DIGITAL URBAN EUROPEAN TWINS

For better public decision-making

(a brief history of digital definitions and old/new speak)

Hugo Kerschot – hugo.Kerschot@is-practice.eu

Survey on “digital transformation” in public services

- Have you already implemented an urban digital twin in your city?
  - Yes
  - No
  - (Don’t know)
- Do you have a plan to implement services enabled by Artificial Intelligence in your city?
- ….

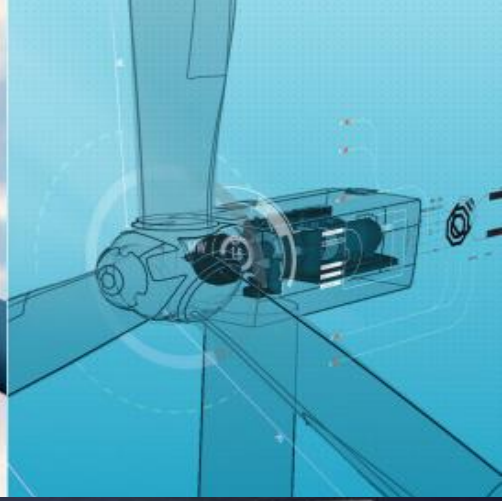
Digital Twins can disrupt the status quo…

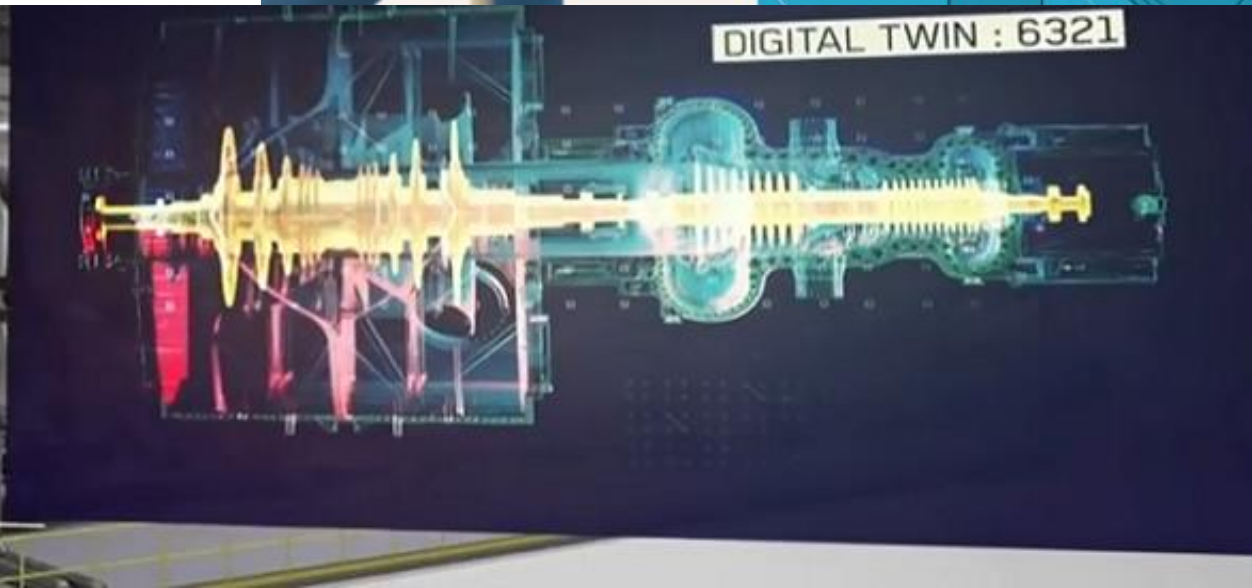
A digital twin is a digital replica or representation of a system, process or place which mimics its real-world behaviour.

It's a real-time updated collection of data, models and algorithms allowing for better real-time analysis of assets.

