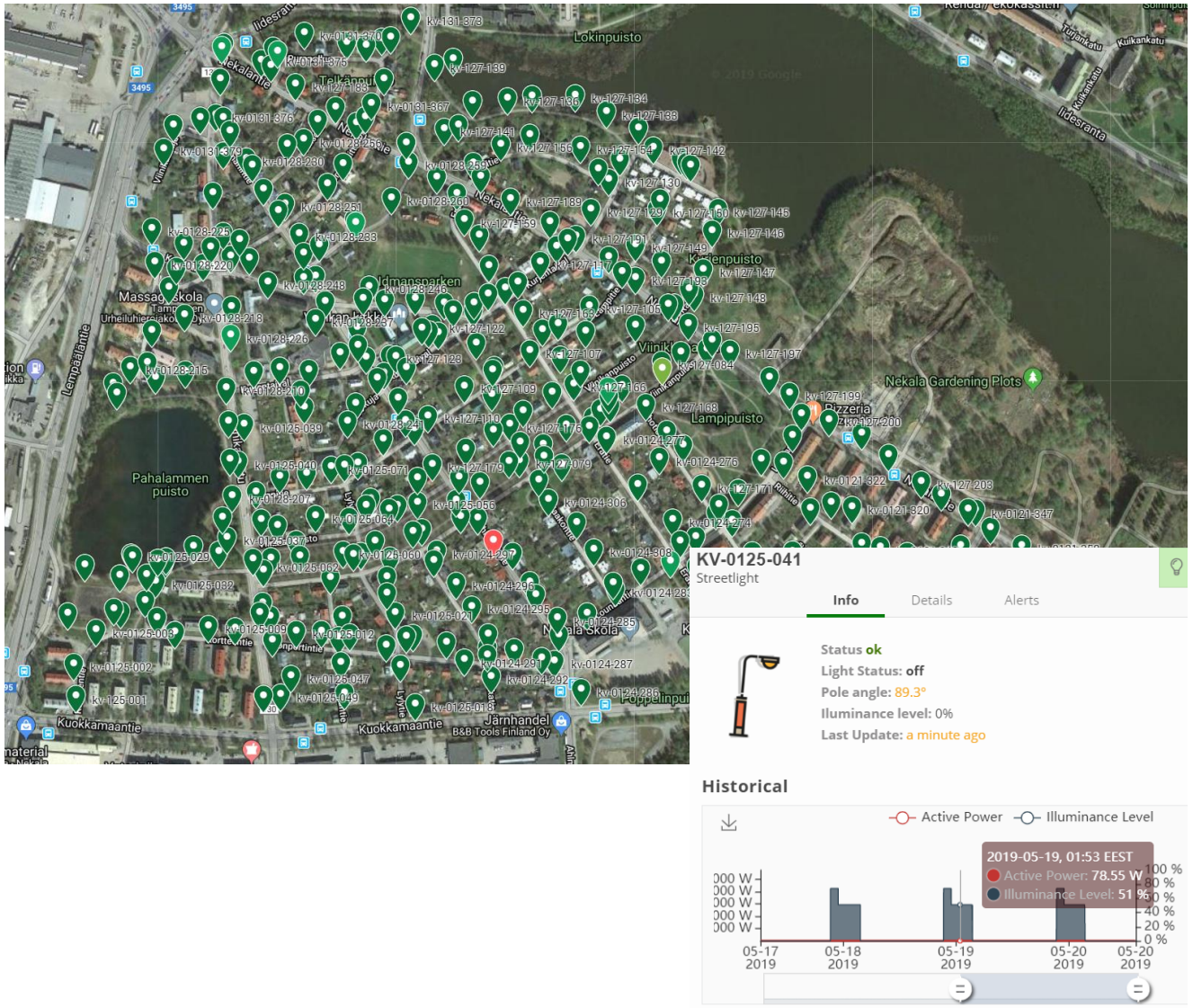
Viinikka area

Fact Sheet

- 401 connected street lights
- 6 Cabinet Controllers
- 6 Gateways
- 1 Light Sensor
- 1 Wastebin Sensor



