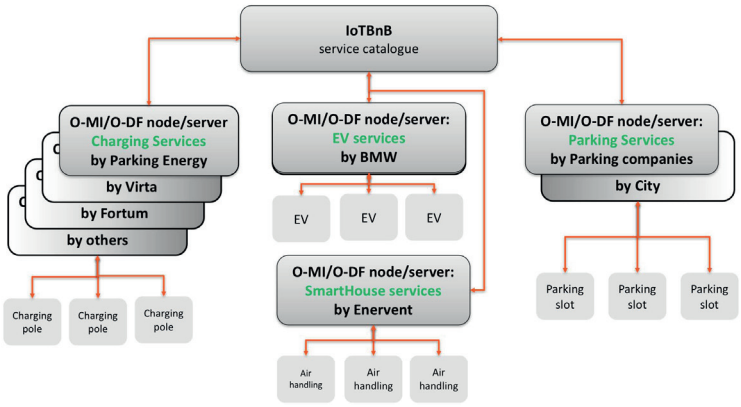
New E-Car Charging Ecosystem

Challenge

The city of Helsinki wants to support Finland's climate goal of adding 250,000 electric vehicles on its roads by 2030. Mass usage of electrical cars is limited by charging infrastructure as charging stations are inefficiently scattered throughout the city and controlled by several big players and a few small companies. A more comprehensive ecosystem of charging stations is needed that is more adaptive to e-car owner needs.

Solution

An electrical infrastructure to preheat cars during winter time already exists with many utility poles on the streets and parking areas having embedded electrical outlets. Combining these with commercially provided service points would create easy "roaming" where all city charging possibilities are integrated into the same system/map/service catalogue, which would accelerate the adoption of e-cars in Finland and create new opportunities for business.



bIoTope Technologies

The solution uses bIoTope technologies that ease the creation of System of Systems (SoS) where information from platforms from different charging service providers and the city of Helsinki's own electrical devices as well as other information sources can be accessed when, and as needed using standardised open interfaces. The bIoTope O-MI/O-DF technologies make it possible to easily integrate data from wide range of charging devices and systems, and to provide an open platform for building interoperable applications for e-car owners to roam between and utilise a wide range of charge points. The bIoTope technologies being utilised provide for security, privacy and trust mechanisms to facilitate responsible access, use, and ownership of data, even when data is stored in other applications and databases. Billing mechanisms for IoT are provided by bIoTope technologies to support micro-transactions for facilitating IoT market creation within the charging station ecosystem.

bIoTope

SMART CITIES PILOT CASE STUDY

www.bIoTope-project.eu

bIoTope Benefits

- Easily combine existing systems to create new open IoT Systems of Systems providing new opportunities for business and value for consumers
- Common features such as billing and micro-transactions to accelerate creation of sustainable ecosystems
- Security, privacy and trust mechanisms to facilitate responsible access, use, and ownership of data

"The technologies from bIoTope make it possible to create new ecosystems that bring together different technologies and providers to deliver new services that benefit consumers while creating new opportunities for businesses."

Natalia Reen
Forum Virium Helsinki

"Combining existing data and systems to create new IoT services for consumers and ecosystems based on Systems of Systems that benefit business through open interfaces is one of the key advantages provided by the bIoTope project technologies."

Prof Kary Främling
Aalto School of Science and Technology/bIoTope Project Coordinator

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