





# CH on the move

## Introducing the prototype digital twin of the Swiss mobility system

### Other Conference Item

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# “CH on the move”

## Introducing the Prototype Digital Twin of the Swiss Mobility System

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# The Digital Twin of the Swiss Mobility System “CH on the move”

1. “CH on the move”
2. Open Digital Twin Platform
3. Open Digital Twin Standard

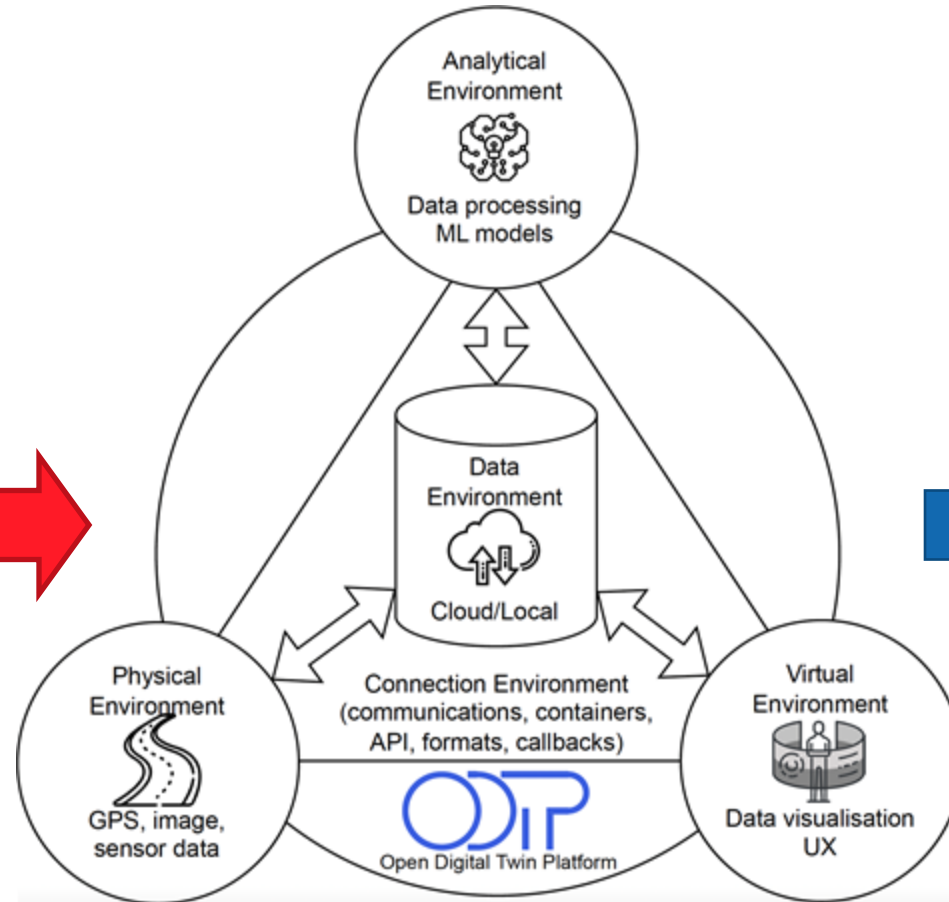


# Outline Digital Twin “CH on the move”

Physical Twin



