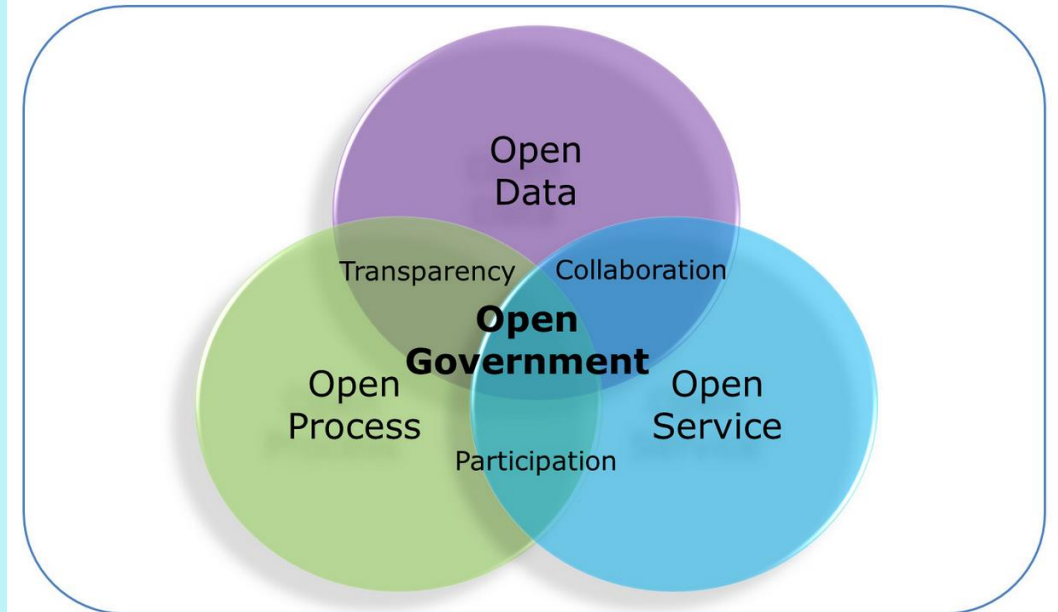


Digital Helsinki - Open City

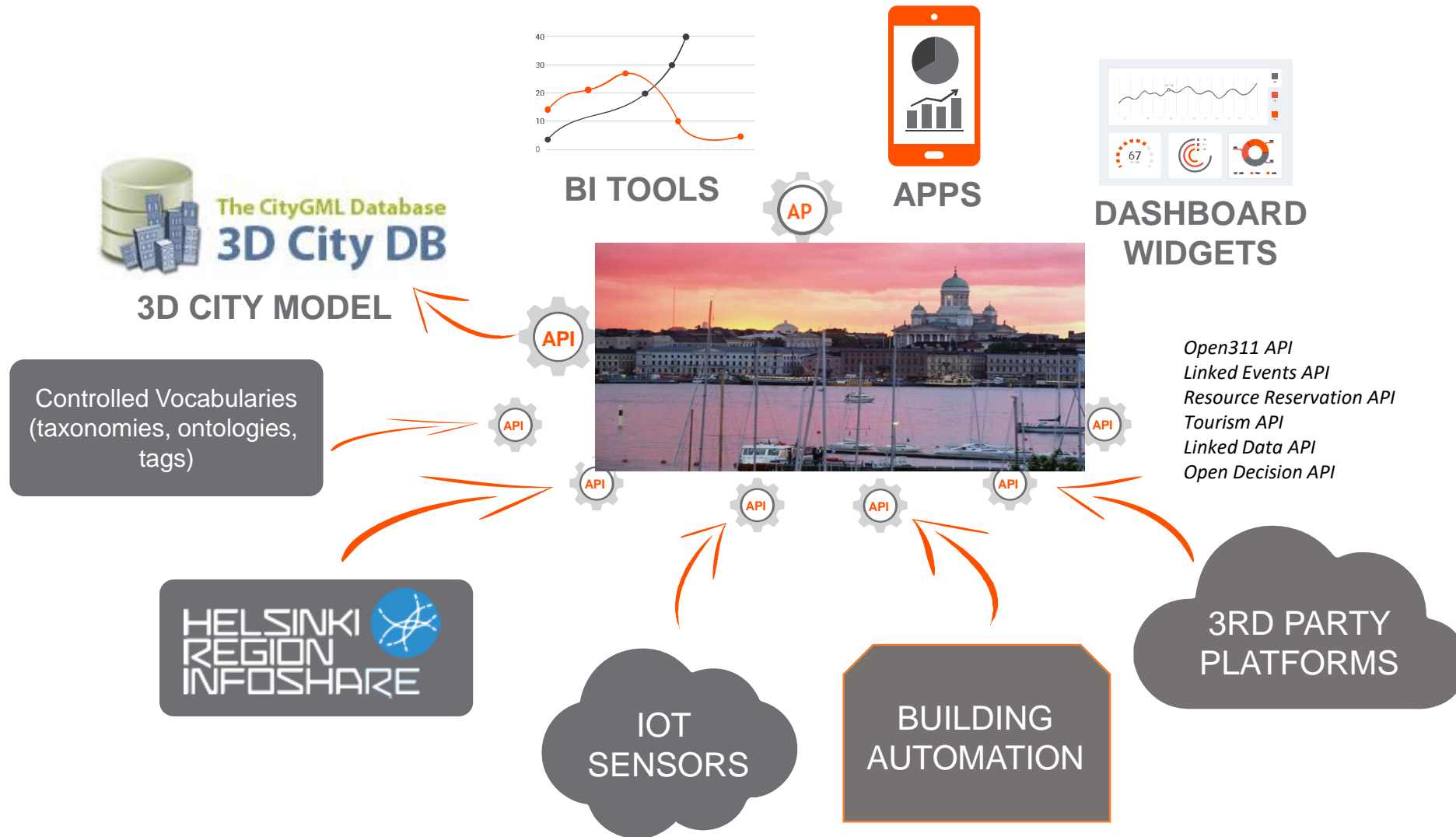


Open Government concept



Vision Paper: <http://ec.europa.eu/digital-agenda/en/news/vision-public-services>

Digital Helsinki - Open City



Big Data Project

Reboot the city with big data

