EUROPEAN BIG DATA VALUE FORUM

Mobility

Data sharing perspectives for digital twins in mobility and logistics

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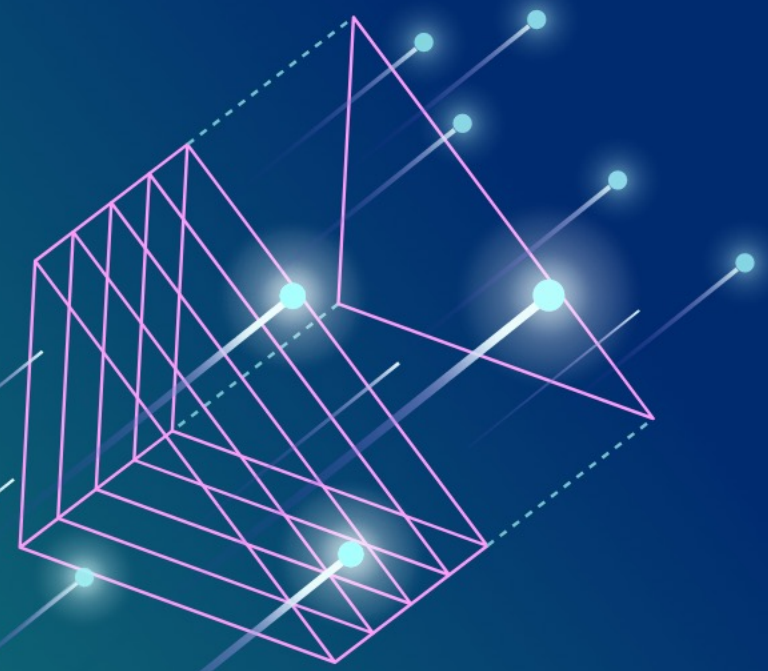
Session: Unlocking a data-driven mobility in Europe
October 26, 2023: 10:15 - 11:45



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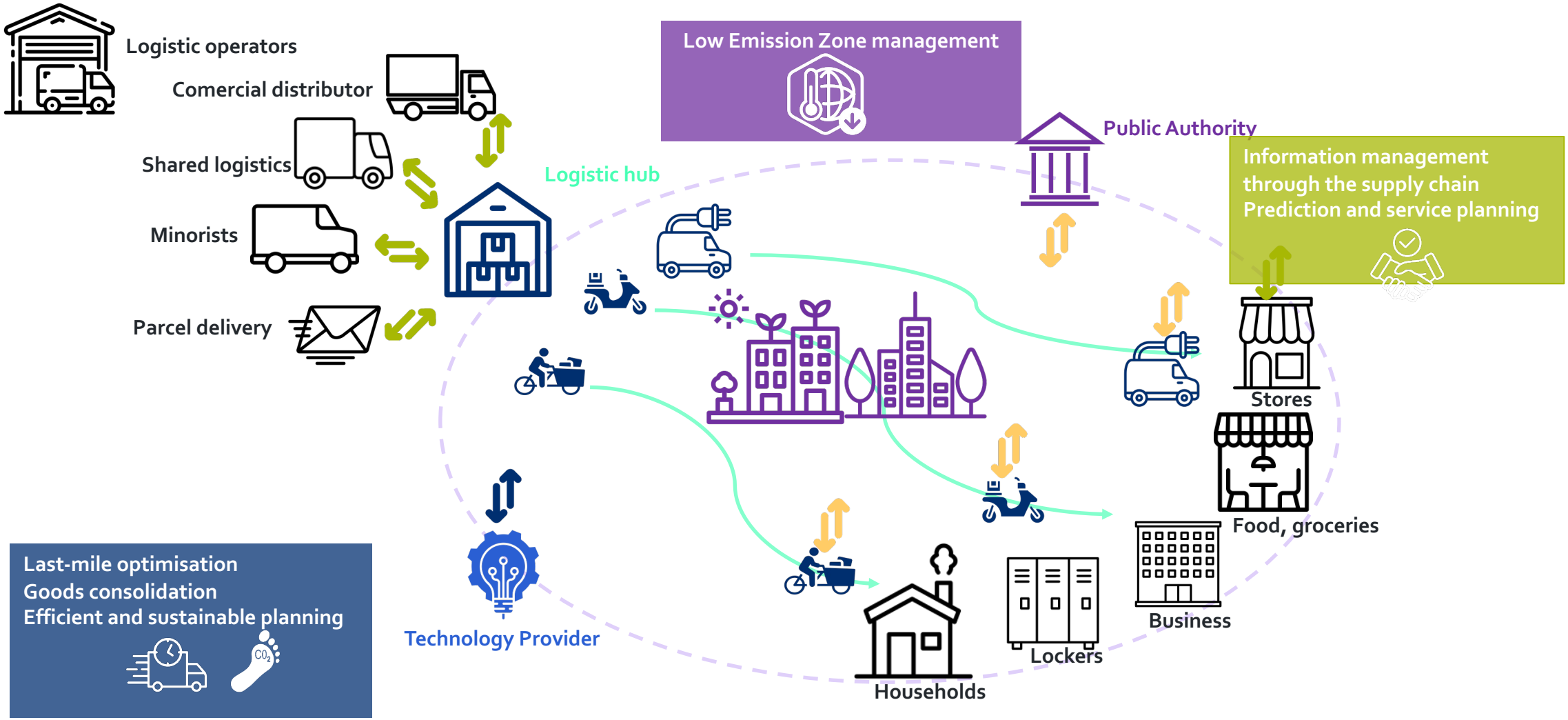
Data Sharing in Mobility and Logistics