Switzerland



Digital Twin

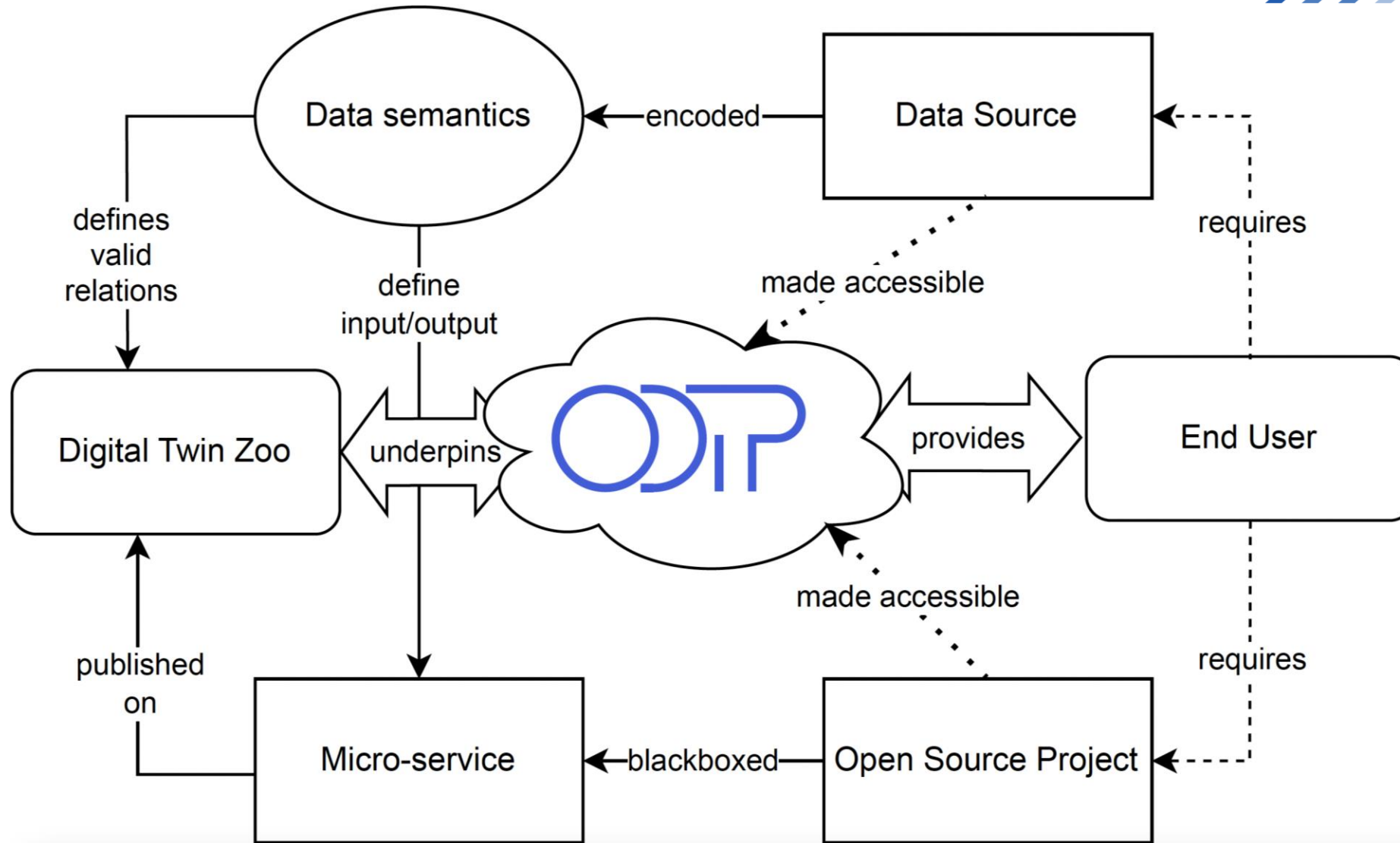


CH on the move

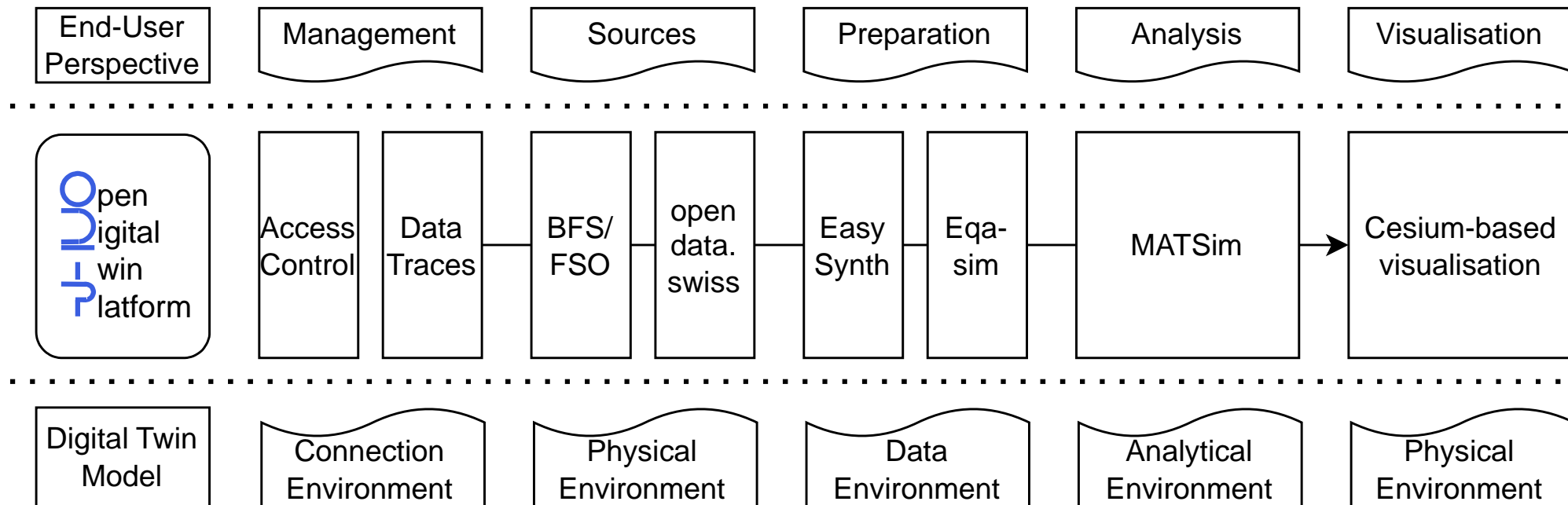
- Part of the National Strategy and Action Plan for Open Research Data
  - FAIR principles
  - Data should be
    - as open as possible
    - respecting disciplinary diversity
    - internationally networked
    - sustainably financed
  - Strategic development of infrastructures and services
  - Coordinated governance while safeguarding autonomy
  - development of systemic, supportive framework conditions



