Rail Baltica

Co-funded by
the European Union

Digitalisation and AI in a Greenfield Project

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Innovation & Digital Architecture

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What is Rail Baltica?

870 km greenfield railway infrastructure

1435 mm Double track

Radio-based ERTMS & FRMCS*

Electrified 2x25kV AC

Maximum length of freight trains: 1050m

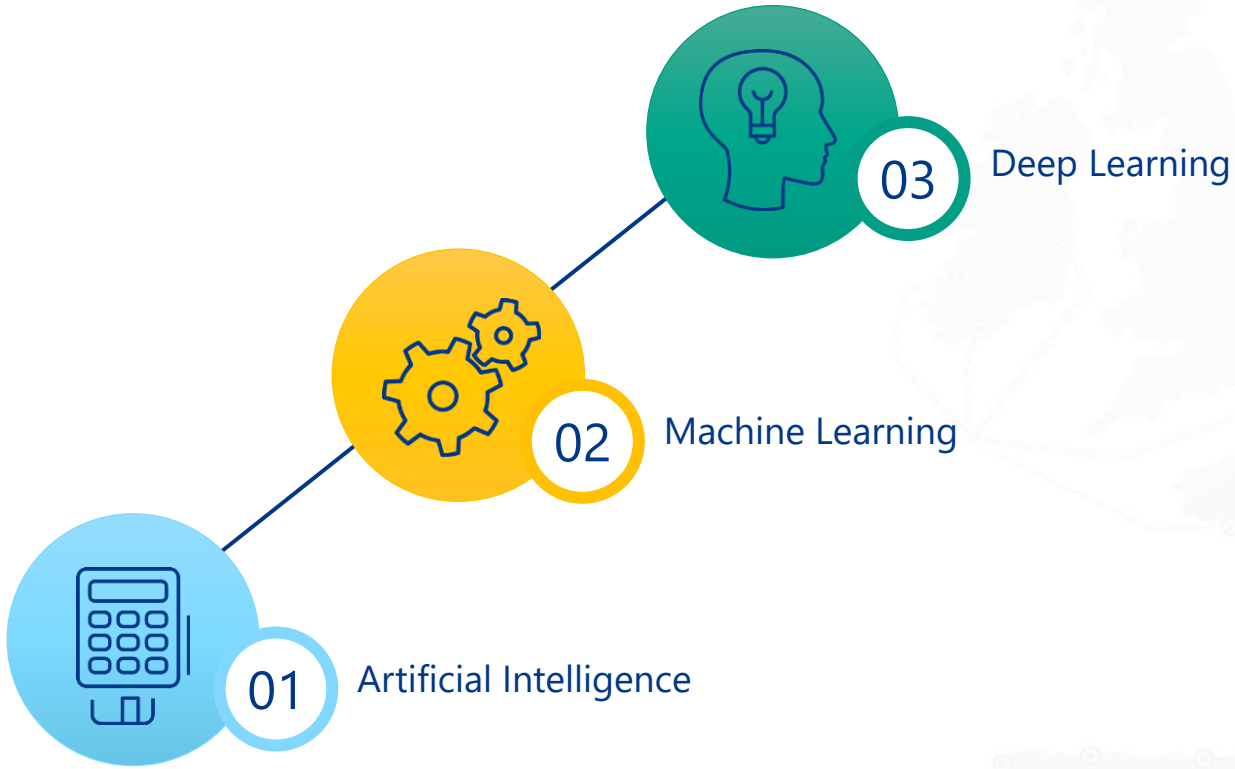
Axle load 25t

Design speed: 249 km/h for passenger trains 120 km/h for freight trains

SE-C (Swedish) loading gauge

Systems and Stakeholder Interfaces

AI and Machine Learning



Application of ML that uses complex algorithms and deep neural nets etc.

Application of AI that enables a system to automatically learn/improve

Ability of a system to imitate intelligent / skilled behaviour

Application Drivers

Deterministic AIs

- Decision Trees
- Expert Systems

Anomaly Detection

Root Cause Analysis

Trend Monitoring

Risk Assessment

Generative AI?

AI/ML in a Greenfield Project

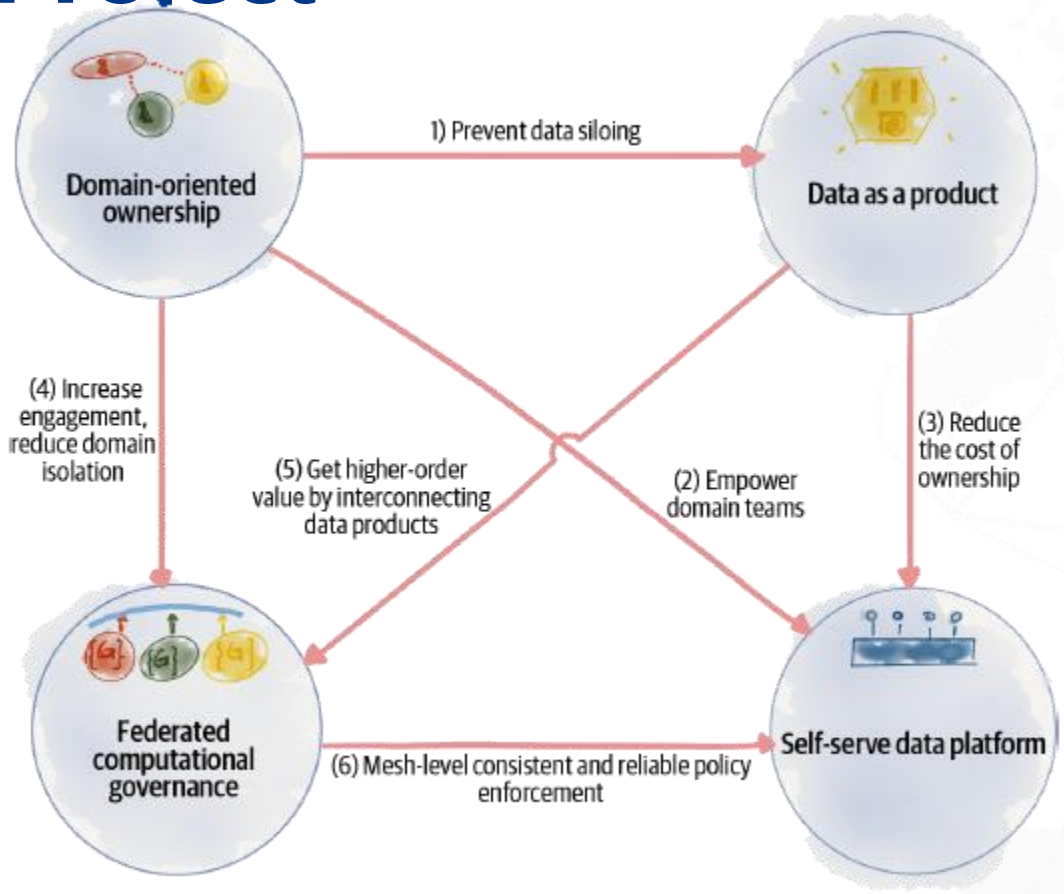


Image from "Data Mesh", by Zhamak Dehghani (O'Reilly, 2022)

System Borders

Data Management

- Centralised or Distributed?
- Correlation?
- Data volumes and storage

Governance: Security and Privacy

Open standards & systems

Questions?