

SYNCHRONICITY

Enabling IoT for Smart Cities: Open APIs and Common Data Models

Martin Bauer, NEC Laboratories Europe



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No732240

Co-funded by



Switzerland



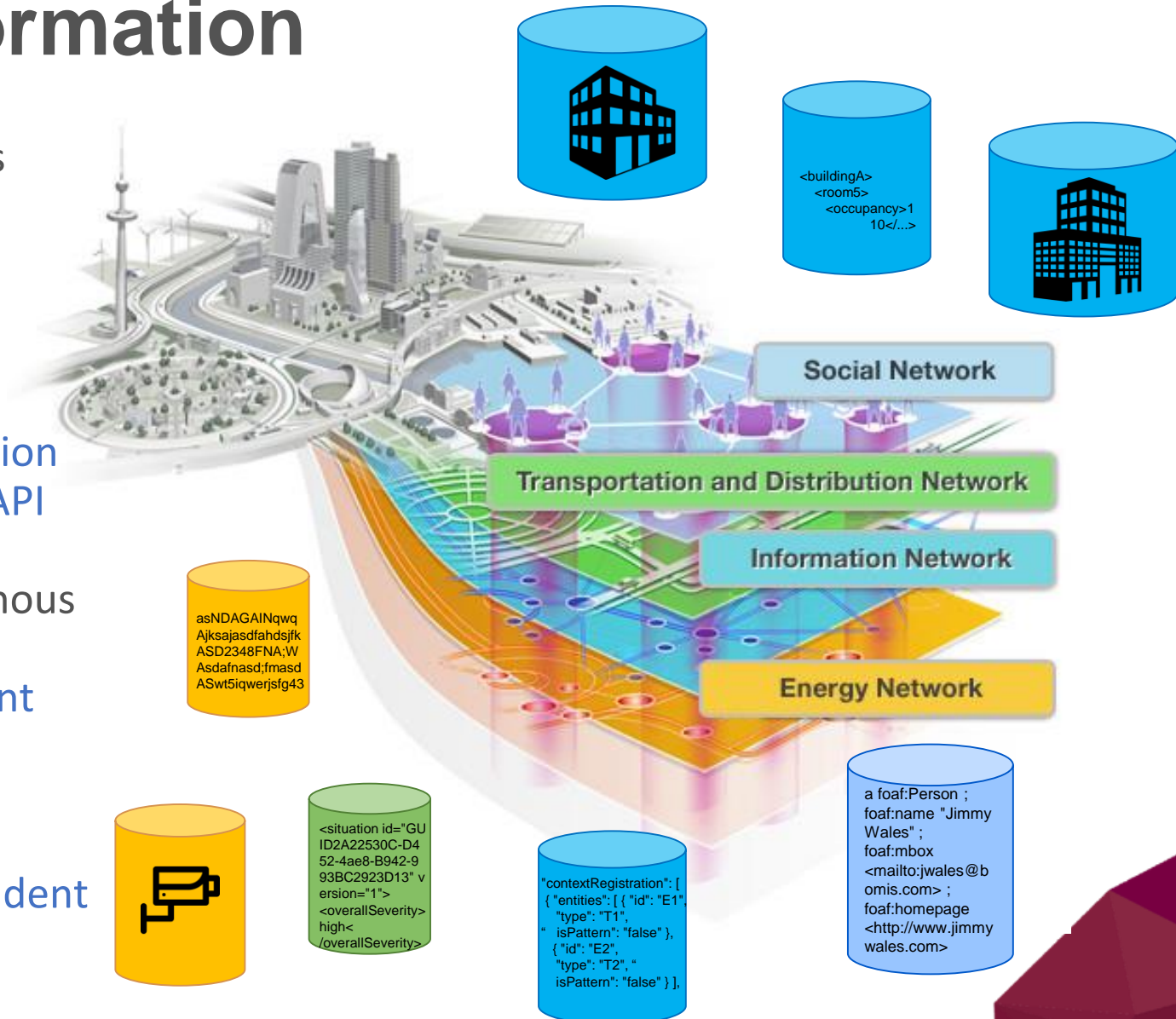
South Korea



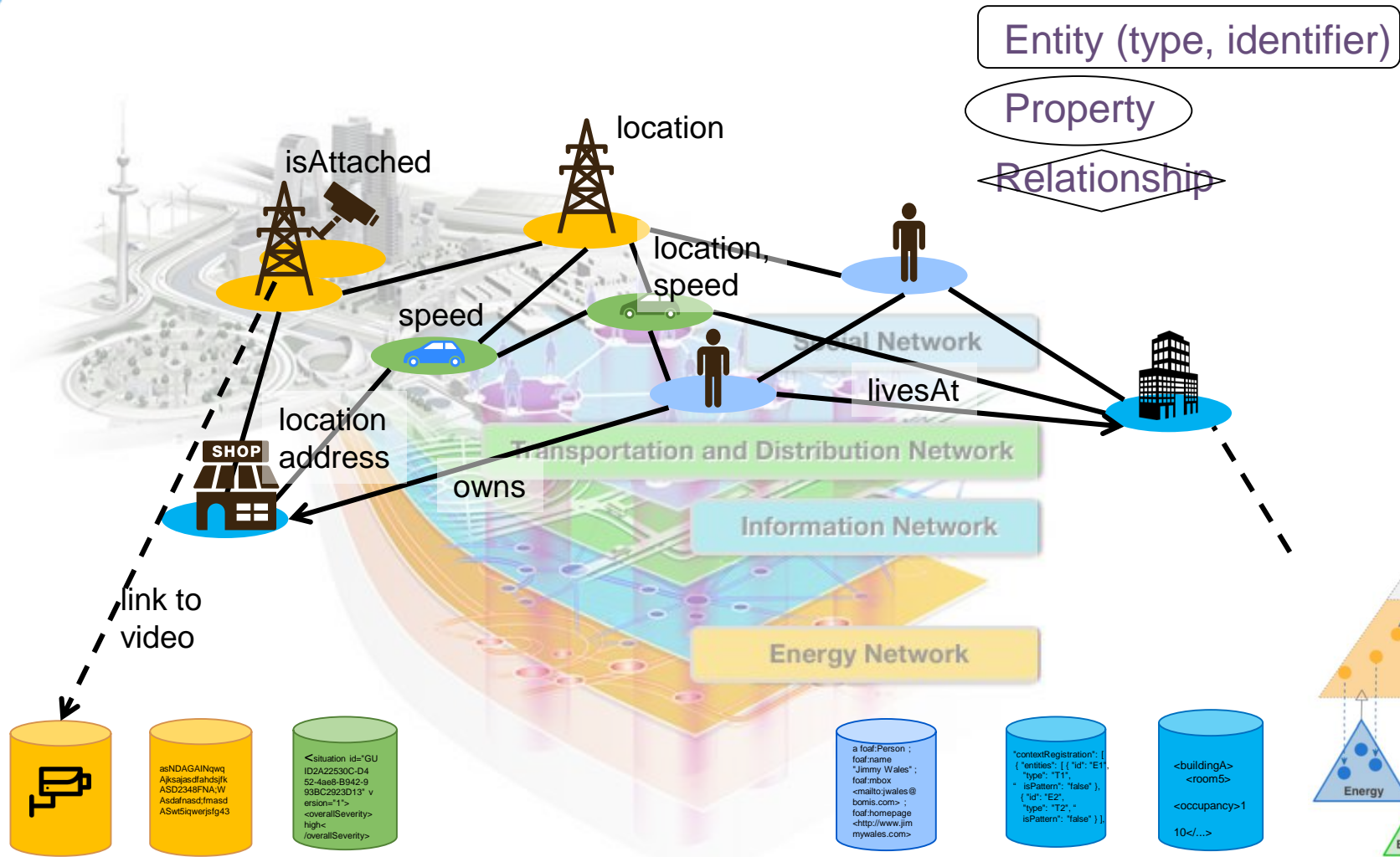
Mexico

Success of IoT depends on accessibility and reuse of information

- Current reality: information silos