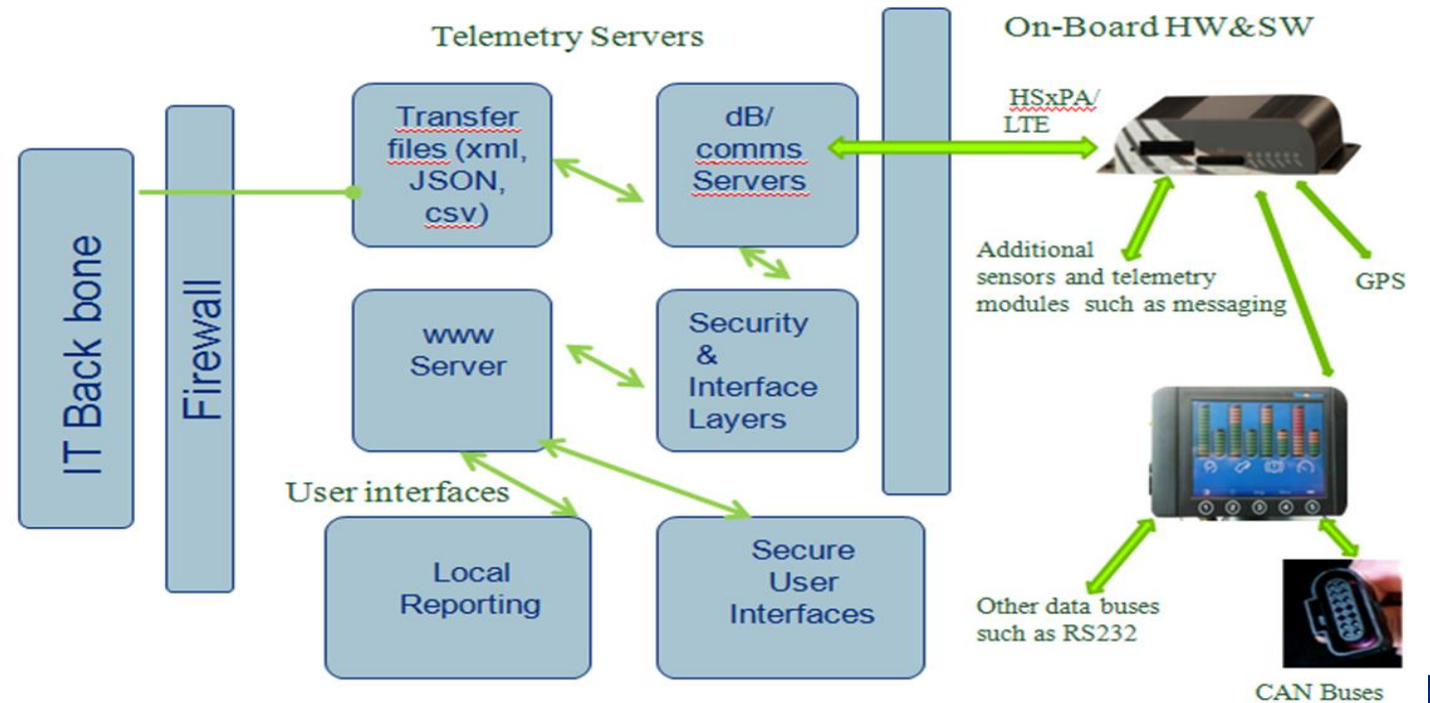
- Cities of Helsinki and Tampere and the University of Tampere launched the Urban Big Data Project (yy. 2016-2018).
- With this Project Helsinki has developed its capability to create exploitable big data to be utilized as an innovation ecosystem and platform for agile digital companies in Helsinki.



