



"FIWARE for SmartCity applications - yes or no?"

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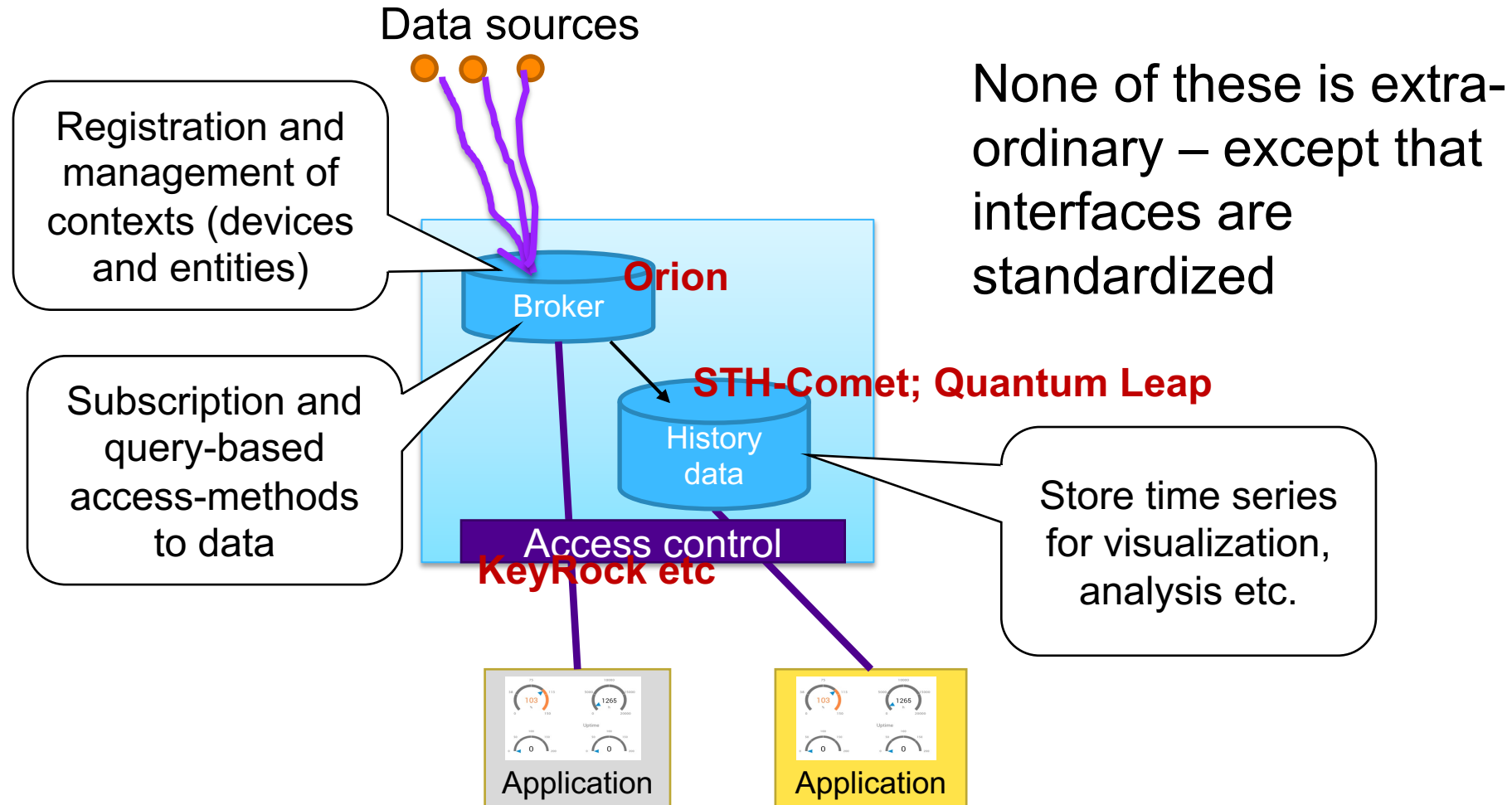
Background

- We used FIWARE actively in CityloT-project 2018-2020.
- The system has continued working and some data is still collected
- After that our projects have used various other solutions
- For this presentation I had a quick look about the current status.

