



**Self Assessment  
Towards Optimization  
of Building Energy**



# E-DYCE Webinar

SATO project overview



This project receives funding in the European Commission's Horizon 2020 Research Programme under Grant Agreement Number 957128

# Who we are

16 partners across  
7 European countries

## Funding

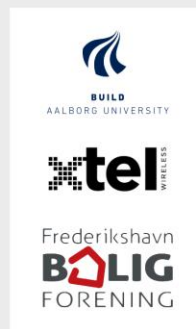
~7M€ over 48 months  
(Oct. 2020 → Sept. 2024)

## Pilots

9 pilots, 15 use cases

## Challenge

Building stock unable to properly **assess and optimize** whole building energy consumption





## SATO | Challenge

Most EU homeowners and building managers are unable to assess the energy performance of their buildings and energy consuming equipment, including appliances.



# What's our objective?

Create  
an IT platform for **automated self-  
assessment and optimization** of  
building's energy,

*capable of*  
**Assessment of real-life building  
energy use and energy  
consuming equipment operation**



# IoT integration, interoperability, and process automation platform

Seamless  
**data and systems integration**  
through  
**Semantic-based interoperability**

**Automated discovery**  
of assessments and services,  
based on **semantically**  
**annotated models of building**  
**components**





**BIM and  
WEB-based  
interfaces**



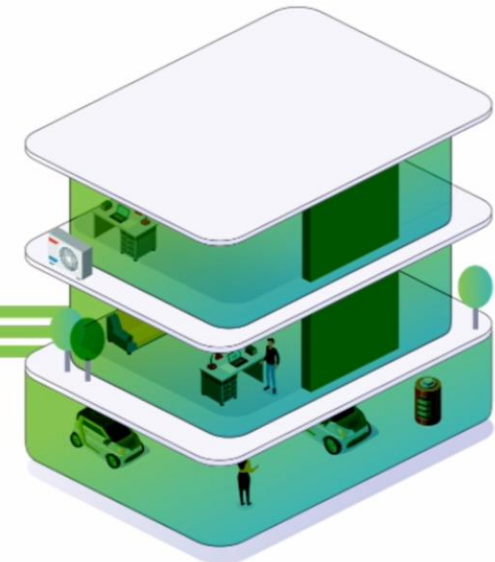
**Self-Assessment  
& Optimization  
Services**



**Self-Assessment  
Framework**



**SATO  
middleware**



## **SATO | Platform**

Architecture in 4 self-  
contained layers.