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Objectives of innovative procurement

Hackathons – Agile experiments – Innovative partnership – Design competitions

- To find out what kind of innovative services and solutions can be built on the existing city infrastructure for example the street lighting network as the playground.
- To create an opportunity for different size businesses to develop a new service and get a reference for the company. Solutions could be commercialized and sold elsewhere.
- Agile experiments can provide practical solutions to cities' own needs, and at the same time, successful solutions become references for companies.
- Experiments provide cities with information to direct their own development and investment to areas that are functional, more efficient, and appreciated by citizens.

Case Enlighten Tampere

- Challenge competition for innovation in intelligent lighting
- Joint implementation of three projects and Smart Tampere
- Support for hackathon event and procurement was facilitated by Industryhack Oy

See the challenge description at:
https://app.industryhack.com/challenges/enlightentampere

Viinikka platform combined with Enlighten Tampere solutions

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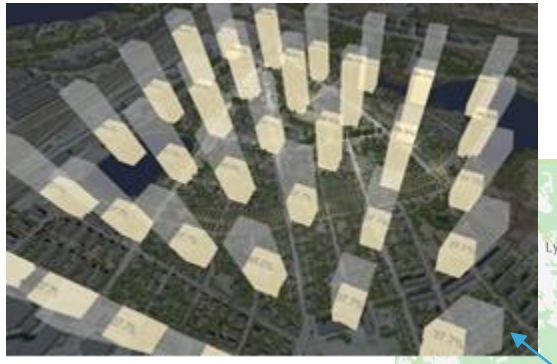
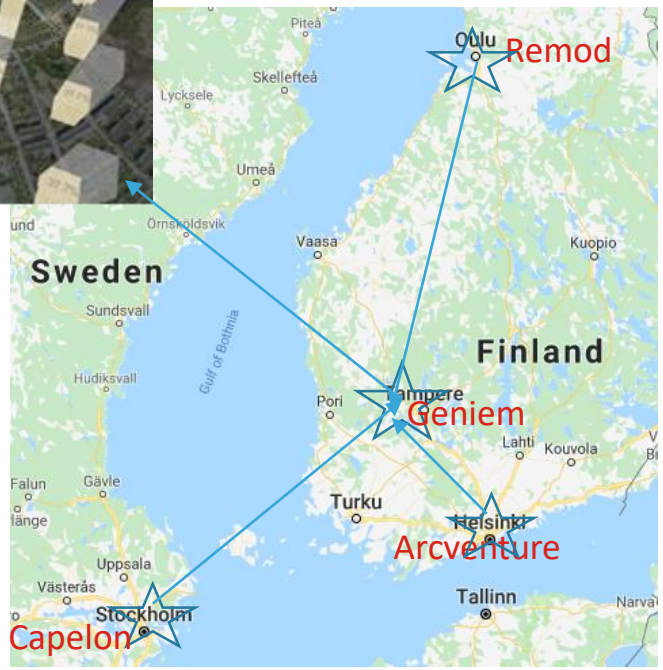
Solution from Hackathon:

- Create detailed 3D model from LIDAR data of the city
- Use 3D model to calculate shadows and irradiance
- Can be tuned for season and weather
- Combine data with street light locations
- Calculate lightning needs for individual lights

Proof of concept stages:

1. Core model with allows multiple inputs
2. First model with shadow and irradiance data
3. Second model with traffic data, Data from Telia





