

# SYNCHRONICITY

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

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

Co-funded by



Switzerland



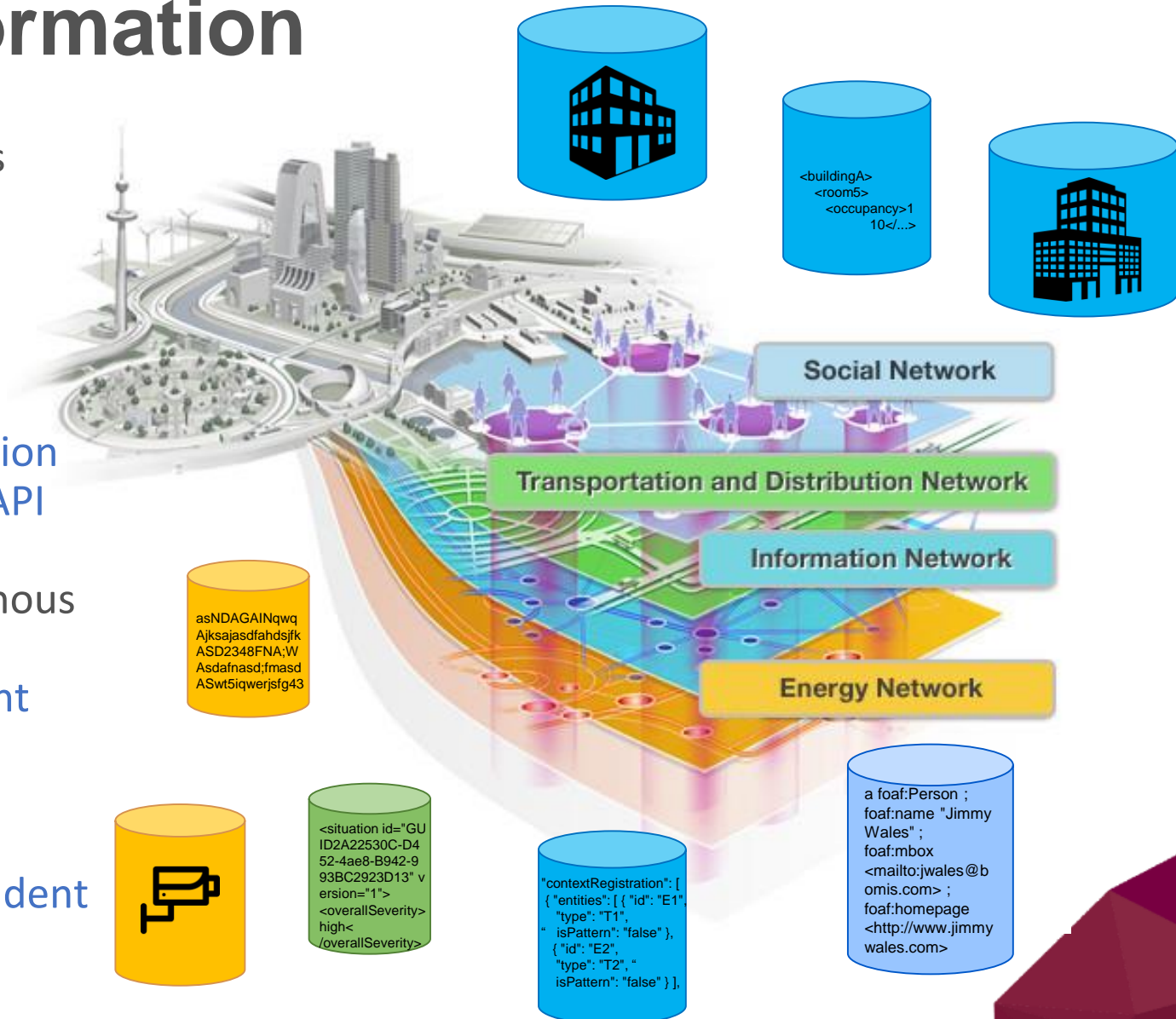
South Korea



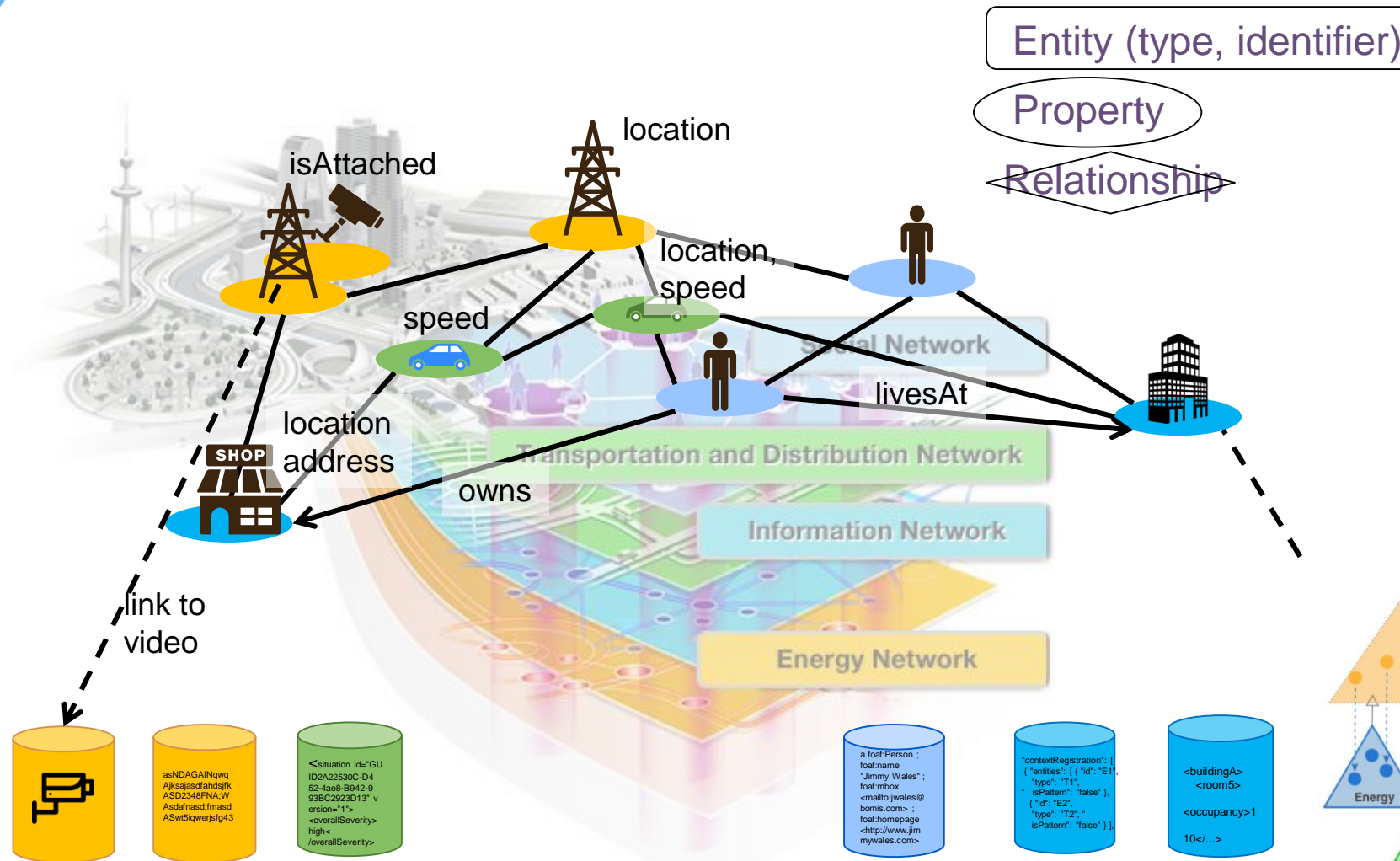
Mexico

# 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  
→ Applications need to find relevant information
- Dynamically changing sources  
→ Applications need to be independent of specific sources



# NGSI-LD: Common Information (Meta) Model



Synchronicity Data Models

**POINT OF INTEREST**

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

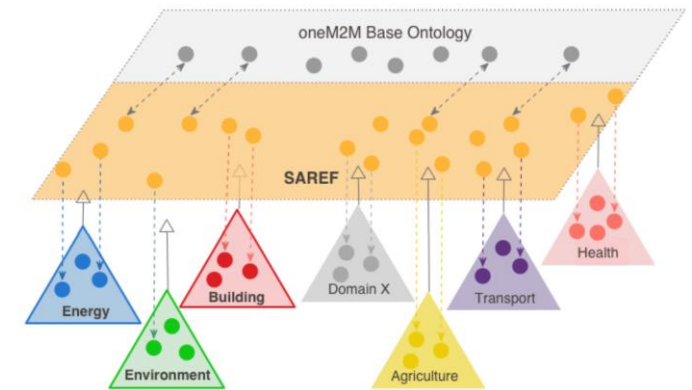
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**STREET LIGHTING**