- 400 data sharing initiatives accross Europe - *source: PrepDSpace4Mobility project*
- What is shared?
  - Not much, in reality, specially in logistics – last mile delivery
  - Reluctance, undetermined benefits
- Legislation
- Efforts towards the implementation and usage of Data Spaces
- Involved stakeholders
  - Mobility and logistic as a whole. Avoid silos. Shared used of the public space.

Example: idealistic data sharing in logistics

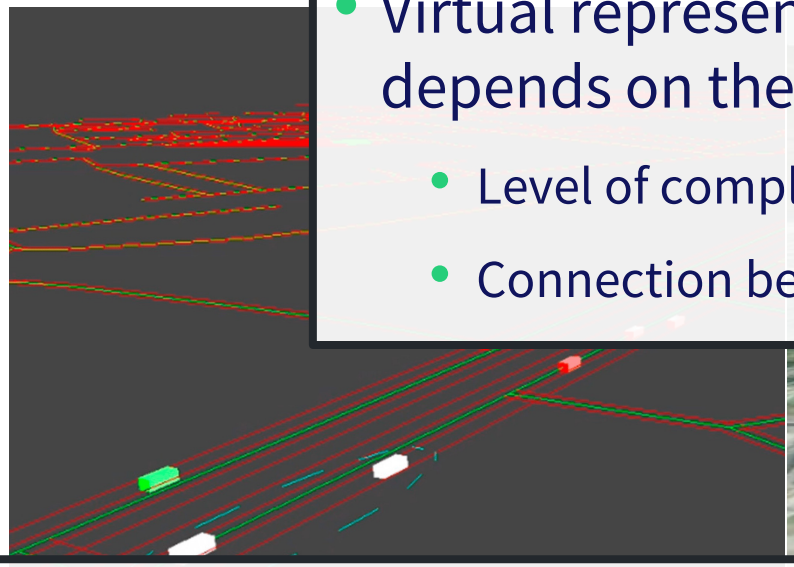


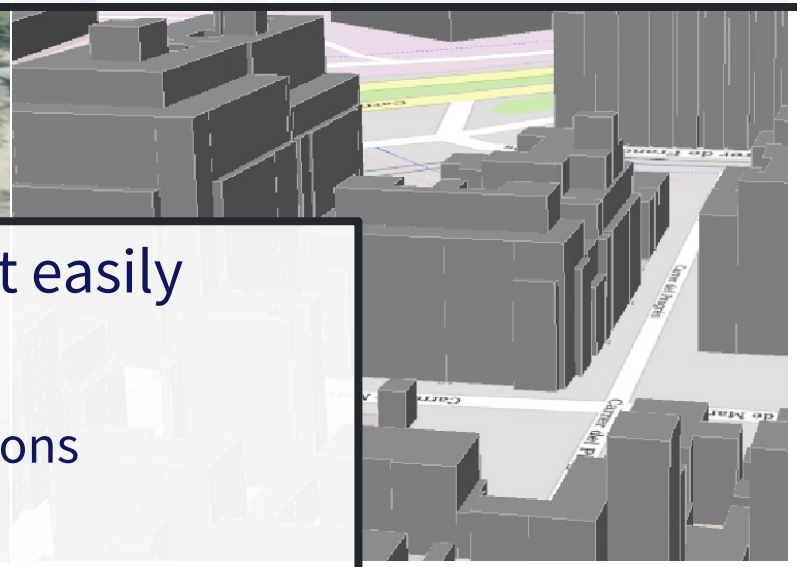