→ Integrate information silos
- Current reality: heterogeneous information accessible through a plethora of APIs
→ Information on suitable abstraction level, accessible through single API
- Smart city: large scale heterogeneous deployments
→ Application needed to find relevant information
- Dynamically changing sources
→ Applications need to be independent of specific sources



NGSI-LD: Common Information (Meta) Model

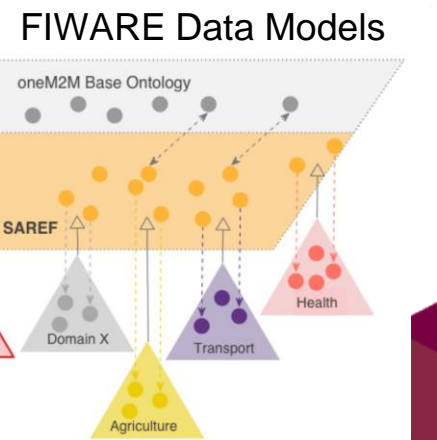


POINT OF INTEREST
 Specific point locations that someone may find useful or interesting. For instance, weather stations, touristic landmarks, etc.

[READ MORE](#)

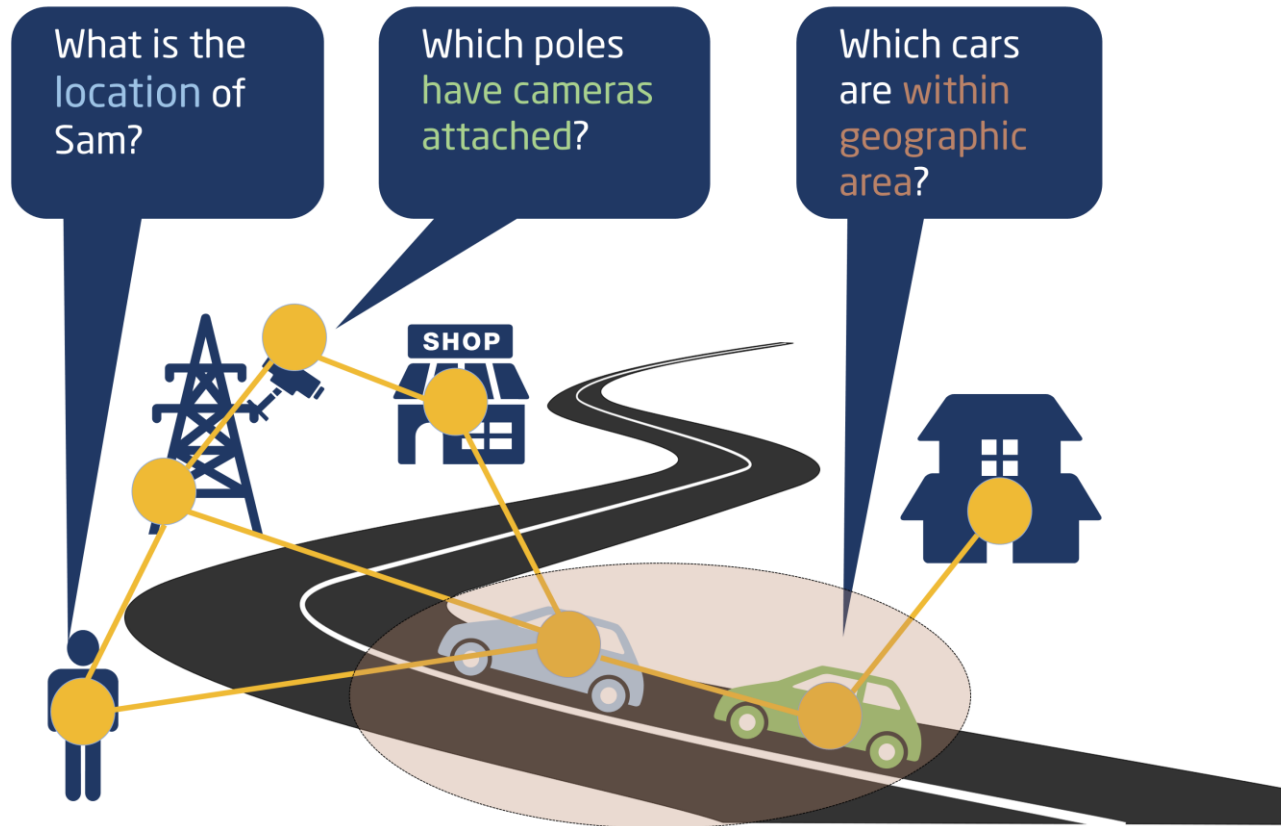
STREET LIGHTING
 Modeling street lights and all their controlling equipment towards energyefficient and effective urban illuminance.