# End user perspective on Open Digital Twin Platform (ODTP)



## MATSim + eqasim example



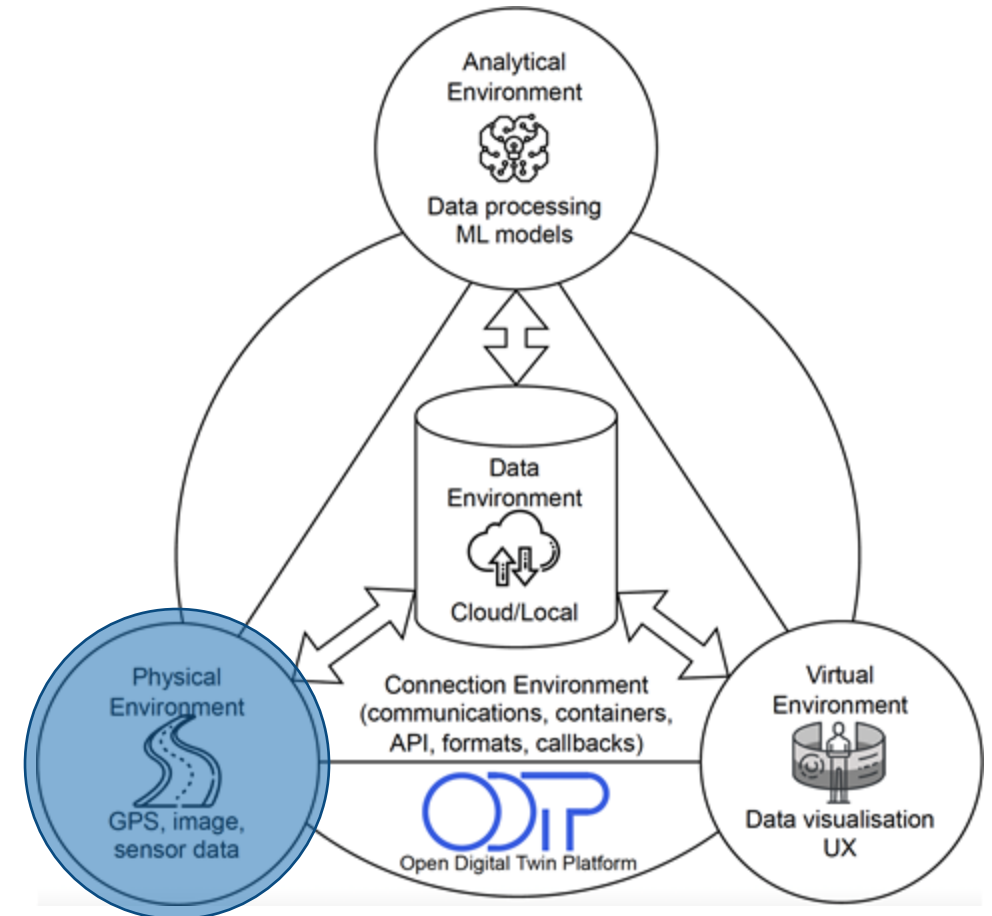


# A closer look at Open Digital Twin Platform (ODTP)