Context of data

- When sharing data…
  - where was it collected?
  - under which conditions?
- Meta-data?
  - Do we share the digital representation of the infrastructure (roads, sidewalks, logistic hub, curb,..)?
  - Reliable, interoperable and up-to-date reference systems

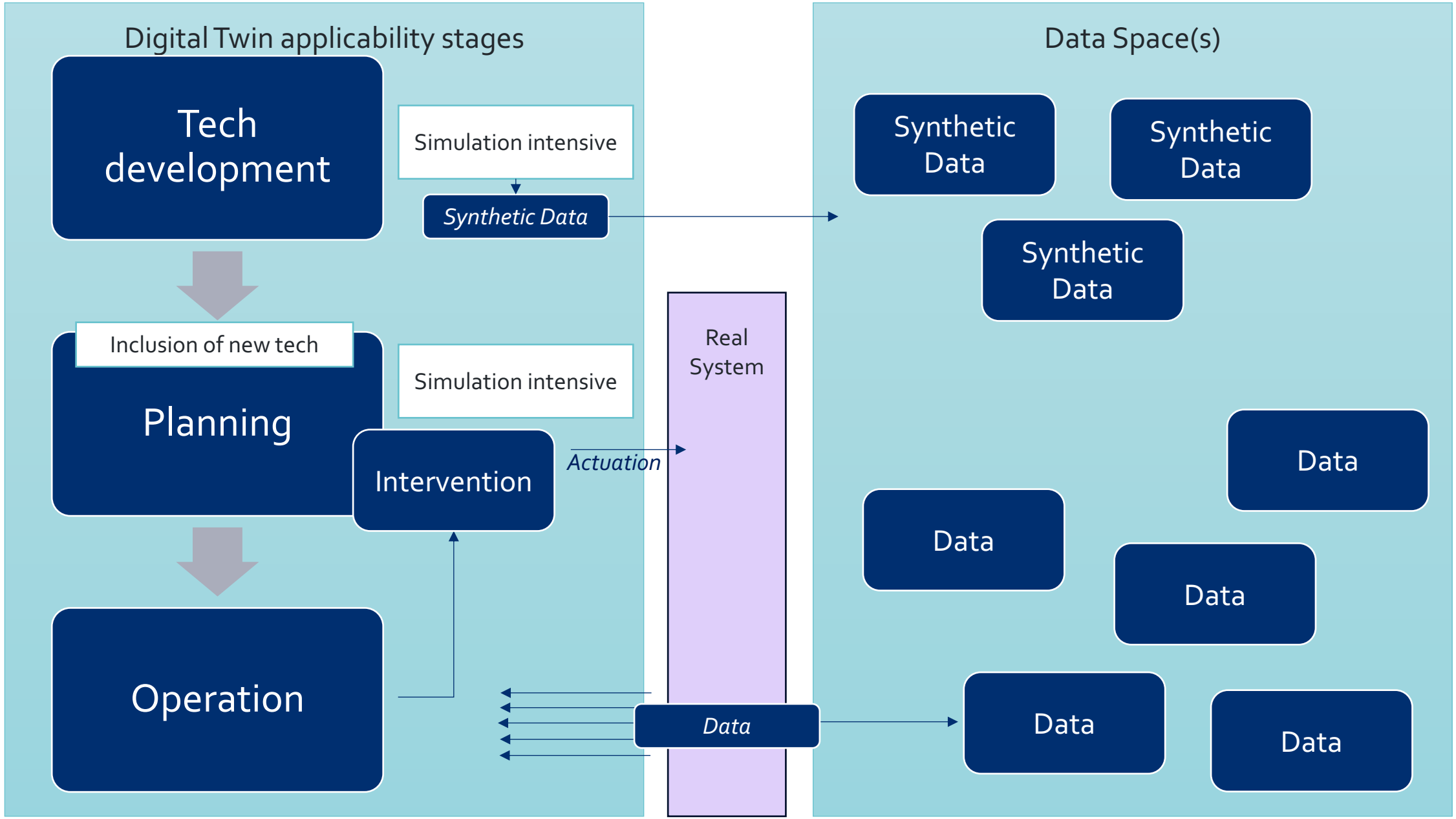
Digital twins

- Virtual representation of a real asset or system, as a simplified version, depends on the purpose
  - Level of complexity
  - Connection between real and virtual