Big Data in Helsinki

- One of the main goals was to develop the capability to create exploitable big data to be used as innovation platform.
- This was done through creating a strategic up-take framework that considers issues from technology and governance to ecosystems, and by, using the previous, real-life piloting of the big data in key spearhead domains.

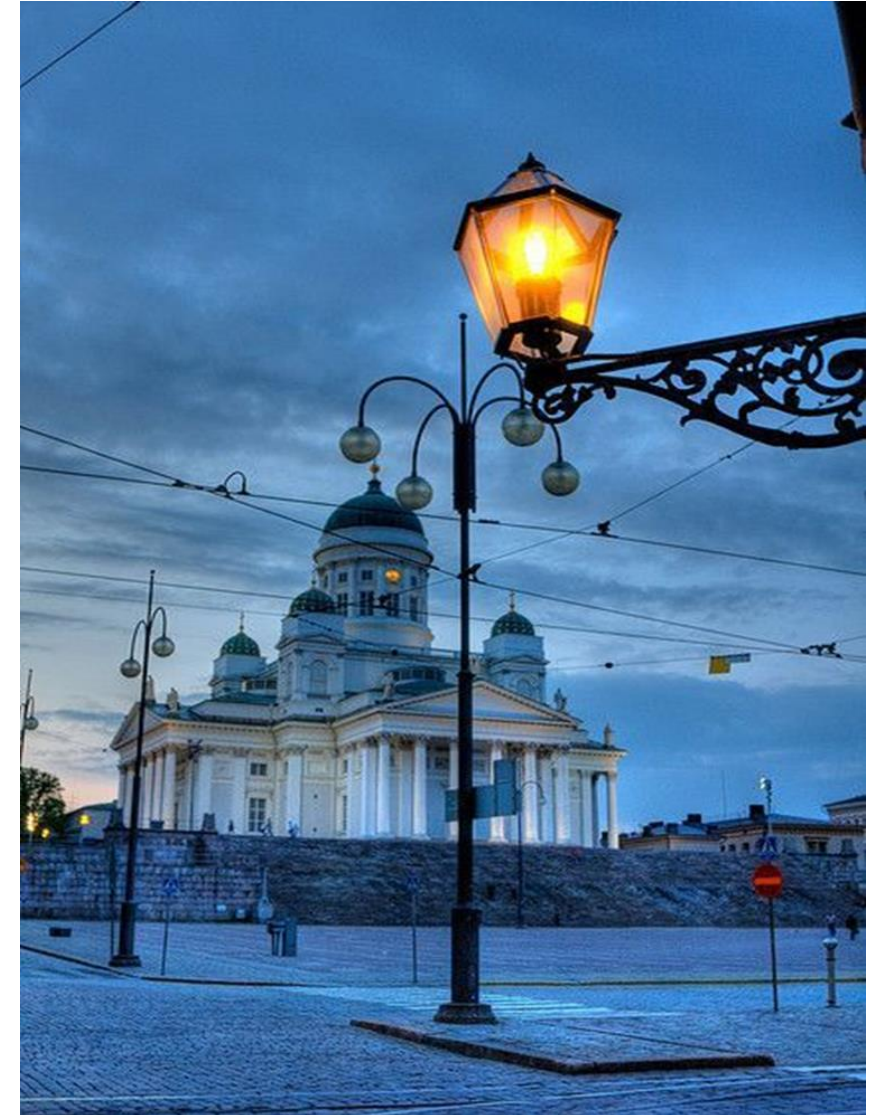
STARA



Big Data Project

Reboot the city with big data

- Targets were
 - New ecosystems and models how municipality and business partners co-operate
 - Continual ability to learn and innovate
 - Organizational leadership and management is based on analyzed and visualized data
 - Optimization of contracts, locations, fleet, routes, planning and real - time asset management
 - Enable automation and robotization
 - Demand based –approach
 - Co-design and co-creation of new digital services



Big Data – Service Innovations: Helper to optimize work routes

- Problem: In winter the roads and streets are icing. Non-icing is done with special trucks in two shifts by different people. Coordination which roads have been non-iced and which are the iciest right was complicated
- Main issues:
 - Forecasting the iciness
 - The coordination of work
- Solution: IoT solution which collects data from weather stations and trucks, and then optimizes which roads or streets should be non-iced next
- Benefits: Total effort minimized, less chemicals, less foreman work and less truck work
- Success rating (0-10): 9