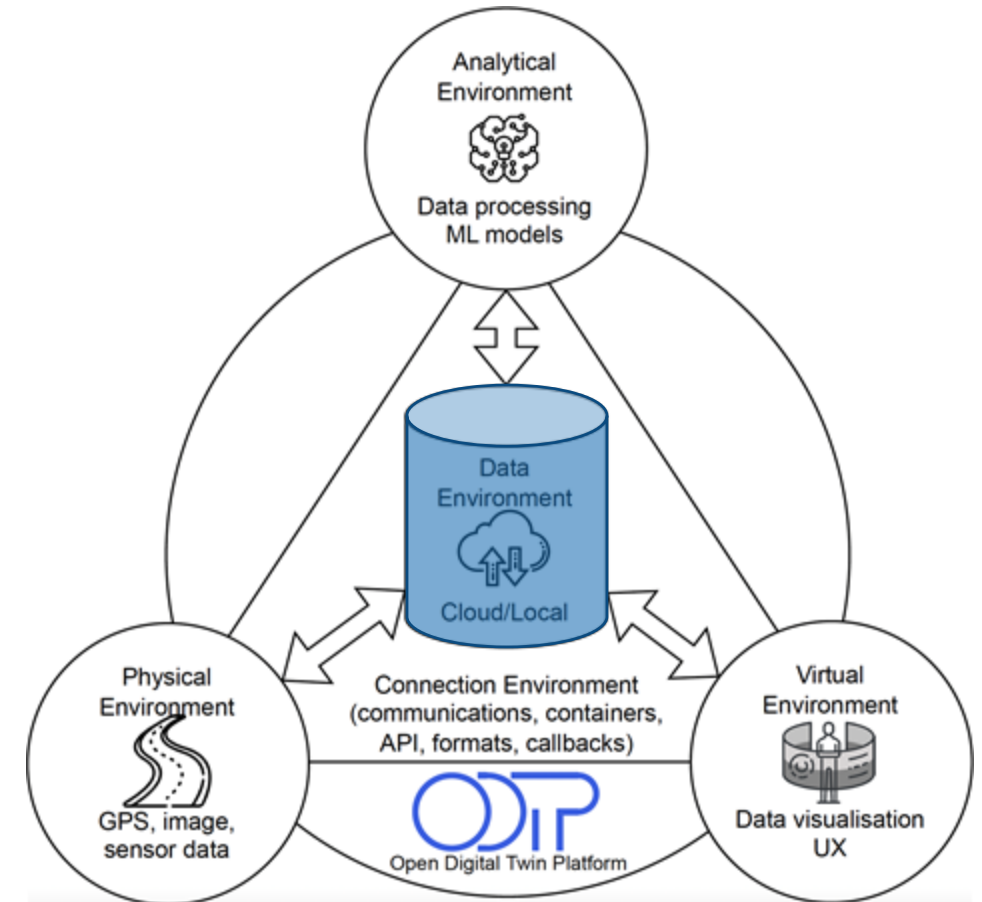
## Focus on Data Acquisition

- Find data sources
- Catalogue data sources
- Version data sources
- Access data sources
- Protect data sources