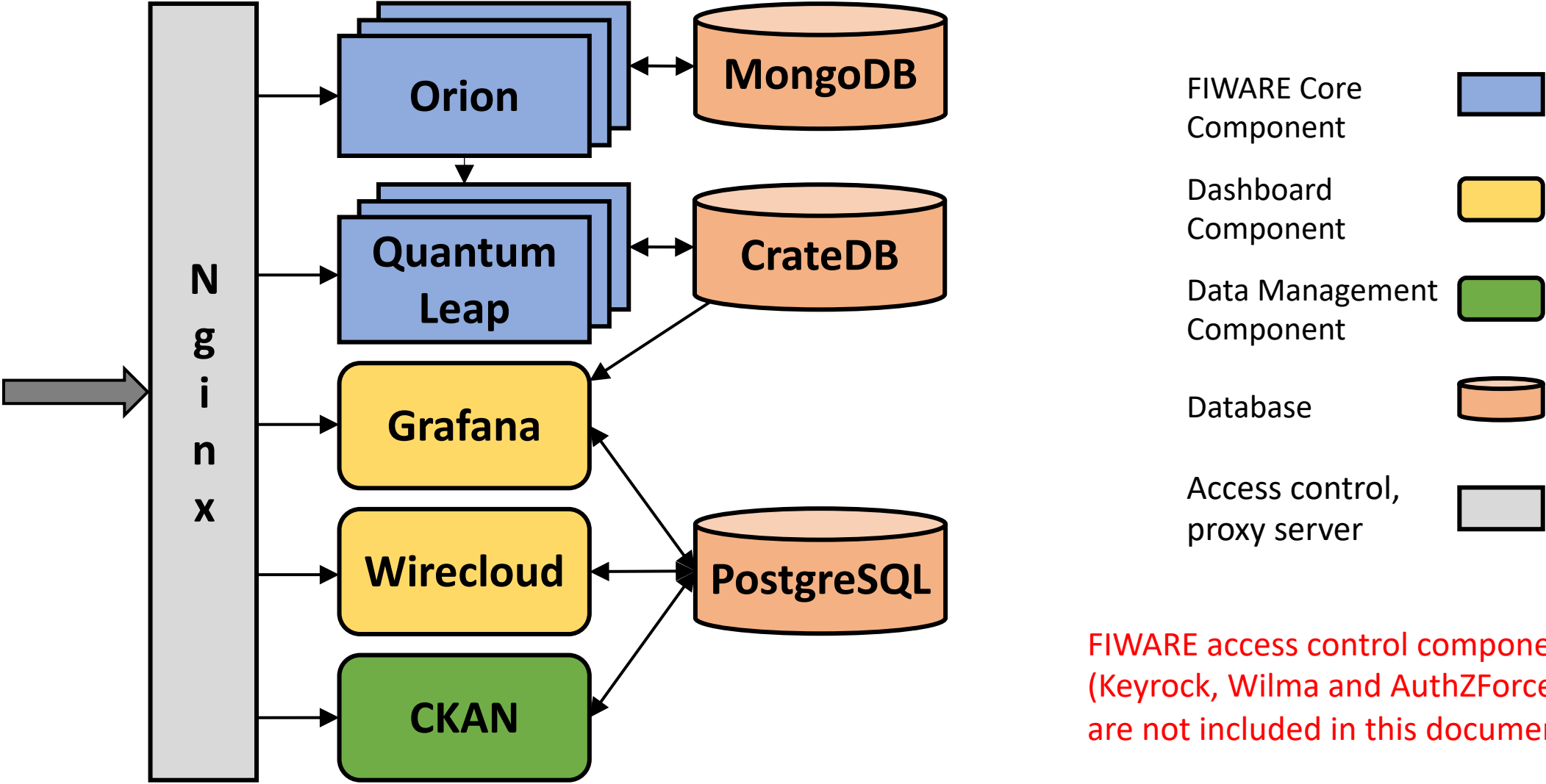
FIWARE – why we selected it?

- We wanted an open solution (interfaces and implementation)
- In Jan-March 2018 we analyzed the standards
- FIWARE was discussed in smart city context
 - Many asked "Does FIWARE work?" – other options, except commercial, missing
- Synergy benefits with other platforms (e.g., Stardust)
- Matched the project title: *"Tulevaisuuden toimijariippumaton dataintegraatioalusta"*

FIWARE Functionalities



FIWARE-based platform architecture



FIWARE access control components (Keyrock, Wilma and AuthZForce) are not included in this document.