[READ MORE](#)



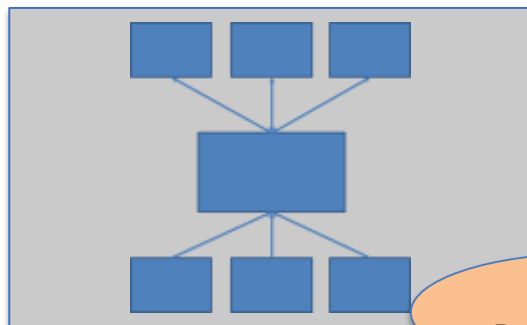
SAREF Ontology

NGSI-LD: Information-centric API

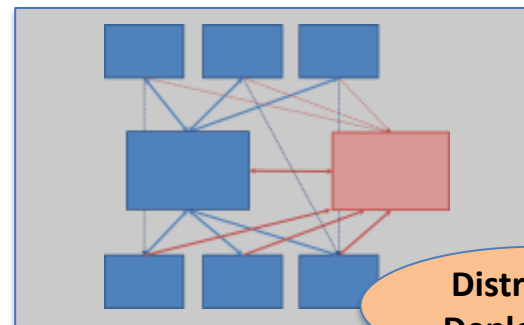


NGSI-LD Features

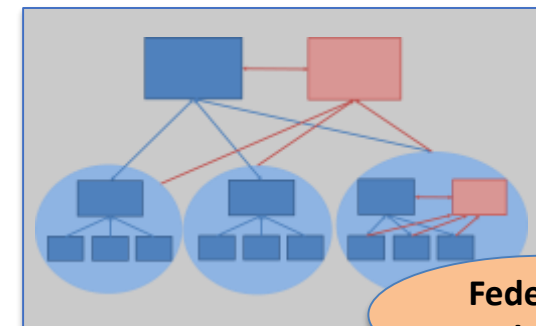
- Knowledge graph: Entities have Properties and Relationships
- Annotated Properties and Relationships
- Synchronous query and asynchronous subscription/notification interaction
- Filtering & paging
- Geographic scoping
- Temporal queries
- Support for centralized, distributed and federated architectures



Central Deployment



Distributed Deployment



Federated Deployment

Visit our website
synchronicity-iot.eu

Follow us on Twitter
[@SyncCityIoT](https://twitter.com/SyncCityIoT)

Follow us on Facebook
[@SynchroniCityIoT](https://www.facebook.com/SynchroniCityIoT)

General information
info@synchronicity-iot.eu

Open Call enquiries
helpdesk@synchronicity-iot.eu



Martin Bauer
NEC Laboratories Europe
martin.bauer@neclab.eu