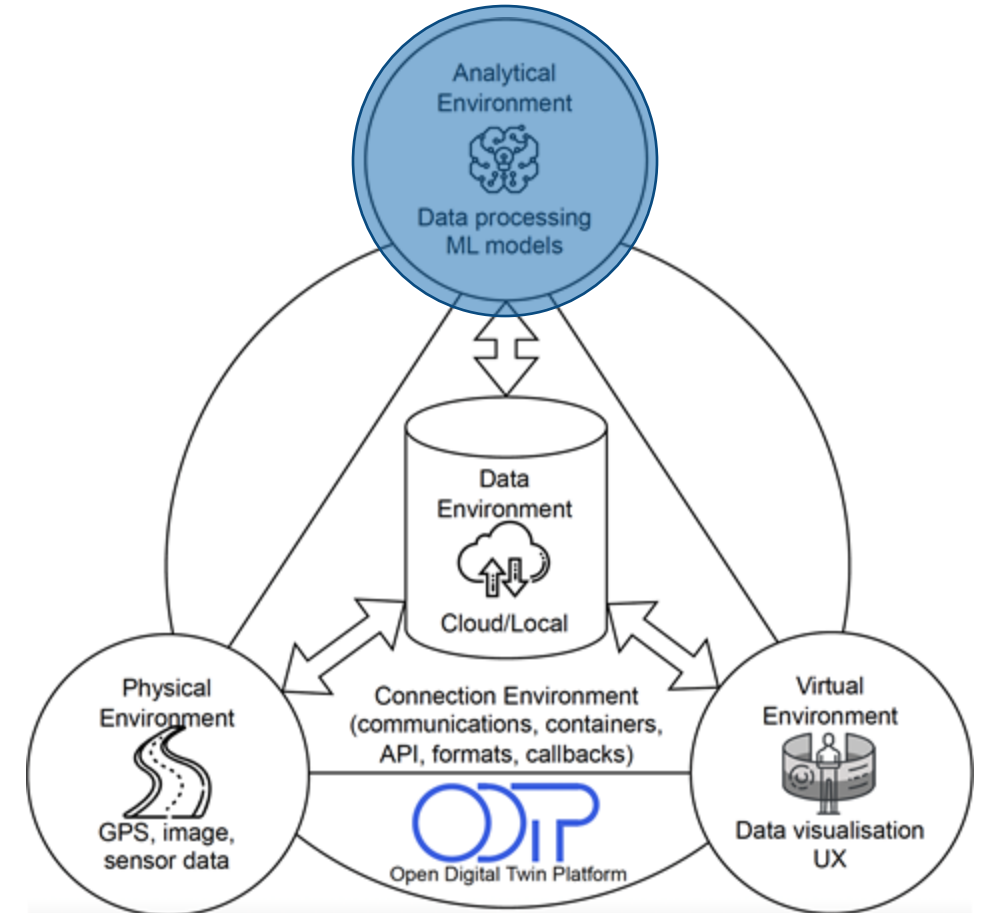
## Focus on Data Semantics

- Classify data
- Relate data
- Equate data



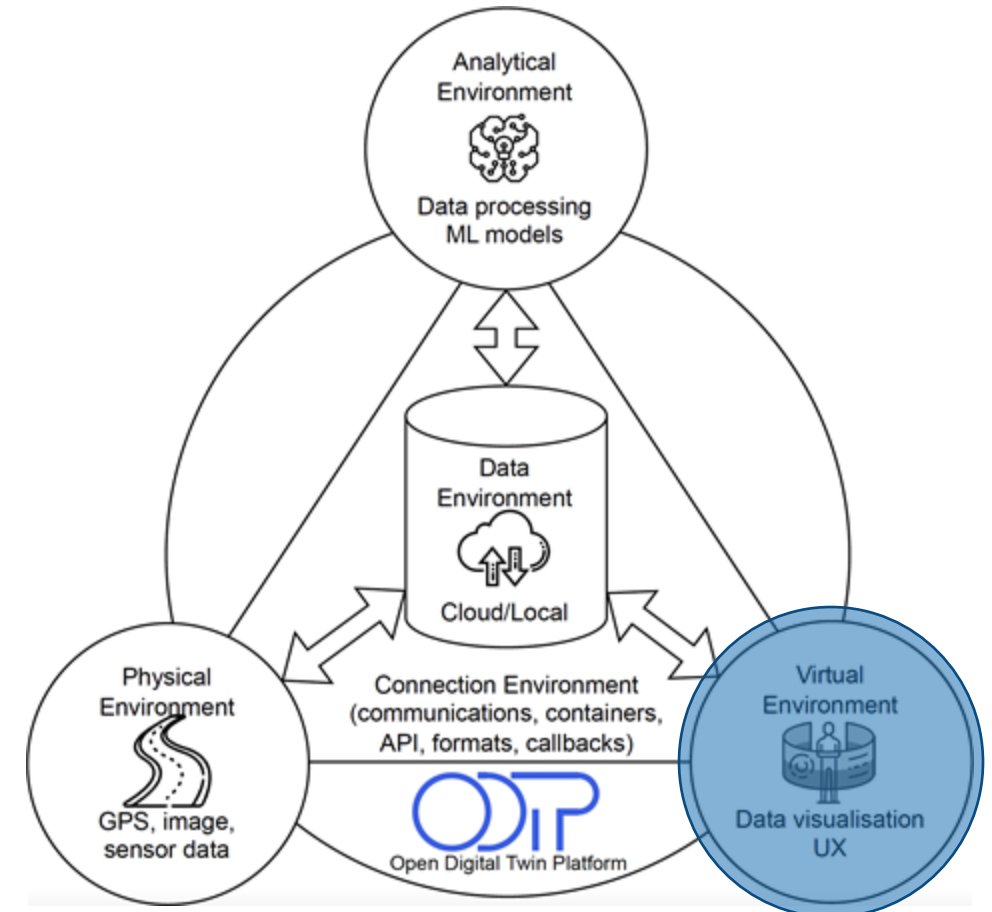
## Focus on Data Analysis

- Wrangling
- Simulations