We used NGSI-v2 but shortly analyzed the NGSI-LD

Dashboards / demos

Electric Bus > TKL 14 ▾

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Speed and power for the bus TKL 14



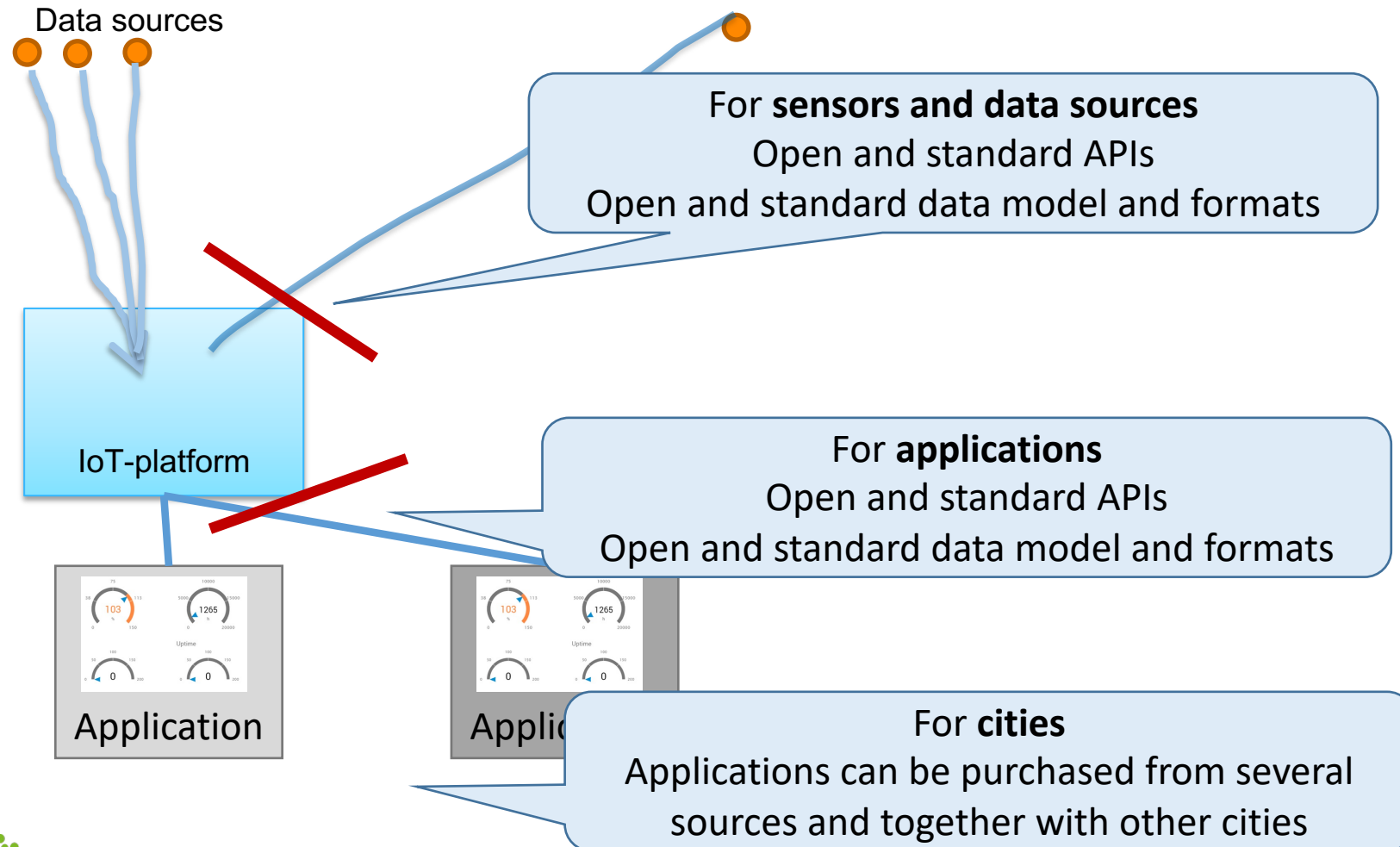
Vehicle tracking