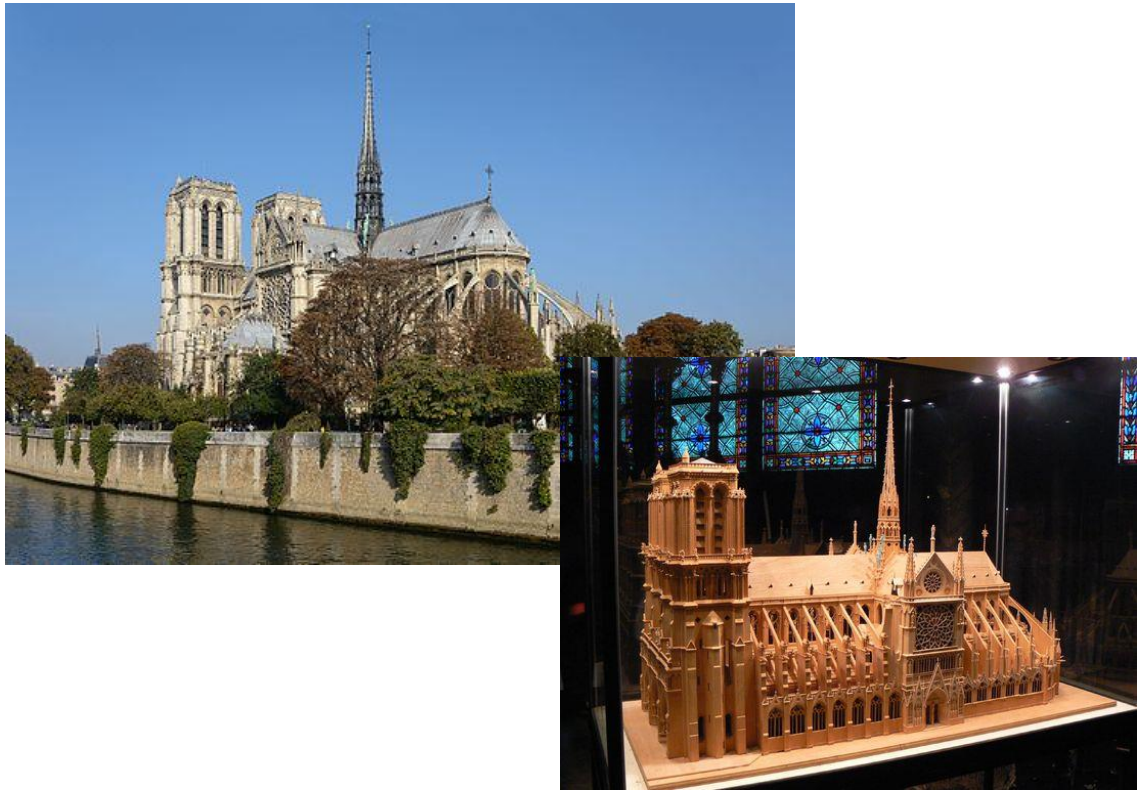
DUET

…adapting lessons from the private makers sector..