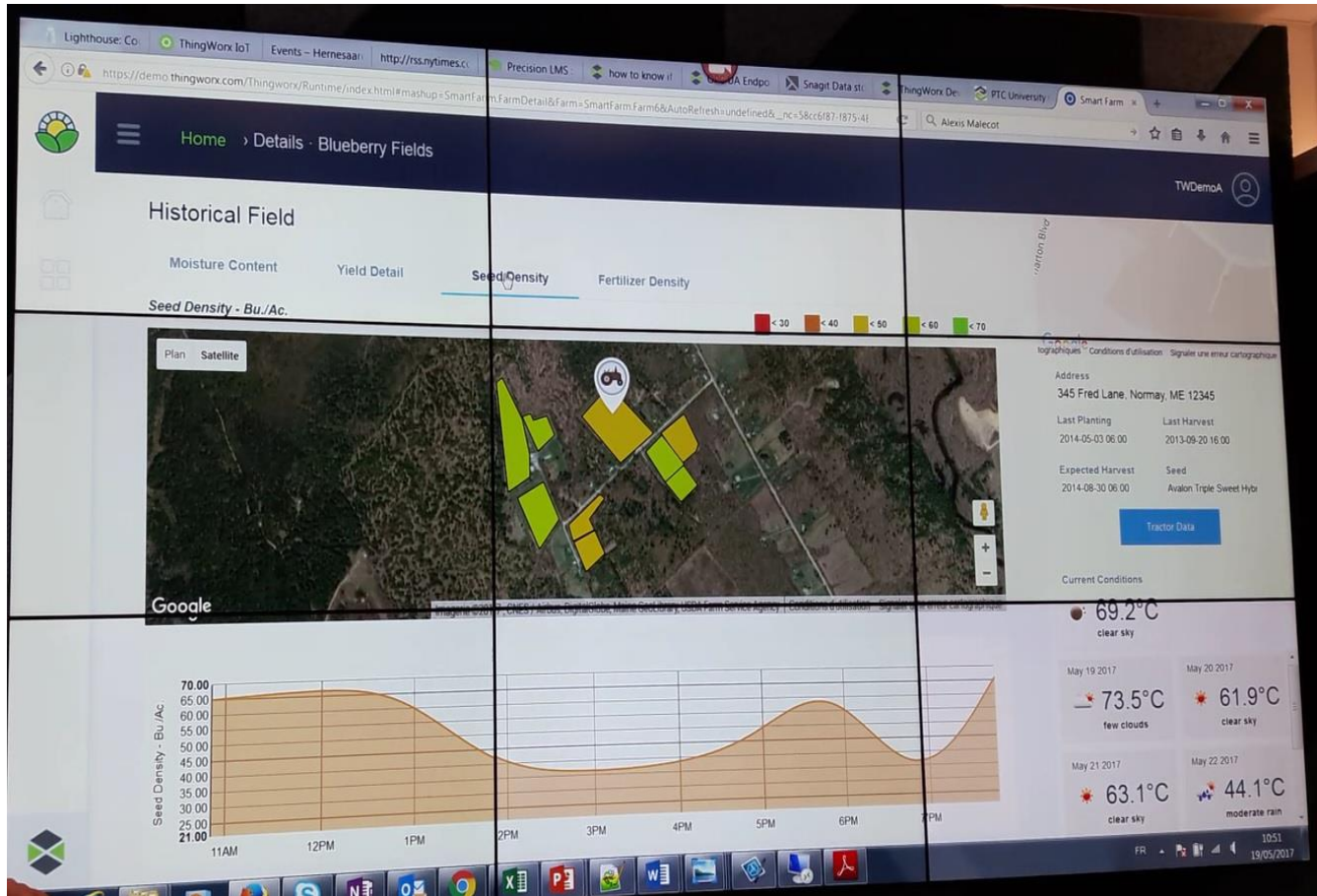


Big Data – Service Innovations: Callplate

- Problem: The streets have to be cleaned from snow, leaves etc. Some cars are parked illegally and must be transferred.
- Main issues:
 - Car Owner difficulties
 - Cost for City to transfer the cars
- Solution: Registered car owners get a automatised call or message when they have parked a spot where they should not
- Benefits: Total effort minimized; less cost, foreman work and citizen dissatisfaction