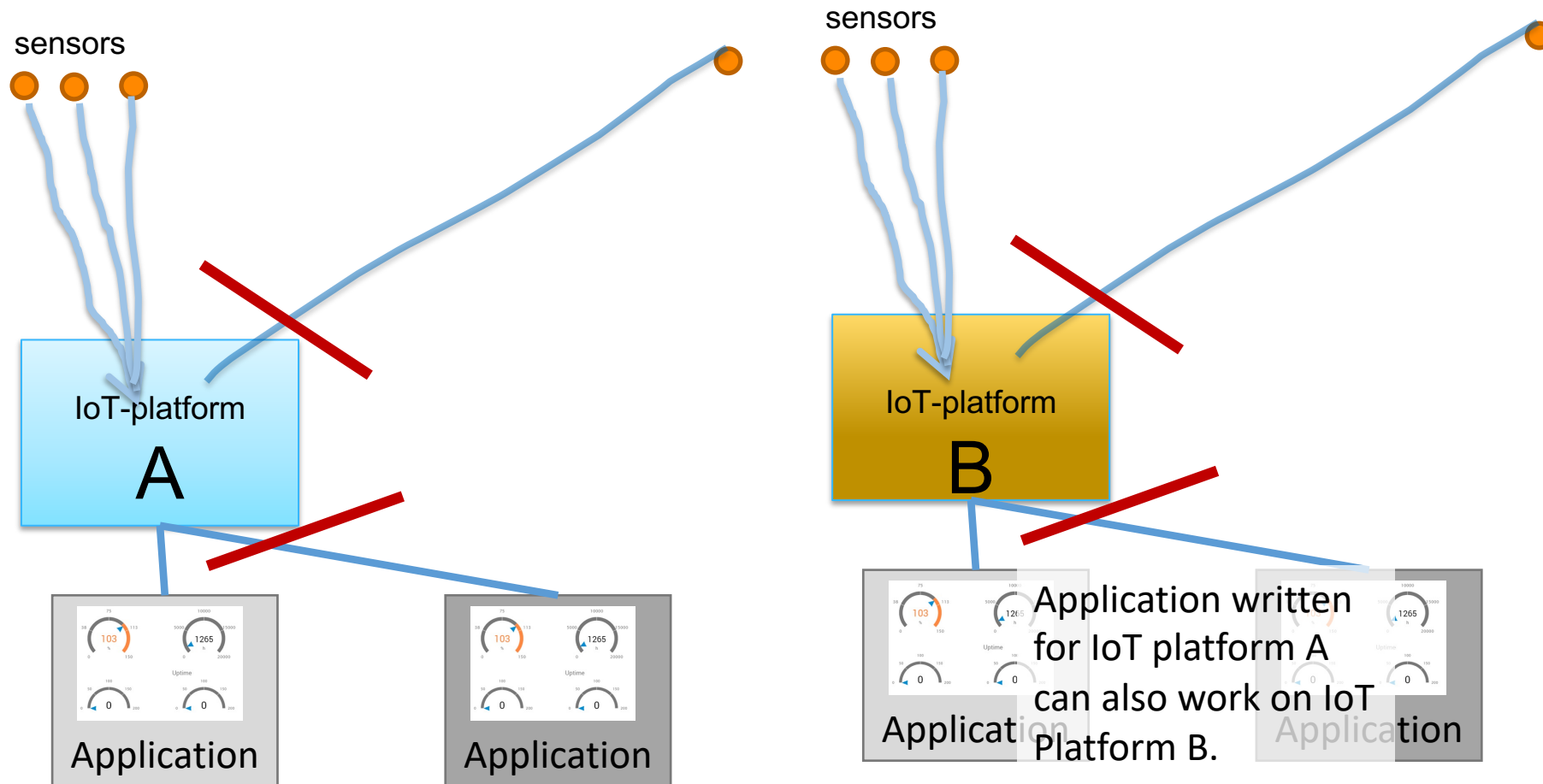
Battery charge state and door status



A key element is use of open interfaces



The internal implementations may vary – CityIoT focuses on interoperability interfaces



What is “interface”