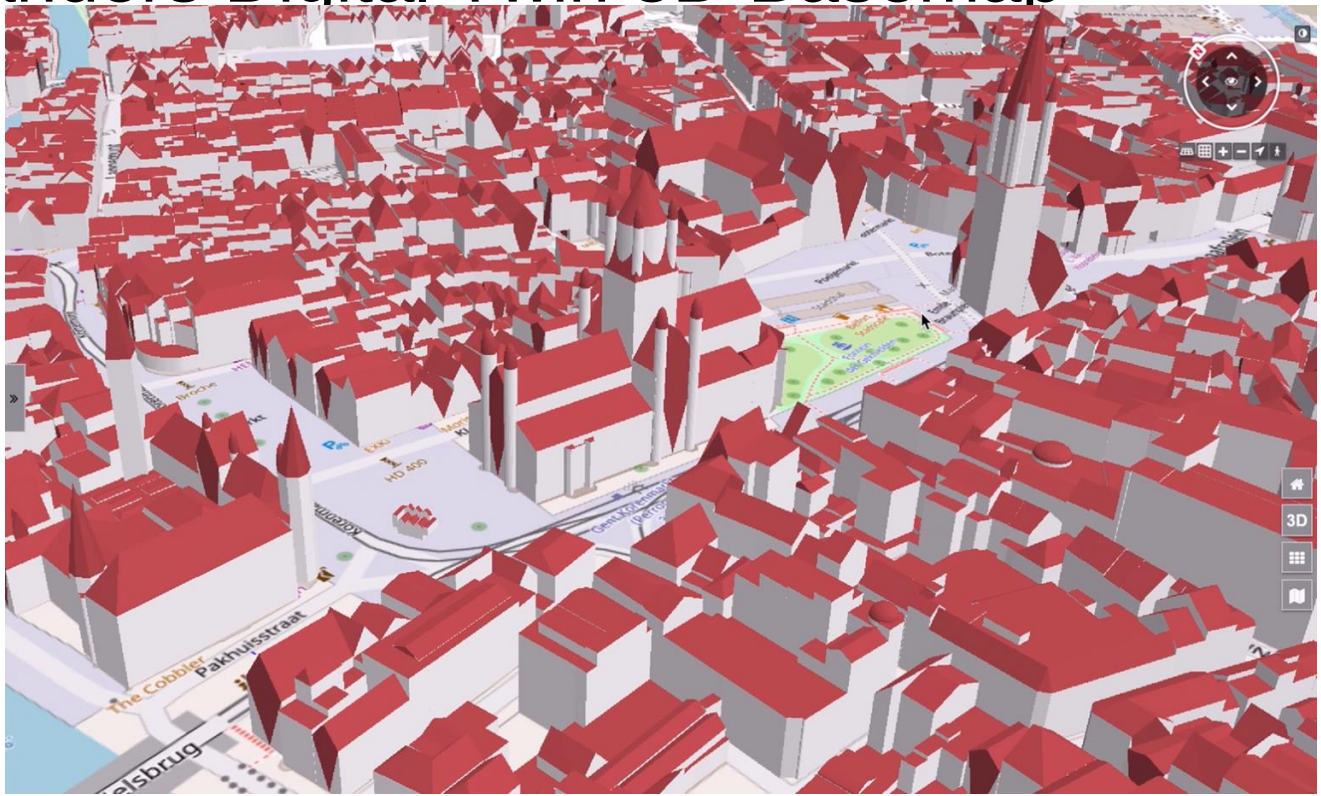


Model – Maquette - Exemplum



BC3200

Flanders Digital Twin 3D Basemap



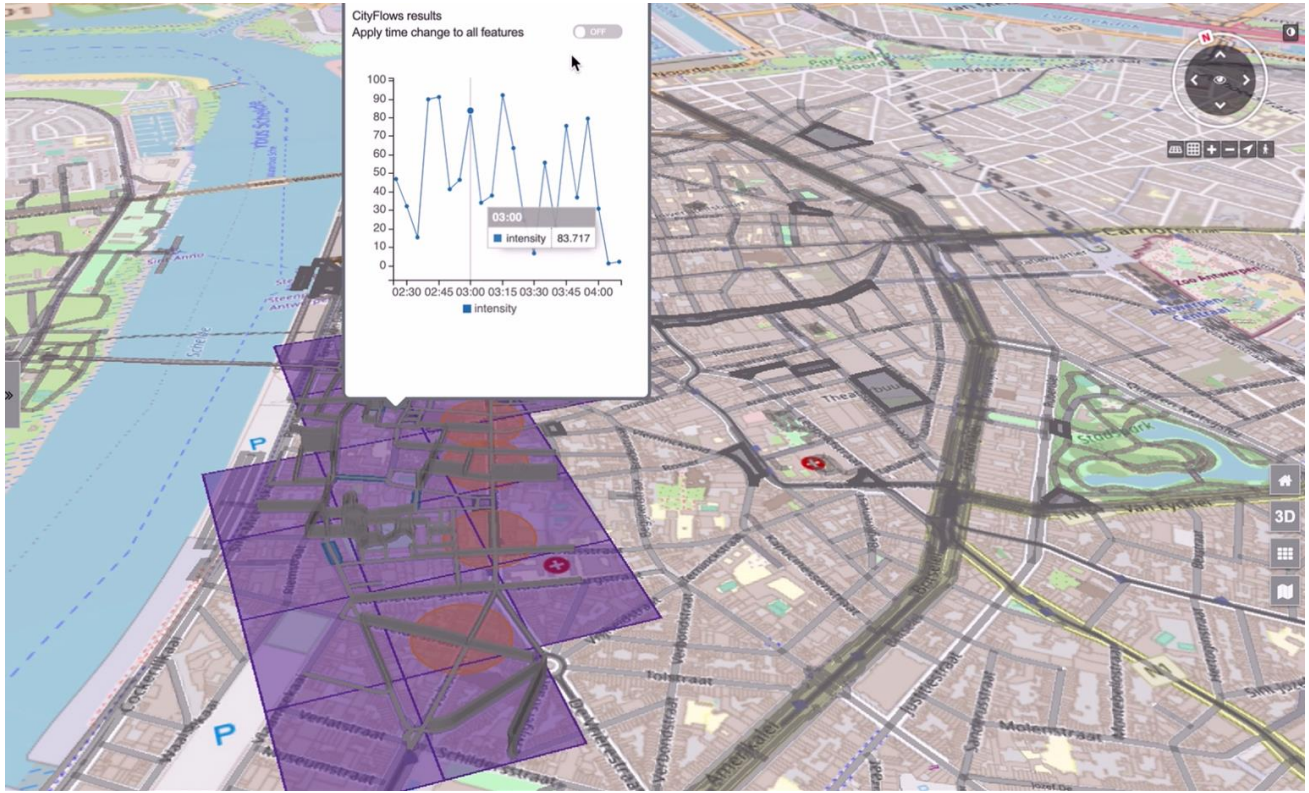
Ferraris 3D map – 1777AC

- Other contractual information

Athens POIs - bus stops, fountains, ...