- Models
- ML/AI



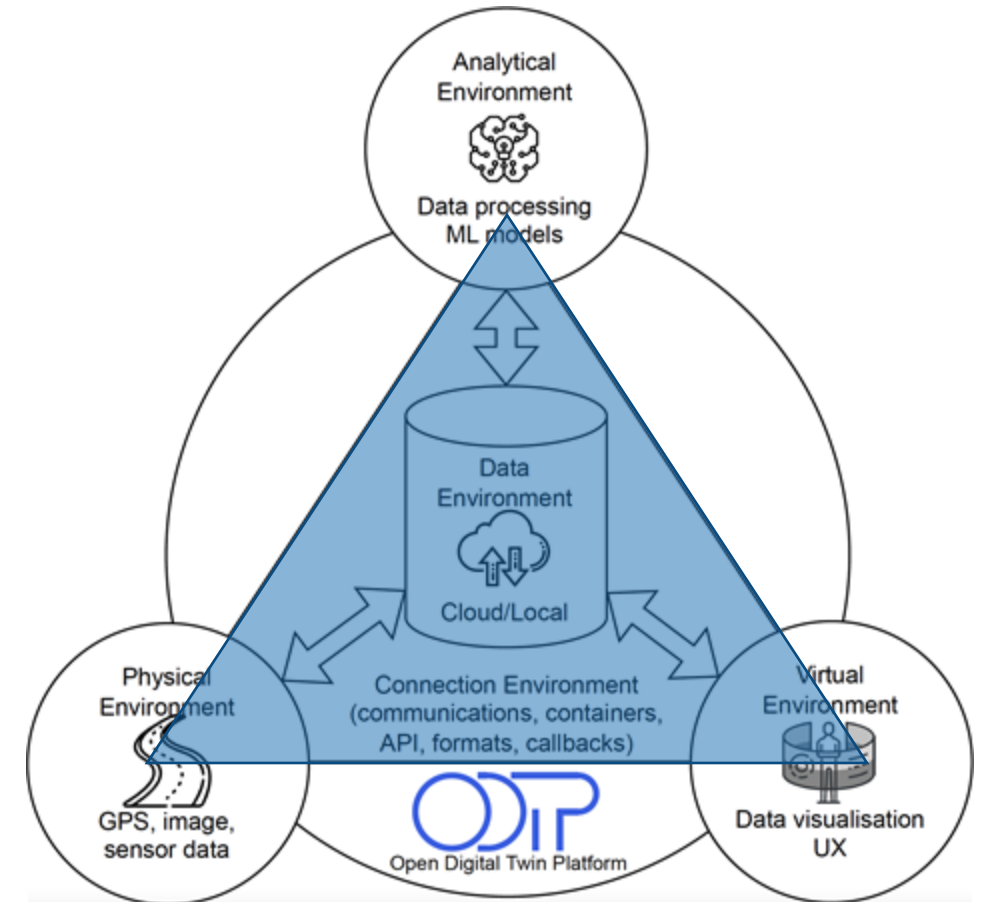
## Focus on Data Visualisation

- Raw data types
  - Trace, Surface, Volume
- Descriptive statistics
- Model differences
- Parametrization & Feedback