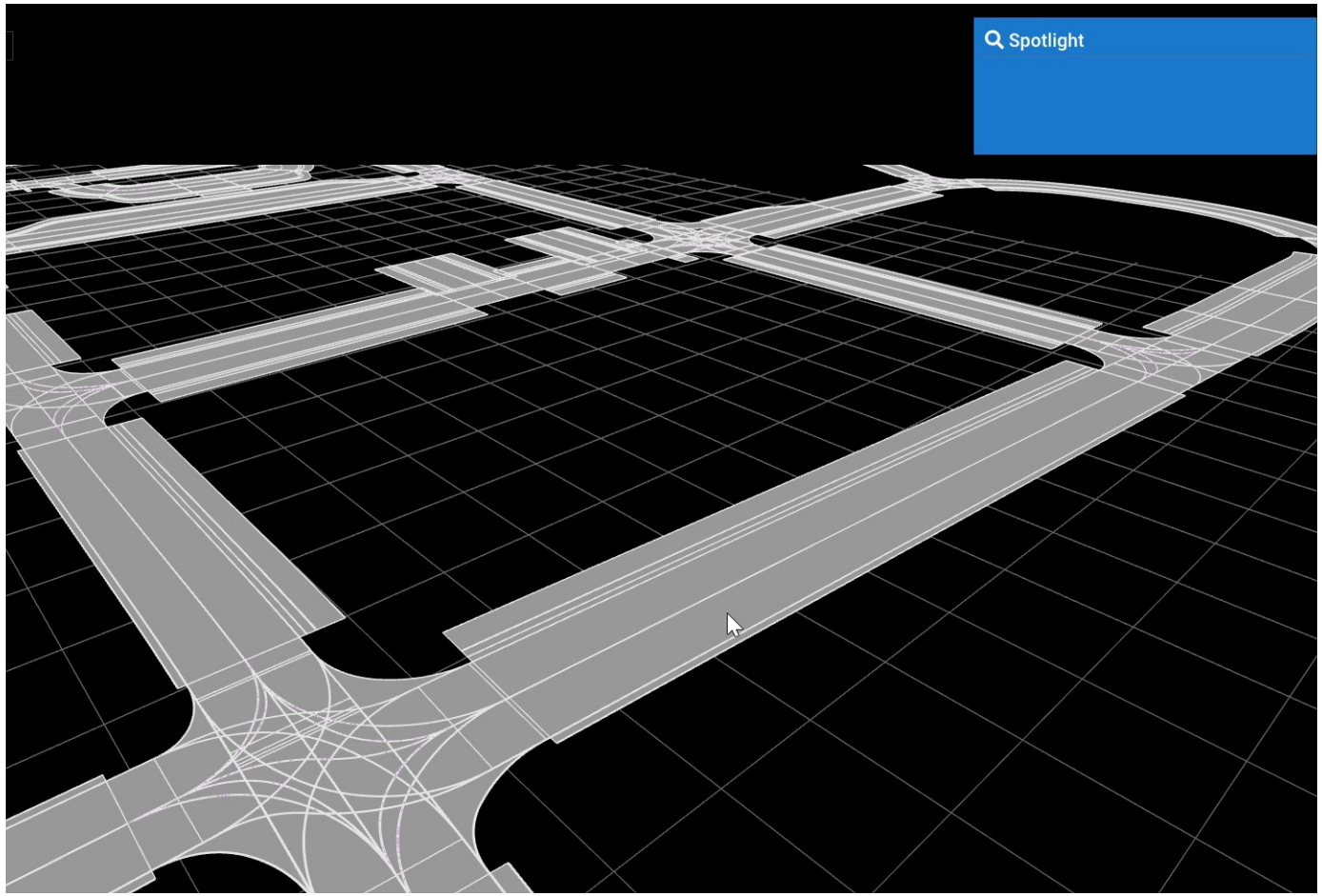




- Provide support for simulations and creation of situations not easily observed in reality (including undesired situations)
  - Train and test AI systems to be able to work under not known conditions
  - Usage of models complement collected data