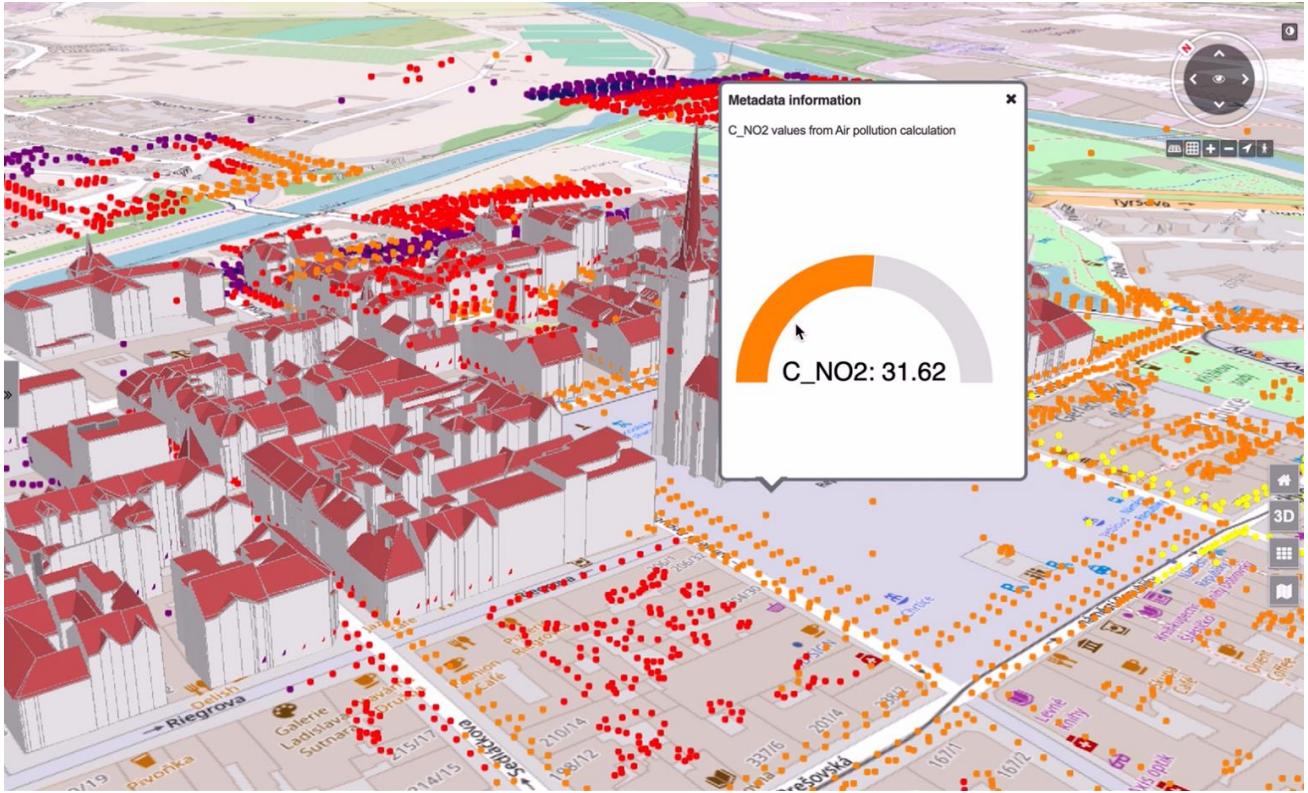
Flanders Digital Twin Basemap

Antwerp sensor locations + values

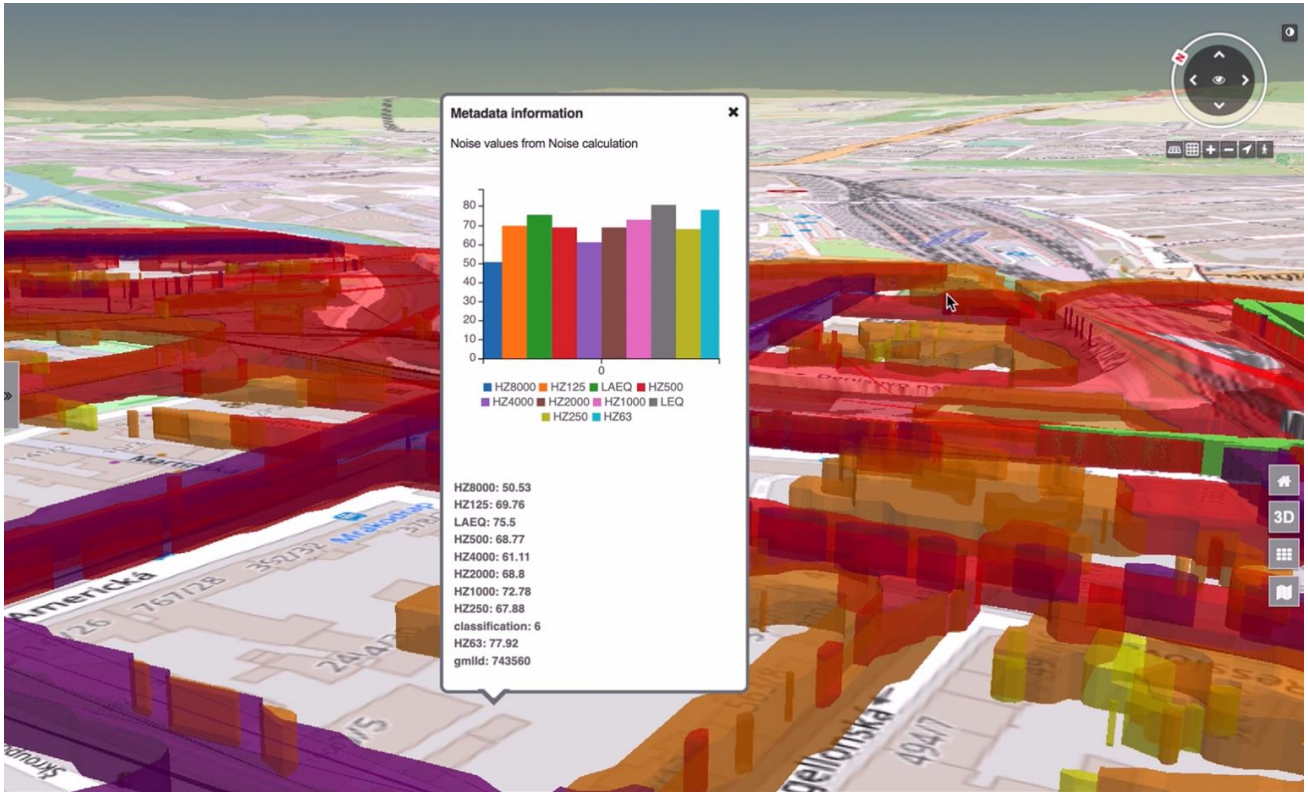


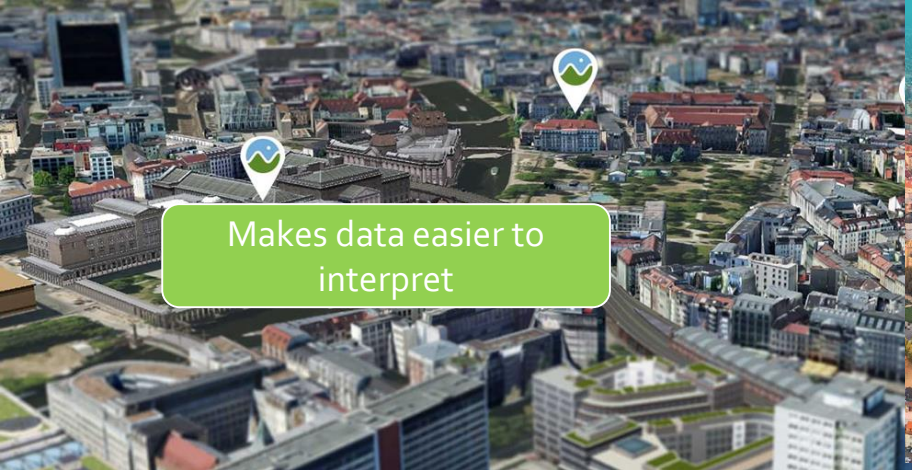
Pilsen traffic density