- Success rating (0-10): 9



Reboot the city with big data



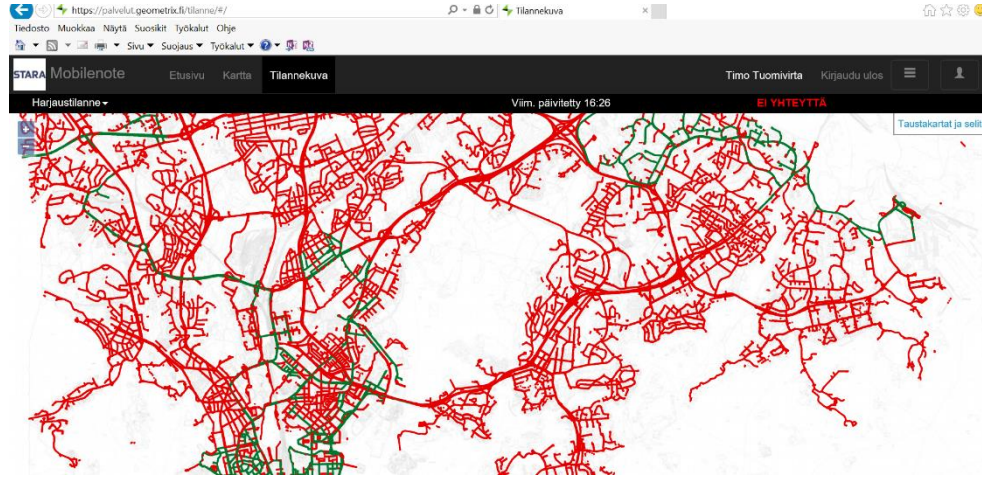
As a
framework for
SmartCity
maintenance

Route optimization and real time data in IoT platform

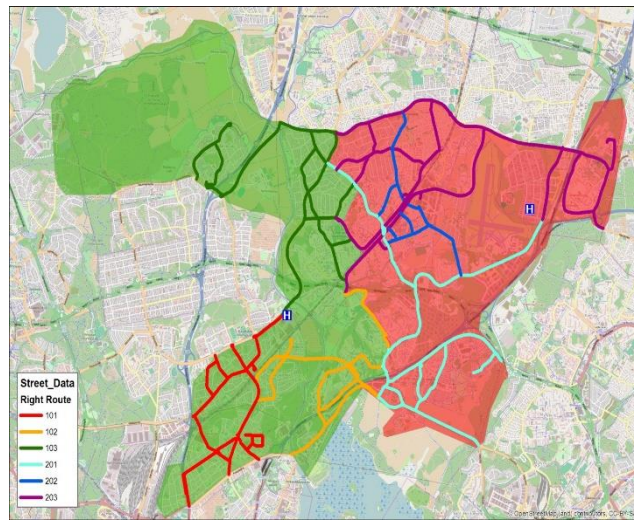
- Street maintenance
- Fleet telemetry
 - Fleet & asset management
- City maintenance related real time logistic management
 - Antiskid treatment
- Digiroad & digitraffic