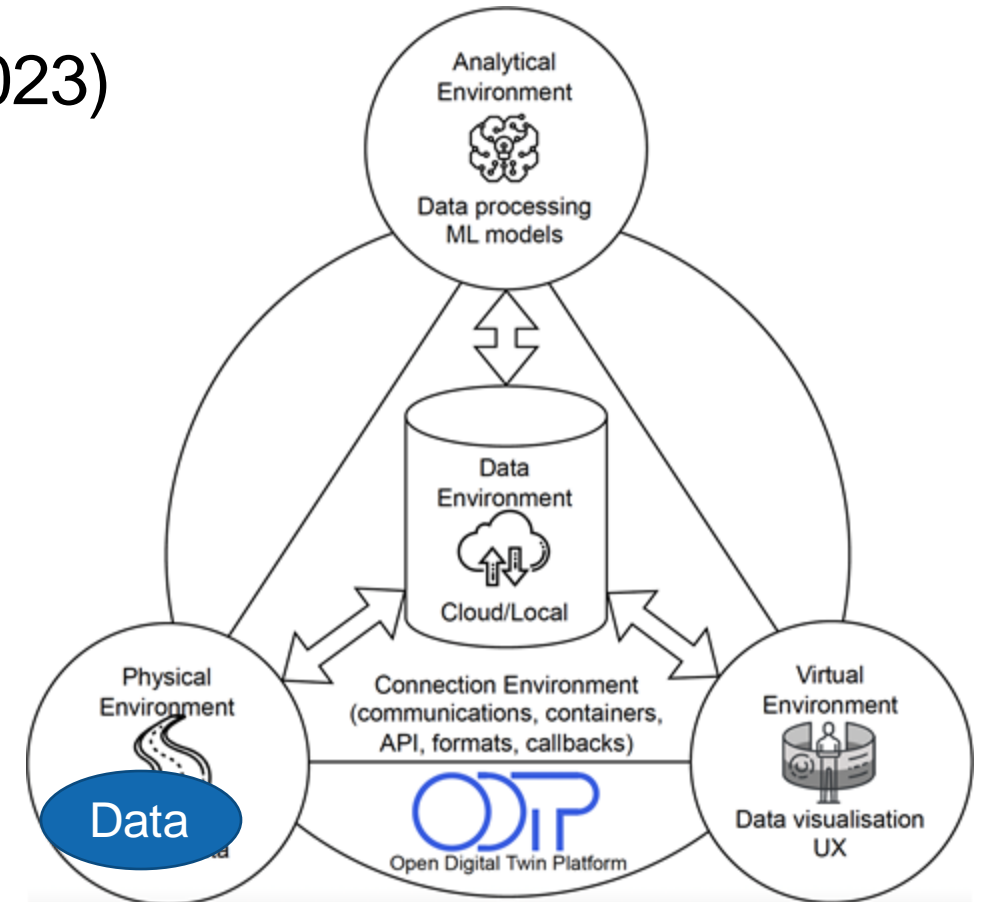
## Focus on Data Management

- Provisioning
- Deployment
- APIs
- Data Traces
- Meta-analysis



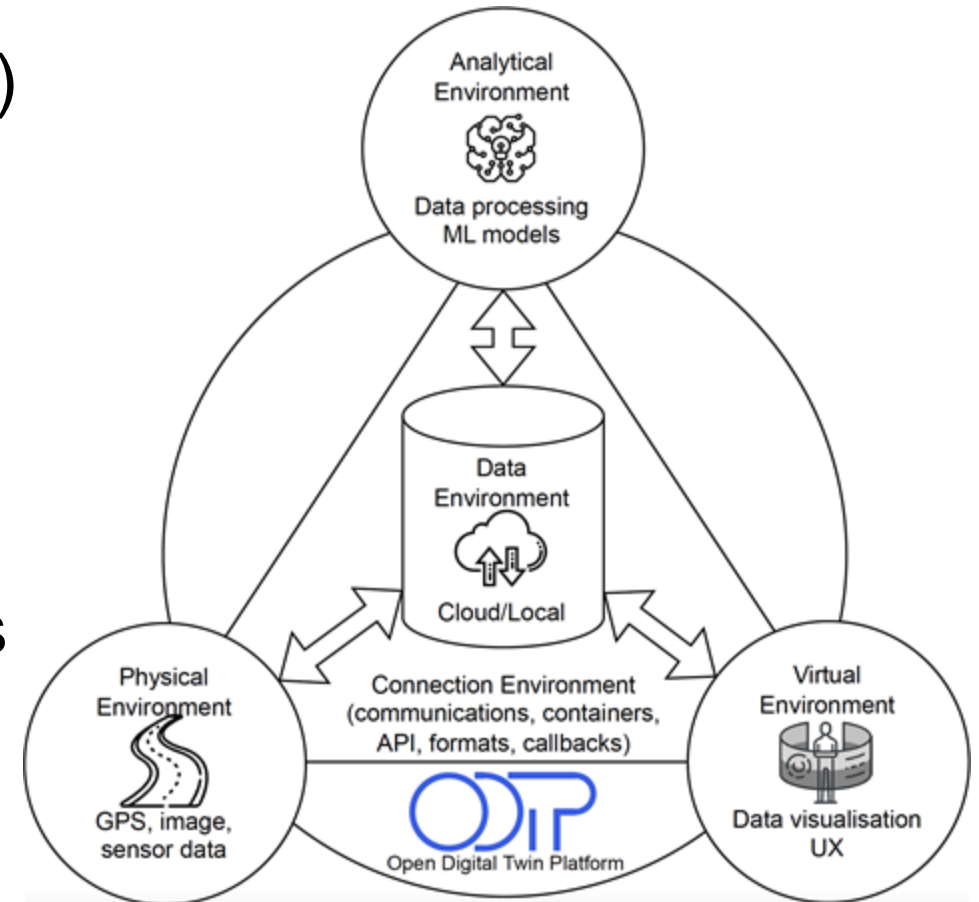
## Digital Twin Traces (Swiss ORD Grant, 2023)