### Main functions

- Monitoring
- Actuation

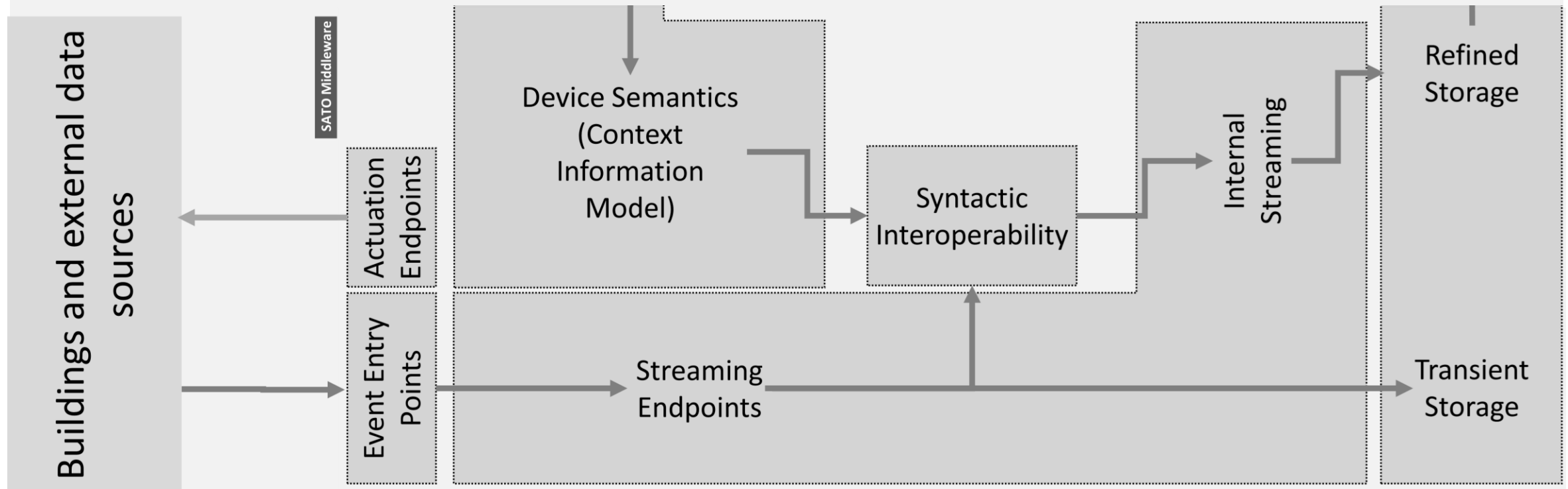
### Building monitoring

- IoT connectivity
- Communication protocols
- Data formats

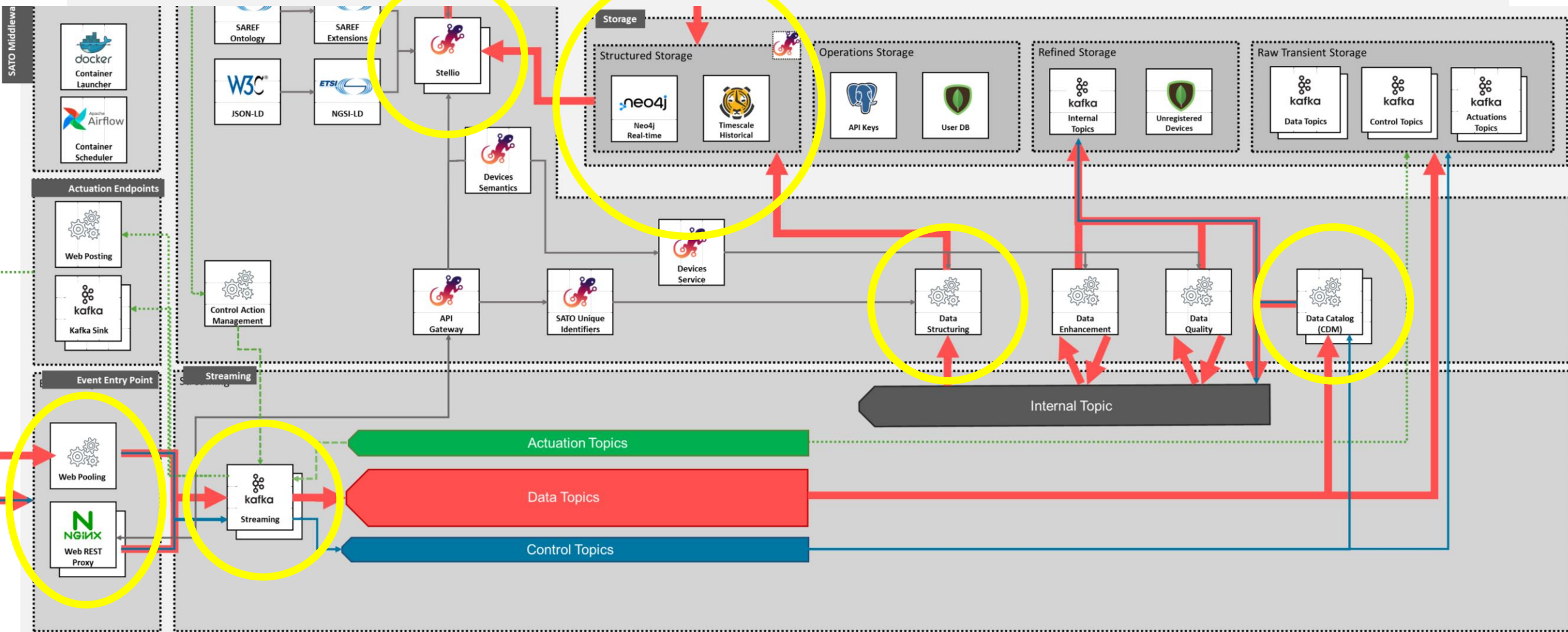
### Requirements for dynamic energy management

- Single format for data integration
- Systems integration for interoperability
- Relation of data with systems, building components, or exterior sources
- Relations between systems and building components