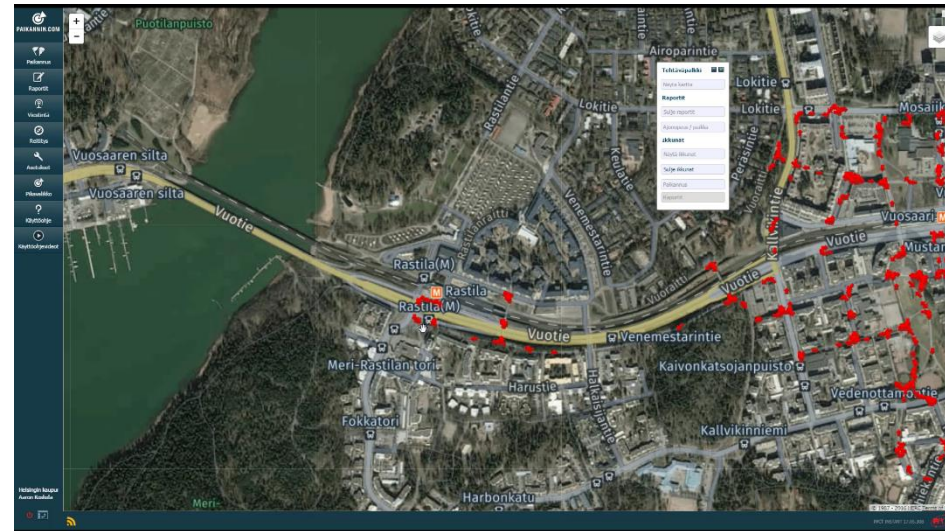
Some of our datasources



MobileNote



RouteSmart / ArcGIS



PPCT

Reboot the city with big data

Viimeisimmät mittaukset

Päivitä

Laite aktiivinen: **Live** (7 min sitten sitten)