Digital Twin applicability stages
Tech development
Simulation intensive
Synthetic Data
Inclusion of new tech
Planning
Simulation intensive
Intervention
Actuation
Operation
Real System
Data
Data Space(s)
Synthetic Data
Synthetic Data
Synthetic Data
Data
Data
Data
Data
Data
Data

Infrastructure representation in digital twins



https://odrviewer.io

- Heterogeneity: CityGML, OpenDrive, HD Maps, 3D models, BIM…
- Creating and maintaining these “maps” is costly
- Value of the infrastructure digitization and sharing

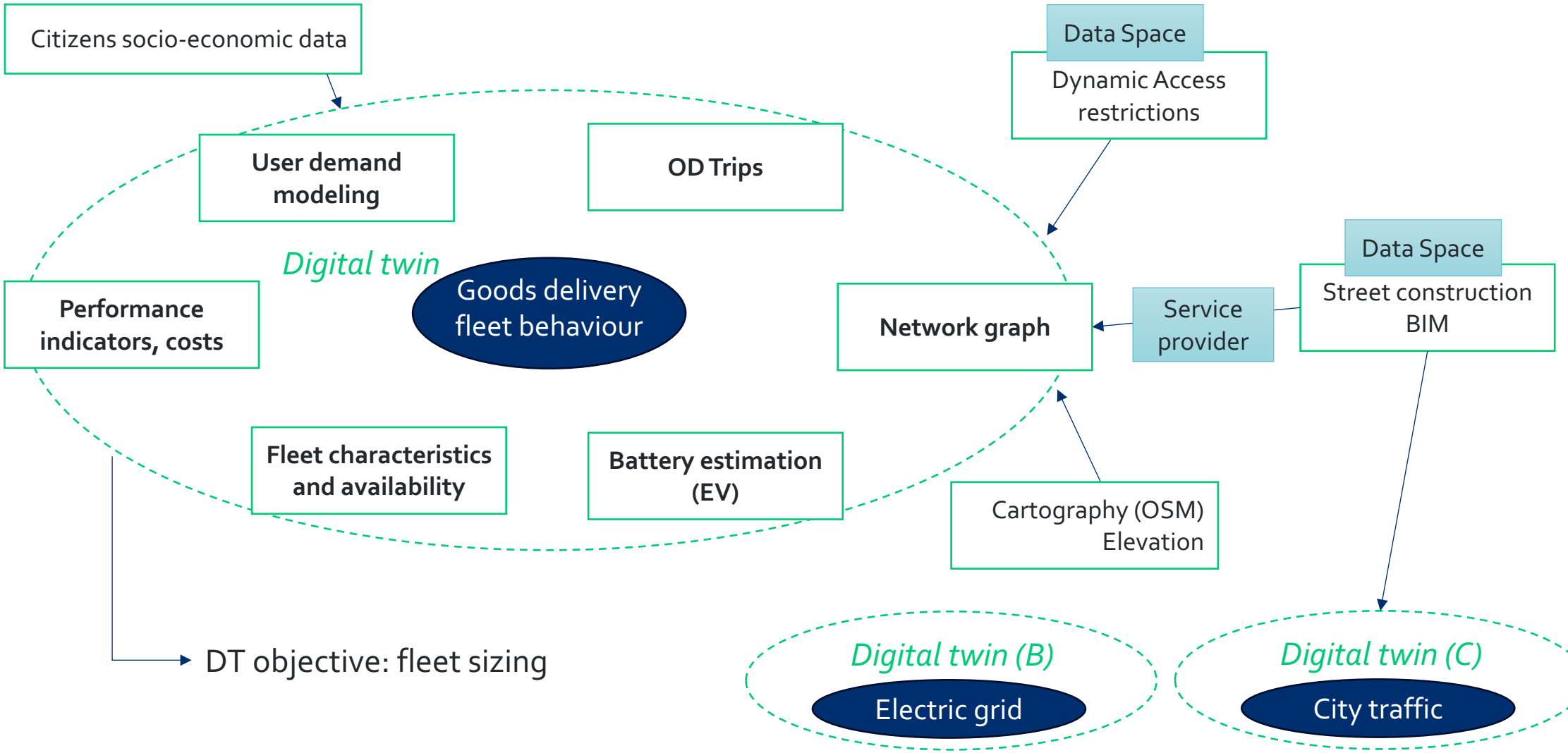
- The city layout may evolve…

Sharing Digital Urban Regulation

- What about digitalized regulation sharing?