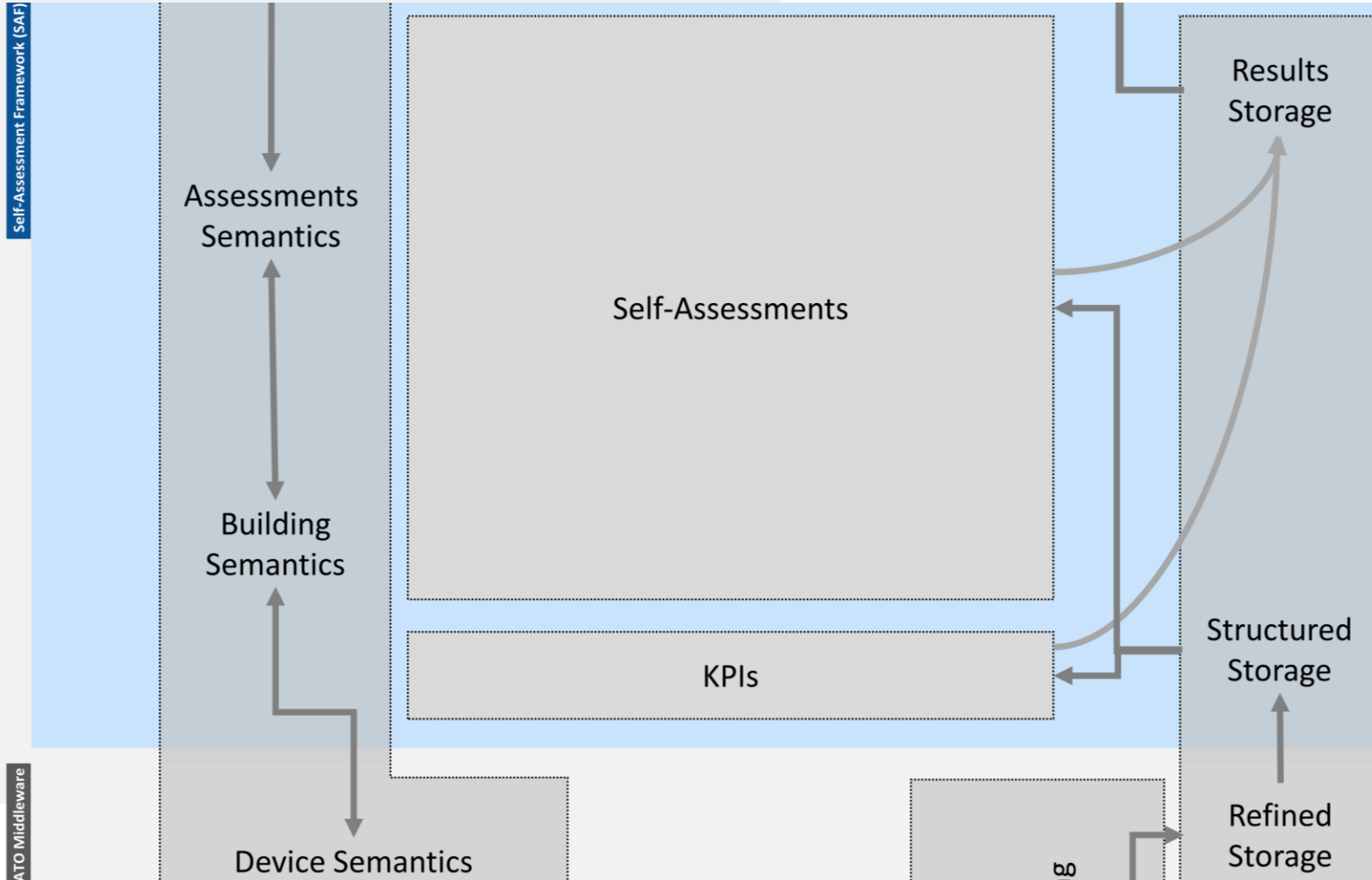
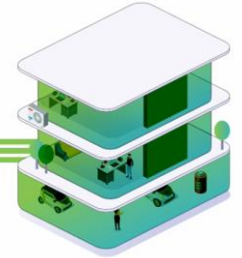
# What's our approach?



# In practice?



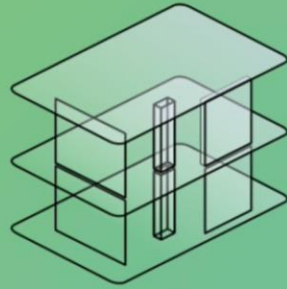
# What's our approach?



**The self-assessment framework considers energy assessments of the following categories**



**Whole  
building**



**Building  
Envelope**



**Occupants**



**Building  
systems**



**Appliances**

# | Platform

**The SATO platform considers optimization services of the following categories**



**Self-assessment**



**Aggregated control**



**User comfort**



**Flexibility**



**Systems and Equipment & Building Components**



# Thank you!



This project  
receives funding  
in the European  
Commission's  
Horizon 2020  
Research  
Programme  
under Grant  
Agreement  
Number 957128