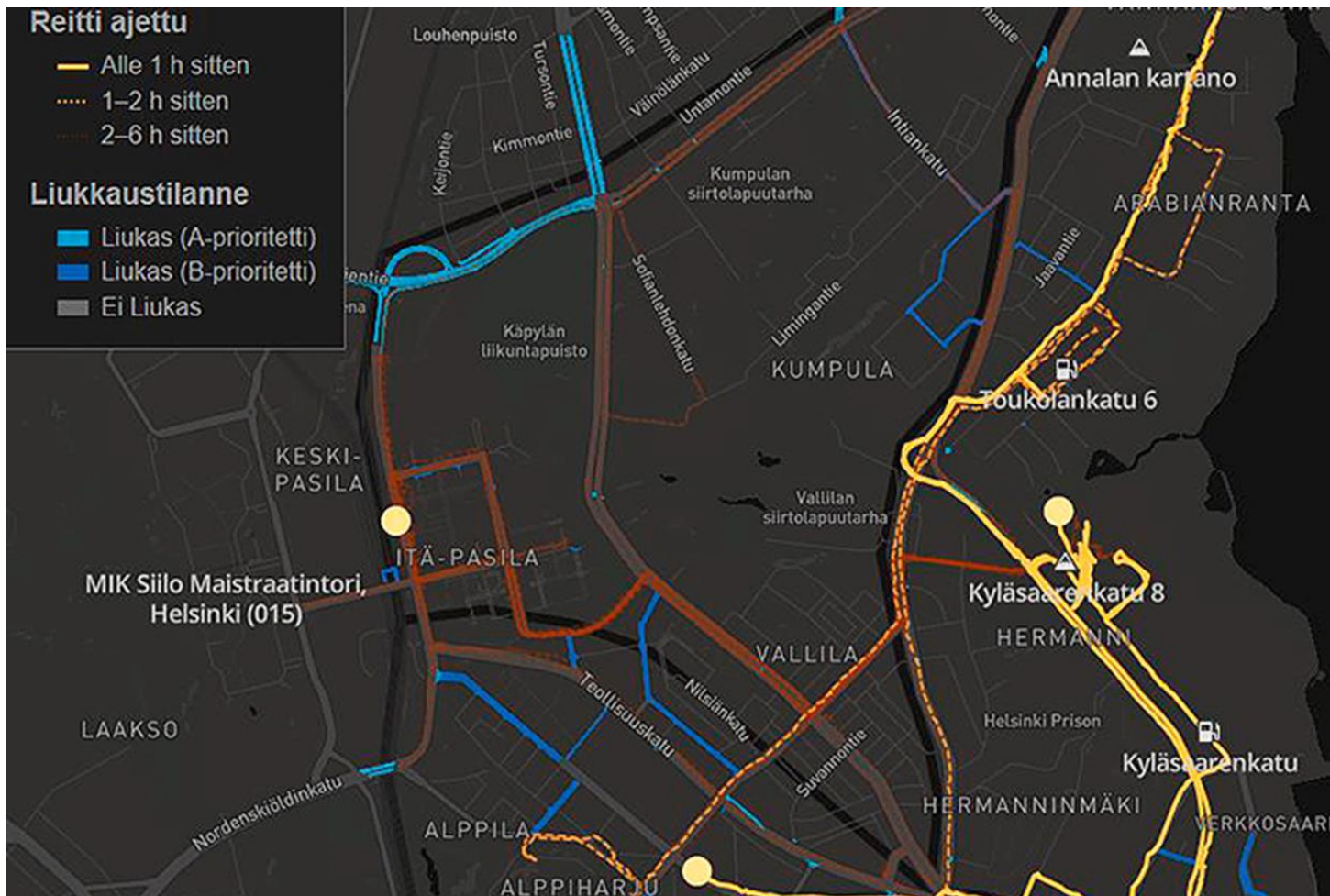
Live-päivitys: päällä

Päivitysväli: 1 min

Kuntotila: **Jäinen** ⚠



Reboot the city with big data

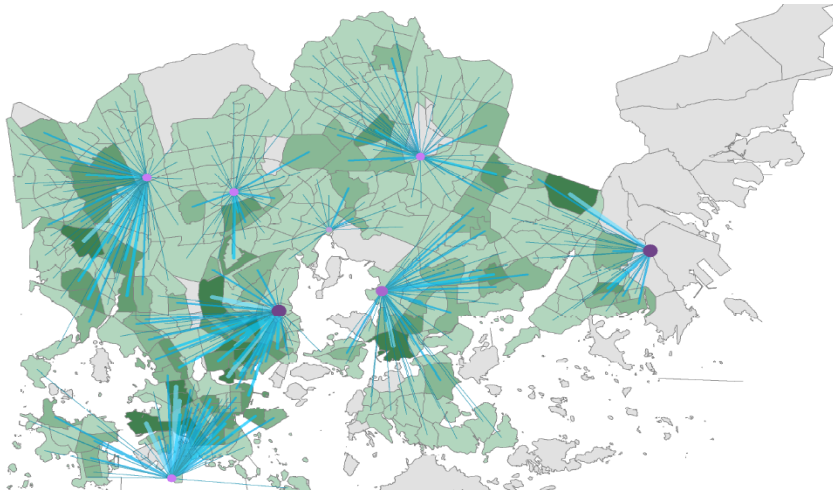


Computer vision and sensor data: Roads

Vaisala RoadAI CV algorithms extract various data out of the videos and provide results on the map-based user interface, in reports or transfer data to other systems.

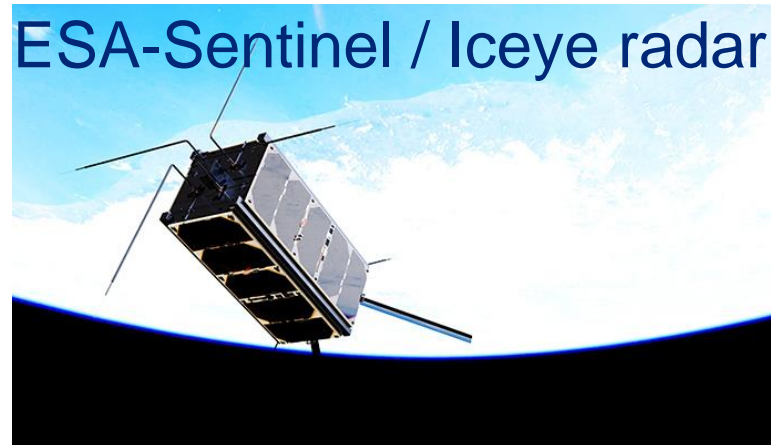
<p>Road roughness</p> 	<p>Cracks, potholes (Q3/2018)</p> 	<p>Anonymisation</p> 	<p>Traffic counting</p> 
<p>Traffic signs</p> 	<p>Ortoroad</p> 	<p>Weather condition</p> 	<p>See video about anonymization</p>  <p>https://www.youtube.com/watch?v=-n0f6kX0FA</p>