- API call
- Data format
- Documentation and metadata
- Usage rules

**But reuse of the data has still
been a nightmare**

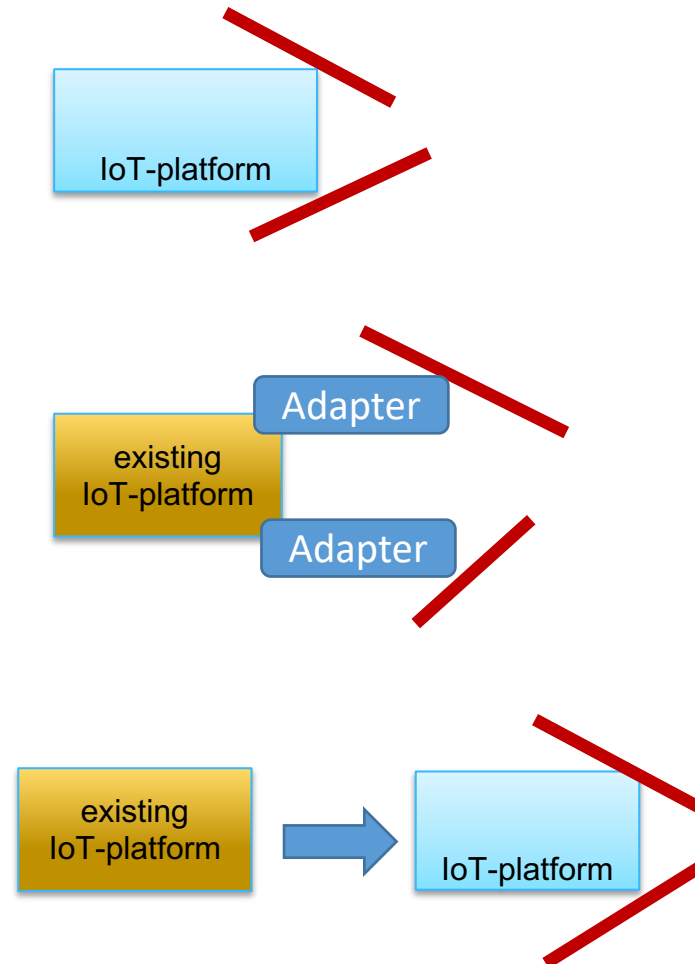
**And maintenance is also a
nightmare**

**Usage needs are not known in
advance**

**Managing user rights is a
nightmare?**

Possible realizations (in order of preference for CityIoT)

1. IoT platform that directly supports CityIoT
2. Existing IoT platform with CityIoT adapters
3. CityIoT platform that duplicates data for CityIoT



- The implementation works
 - Has some issues, but so do the commercial ones
- The architecture is simple in principle but there are several options for many purposes
- Roadmapping is mostly missing
- The amount of data format standards is still limited (and it is unclear how to boost it)

Question 2020

- Future of the ecosystem?
- How many domains it can cover?
- E.g. Will smart city standards be in or on top of FIWARE
- Will there be commercial implementations with maintenance commitments?

Data platform?

Set of interfaces?

Eco-system ?

FIWARE, the Open Source Platform for Our Smart Digital Future

A framework based around supplying a cornerstone function required in any smart solution: the need to manage context information, enabling to perform updates and bring access to context.

BAE Framework APIs

support to Context API/Data monetization based on open TM Forum Business APIs.

Technology [TMForum](#)

[More Info](#) [Docs](#)

BAE Charging Backend

Charging Backend based on open TM Forum Business APIs.

Technology [TMForum](#)

[More Info](#) [Docs](#)

BAE Logic Proxy

Logic Proxy based on open TM Forum Business APIs.

Technology [TMForum](#)

[More Info](#) [Docs](#)

BAE Revenue Sharing

Revenue Sharing based on open TM Forum Business APIs.

Technology [TMForum](#)

[More Info](#) [Docs](#)

Smart City Datamodels

- [dataModel.Building](#)
- [dataModel.GBFS](#)
- [dataModel.OSLO](#)
- [dataModel.Parking](#)
- [dataModel.ParksAndGardens](#)
- [dataModel.PointOfInterest](#)
- [dataModel.Ports](#)
- [dataModel.S4BLDG](#)
- [dataModel.StreetLighting](#)
- [dataModel.Transportation](#)
- [dataModel.UrbanMobility](#)
- [dataModel.WasteManagement](#)
- [dataModel.Weather](#)
- [dataModel.WifiNetwork](#)

FIWARE is a Community

Retrospective on CityIoT and Tampere (NOTE: my personal thinking)

- Tampere did not want to hire a group of FIWARE gurus to run the show.
- Rather buy from commercial provider as a service
- For commercial provider it is easier to use commercial product

Yes or no?

- Yes

- For experiments
- Research and education settings
- Collaborative settings

- No

- Professional and practical system with minimal human resources