Pilsen air quality



Pilsen noise model





Makes data easier to interpret

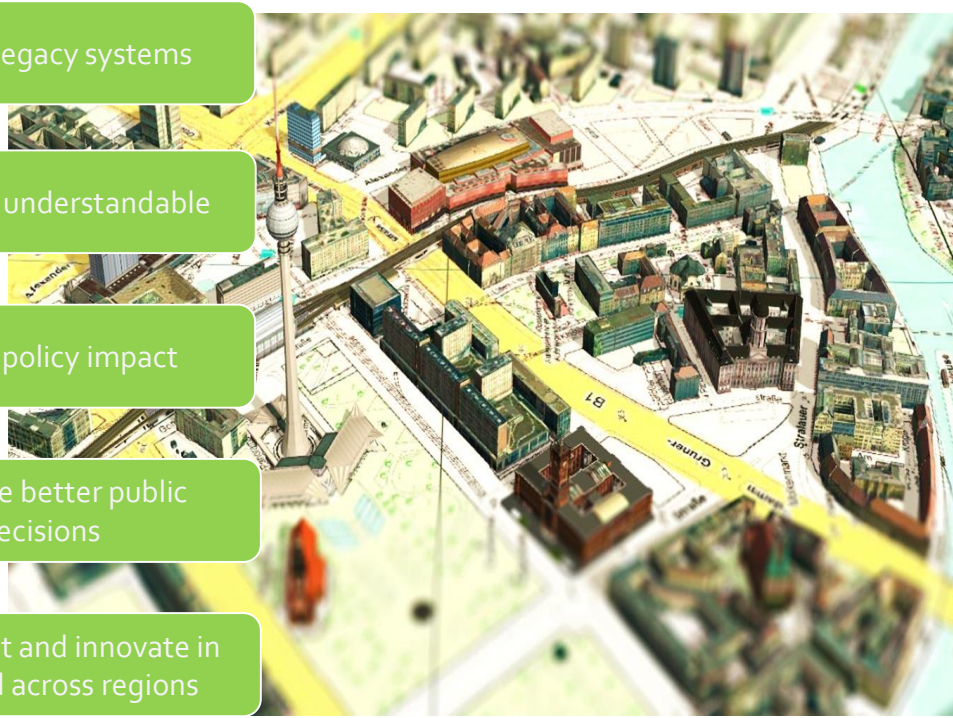
Provides integrated view of the city

How to apply the Digital Twin concept on a today Smart City?...