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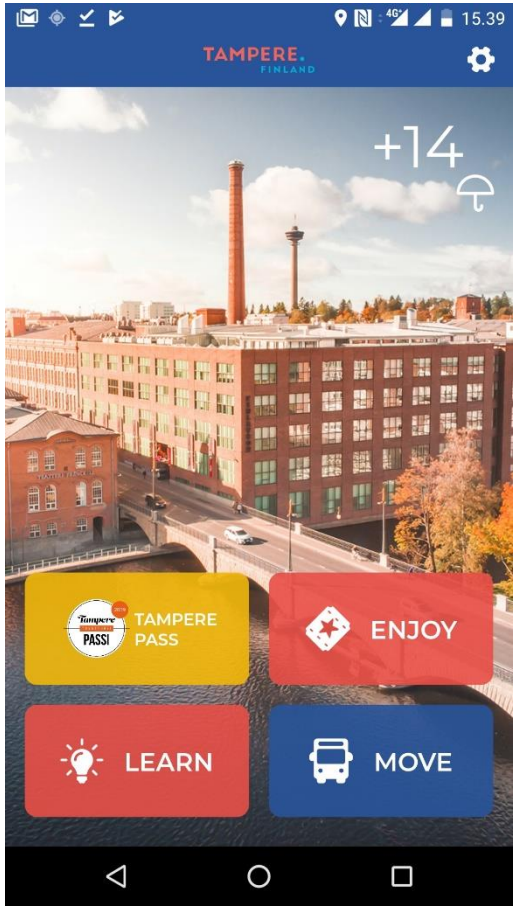
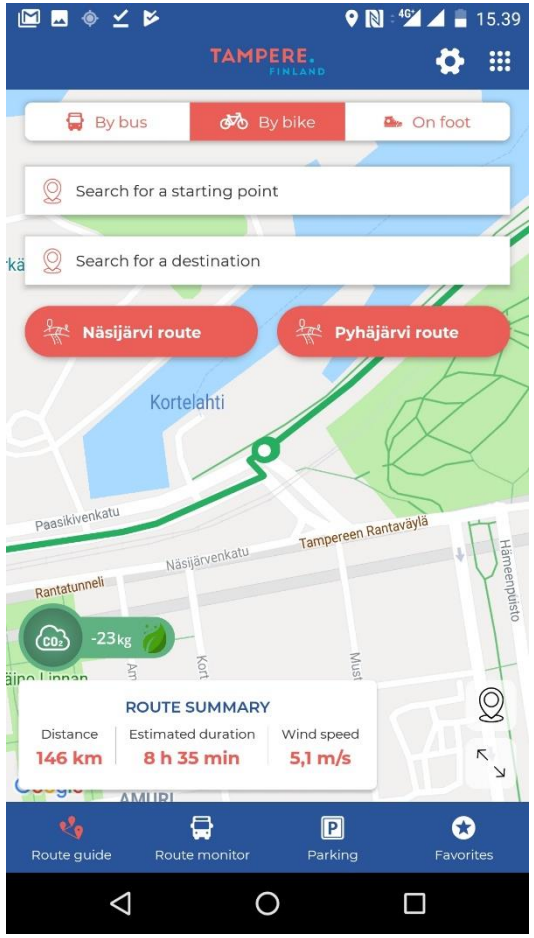
Tampere.Finland application



- Tampere.Finland application was developed as part of the innovative partnership of the Enlighten Tampere Hackathon process by Geniem.
- User location data gets collected for the input of the smart street lighting system in Viinikka pilot area.
- Tampere.Finland application is using the open data and API:s available in the city of Tampere.



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Smart Tampere IoT-platform

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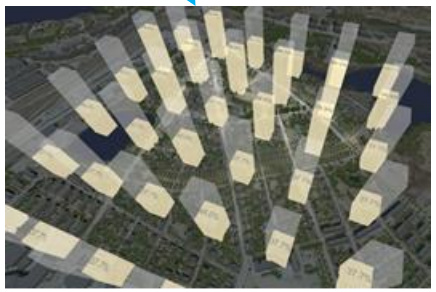
Picture: Arkta Rakennuttajat Oy / MA-Arkkitehdit Oy / Event Horizon Designs

Picture: Pexels

Platform will collect data and offer open APIs
EBUS-API
BEAT-API
ENE-API

Picture: Tampereen kaupunki

Picture: Skanska



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aurinkotalo

TaloTohtori
We digitalize buildings

SKANSKA

TAMPEREEN sähkölaitos

VTT

KIITOS

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