- Well-defined data flow with history
  - Used to “replicate” Digital Twin
- Manipulate parts of traces
  - Enables comparison of DTs
- Long-term: Assess data quality
  - Put uncertainty on data



## Digital Twin Zoo (Swiss ORD Grant, 2023)

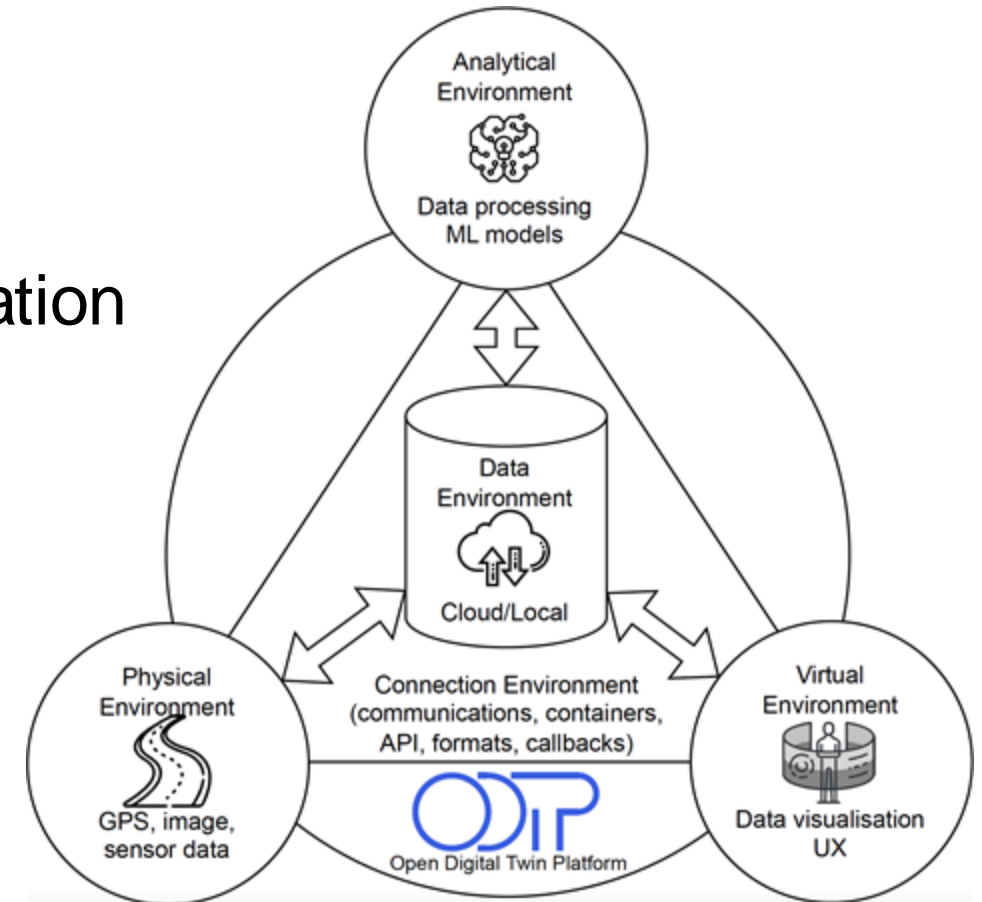
1. Containerise each component
2. Provide well-defined API
3. Web-service hosts zoo of components
4. Able to pick and choose





## Develop Draft (Swiss ORD Grant, 2023)

- Definitions independent of implementation
  - Define Zoo
  - Define Traces
  - Define Components
  - Define APIs
  - Define services
  - Define Data Standards
  - Define Visualisations



# Questions?