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

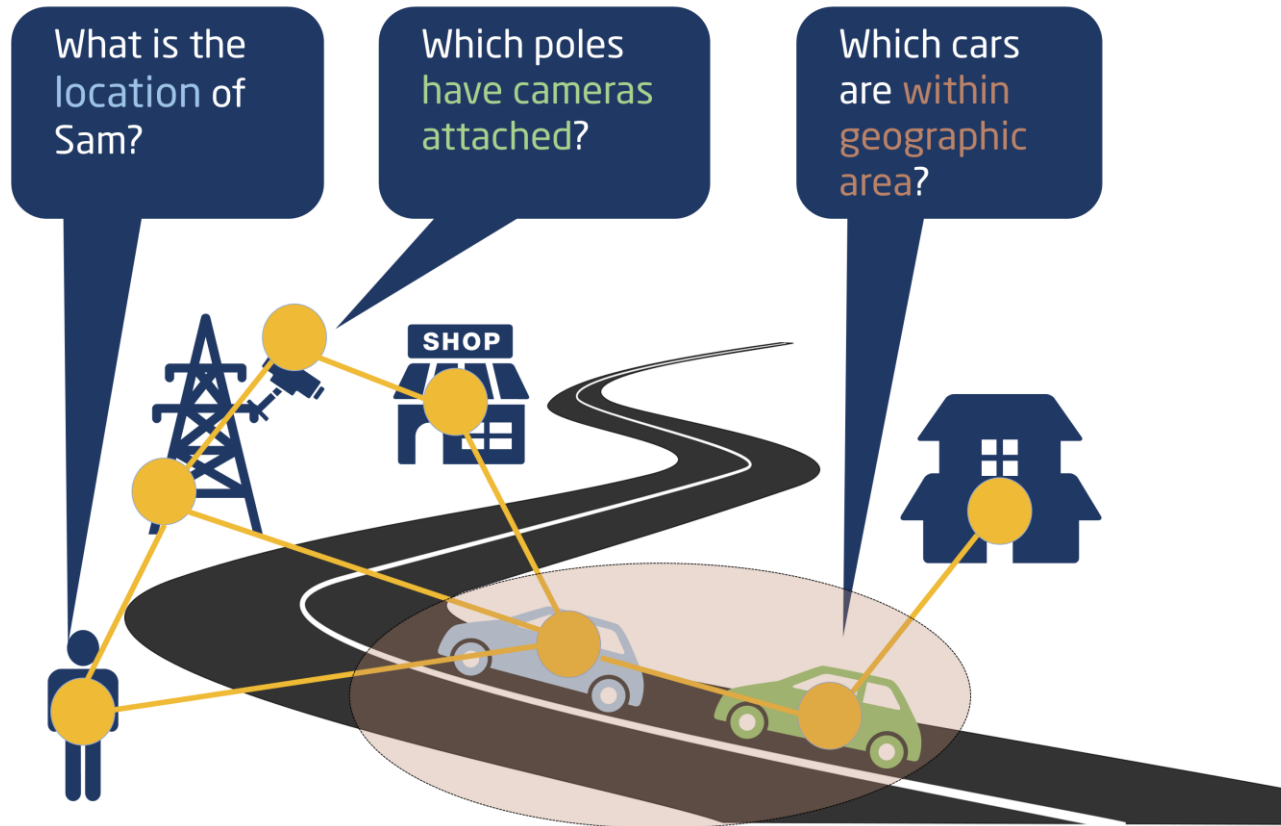
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FIWARE Data Models



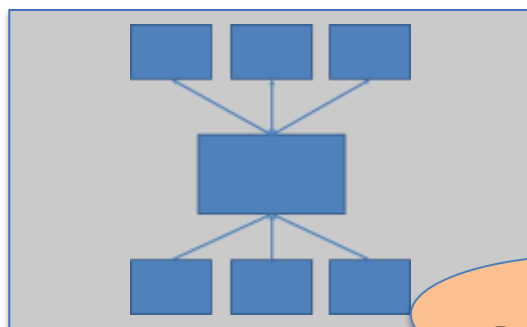
SAREF Ontology

# NGSI-LD: Information-centric API

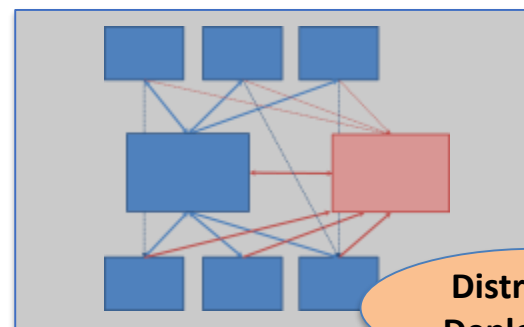


## NGSI-LD Features

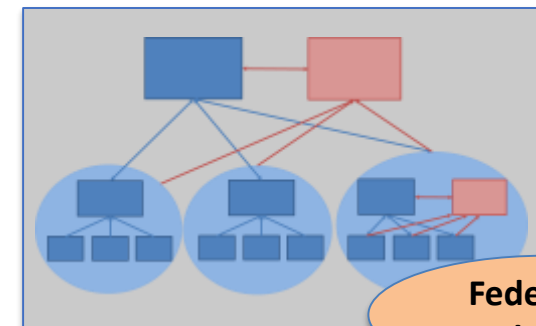
- Knowledge graph: Entities have Properties and Relationships
- Annotated Properties and Relationships
- Synchronous query and asynchronous subscription/notification interaction
- Filtering & paging
- Geographic scoping
- Temporal queries
- Support for centralized, distributed and federated architectures



Central Deployment



Distributed Deployment



Federated Deployment



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