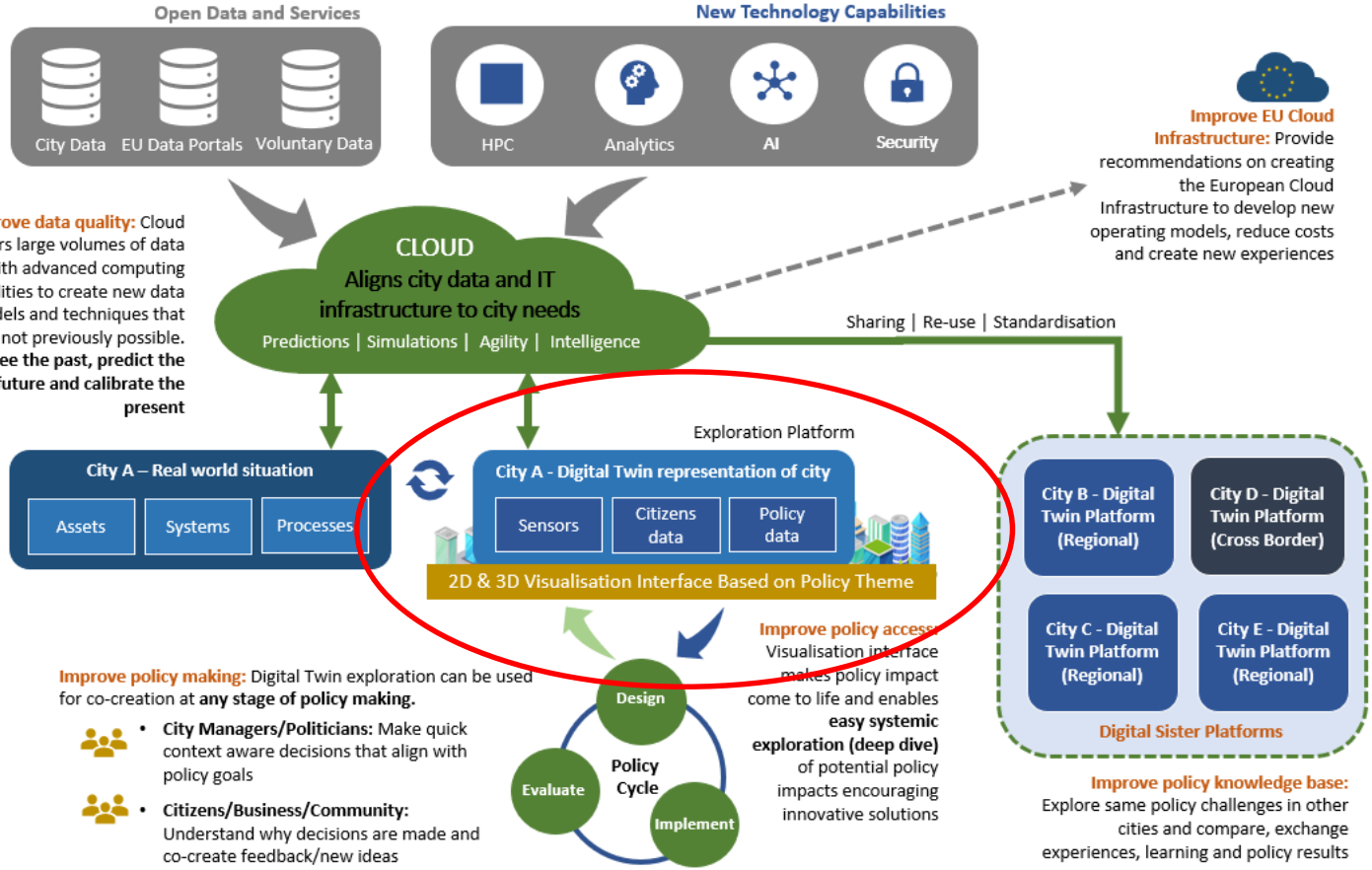
Facilitates data driven decision making

...to bring entrepreneurial thinking, agile processes and open innovation to Government decision making

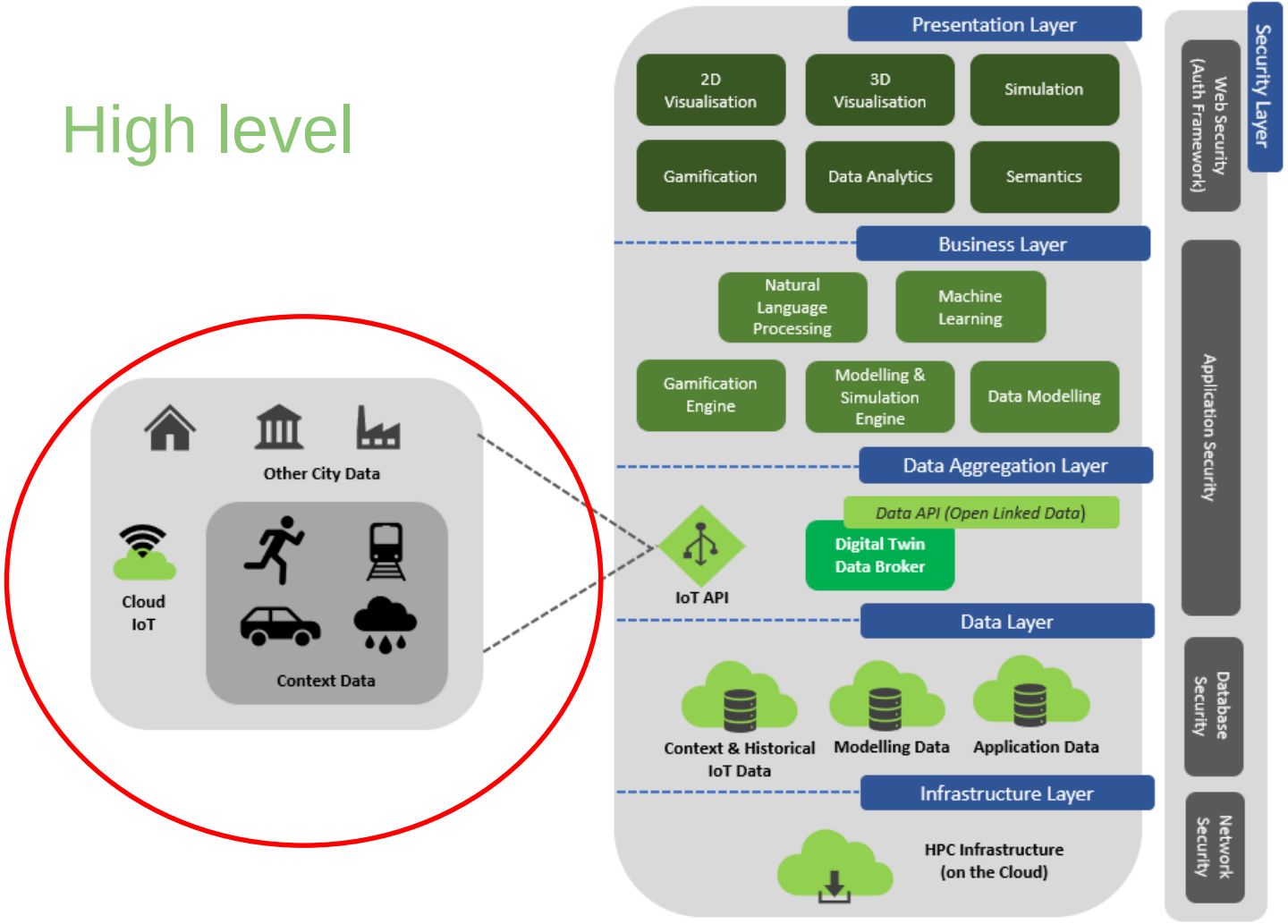
- Connect legacy systems
- Make data understandable
- Explore policy impact
- Influence better public decisions
- Experiment and innovate in cities and across regions