Helsinki city maintenance related logistic experiments

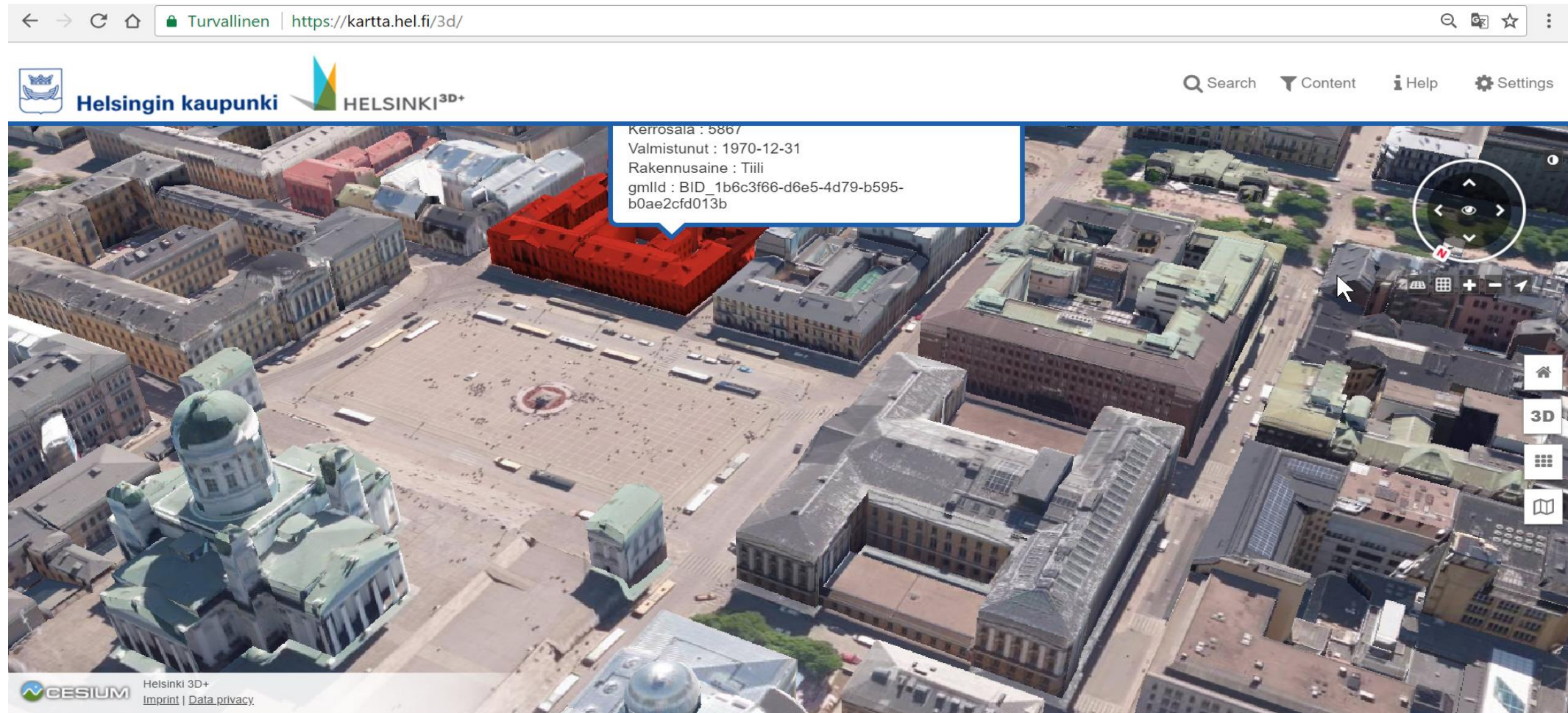


- Smart routing and storage capacity
- Remote sensing snow storage capacity alarm system

ESA-Sentinel / Iceye radar



Helsinki 3D-model and infrastructure digital twin



Testing multifunctional robot vehicle



Location information in logistics enables...