- Dynamic Access Regulations, Low Emission Zones, Time varying, or according to the context:
  - Environmental situation, traffic situation, priorities
  - Surface parking markings, use of the curb

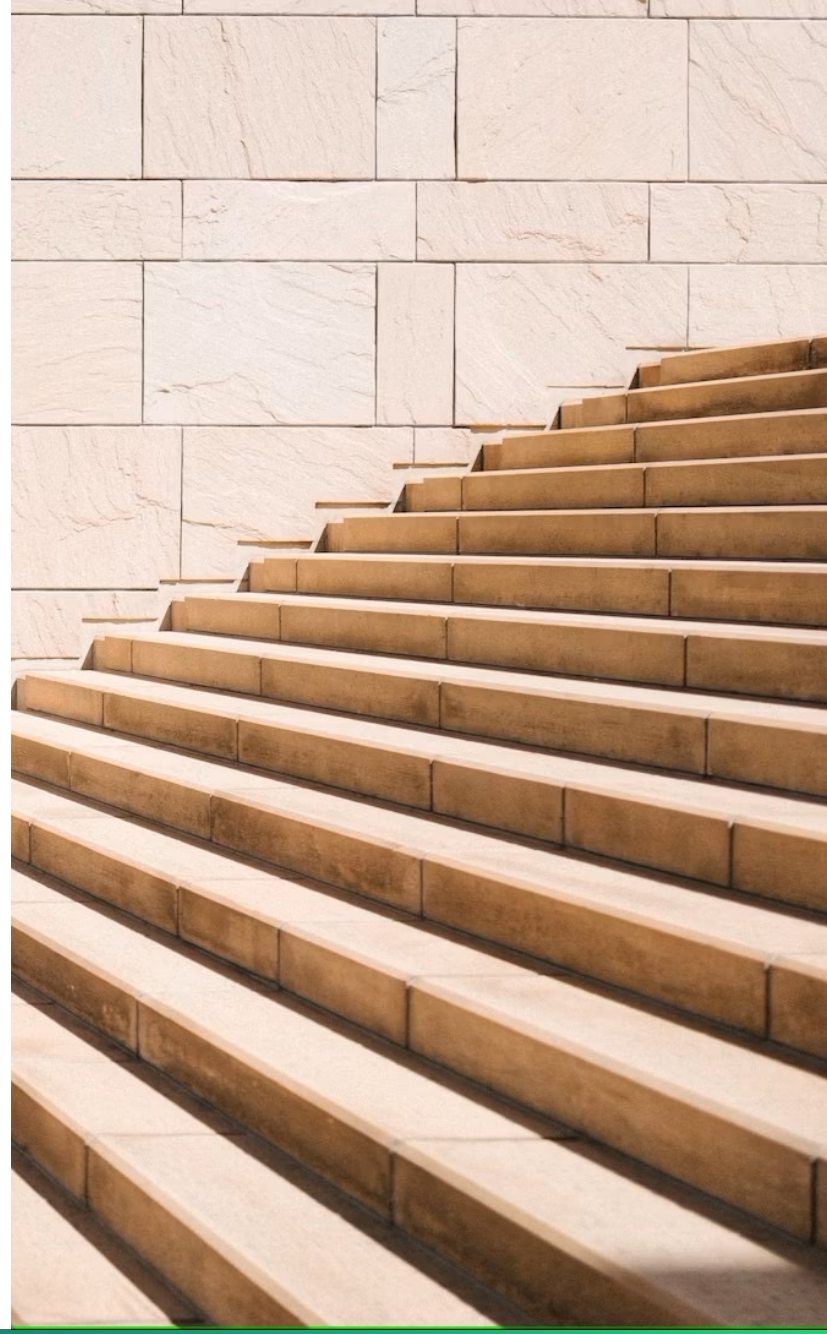
Example: Goods delivery



- Towards sharing more than data points in time or space
- Share digital twins, partly or as a whole
- Value-added context to data

Challenges

- Boundaries
- Scale
- Real-time
- Evolution and upgrades
- Interoperability



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Thank you!

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