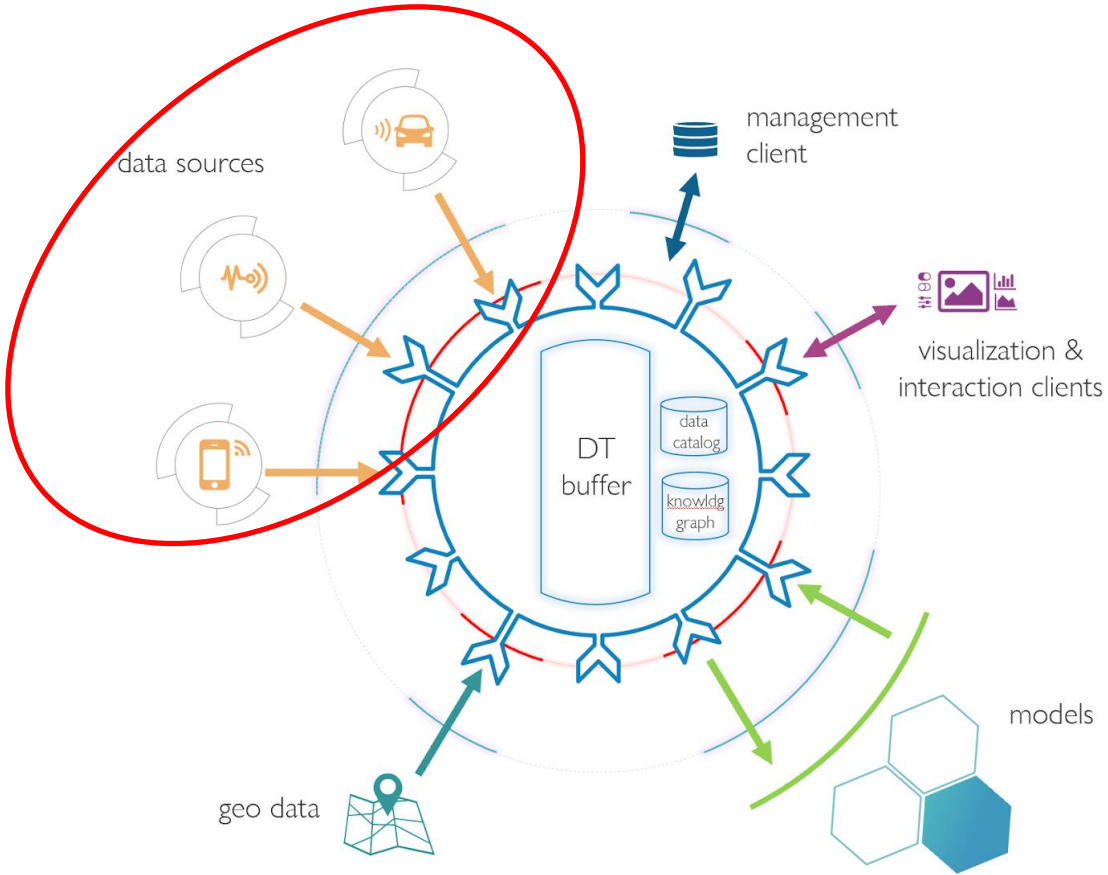
DUET high level Concept



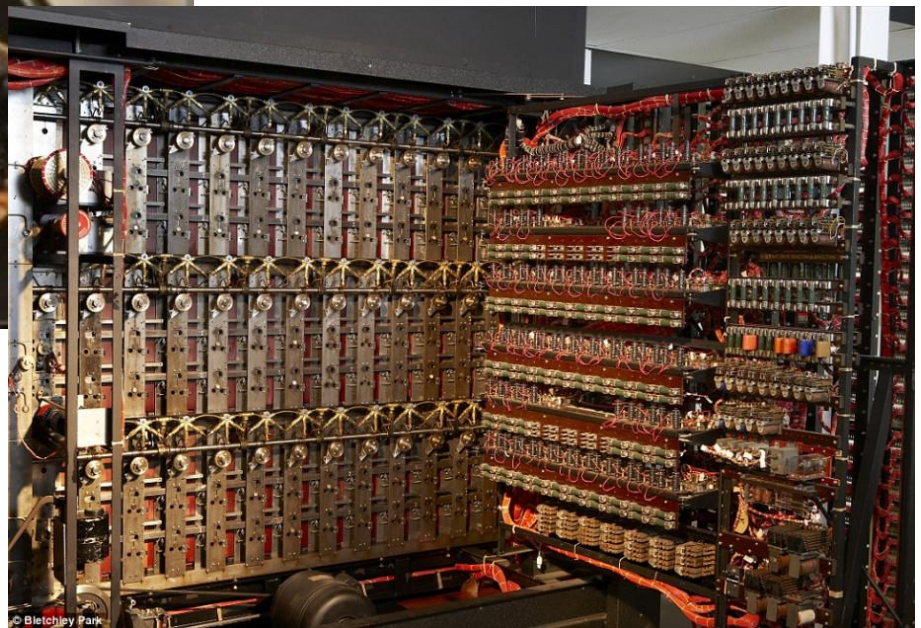
High level


Presentation Layer
2D Visualisation
3D Visualisation
Simulation
Gamification
Data Analytics
Semantics
Business Layer
Natural Language Processing
Machine Learning
Gamification Engine
Modelling & Simulation Engine
Data Modelling
Data Aggregation Layer
Data API (Open Linked Data)
Digital Twin Data Broker
IoT API
Data Layer
Context & Historical IoT Data
Modelling Data
Application Data
Infrastructure Layer
HPC Infrastructure (on the Cloud)
Security Layer
Web Security (Auth Framework)
Application Security
Database Security
Network Security
Other City Data
Cloud IoT
Context Data

T-Cell design



Definition of AI?



All about information: what go's in and what comes out…

Conclusion

EUROPEAN
COMMISSION

108 pages

Brussels, 21.4.2021
COM(2021) 206 final

2021/0106 (COD)

REGULATIONS

88 pages

REGULATION (EU) 2016/679 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

of 27 April 2016

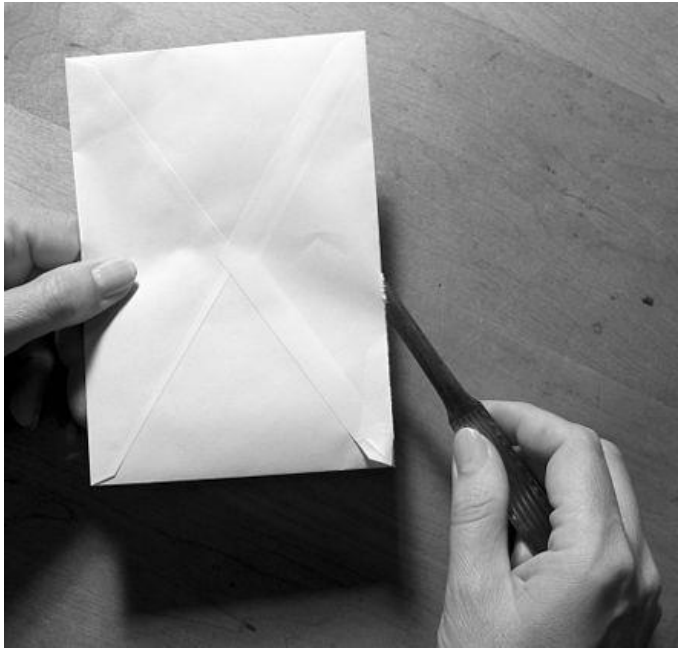
on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation)

(Text with EEA relevance)

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty on the Functioning of the European Union, and in particular Article 16 thereof,

Having regard to the proposal from the European Commission,



”Someone opening a letter before it has been delivered, commits a crime”

- The **secrecy of correspondence** (German: *Briefg eheimnis*, French: *secret de la correspondance*) or literally translated as **secrecy of letters**, is a fundamental legal principle enshrined in the constitutions of several European countries

(Wikipedia)

DIGITAL URBAN EUROPEAN TWINS

Home About Blog Flanders Twin Athens Twin Pilsen Twin Digital twin Media

DUET

Digital Urban European City Twins

Pilots: Flanders, Athens and Pilsen

Role AIV: Consortium coordinator + Pilot

Project started: Dec 2019 - 36 Months

https://www.digitalurbantwins.com/