Unlock the Full Potential of Technology Data Management

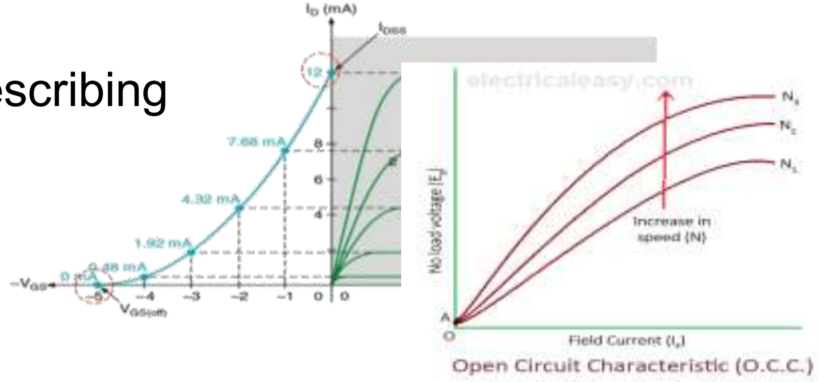
Dr. Hardy Krappe, PDTec AG

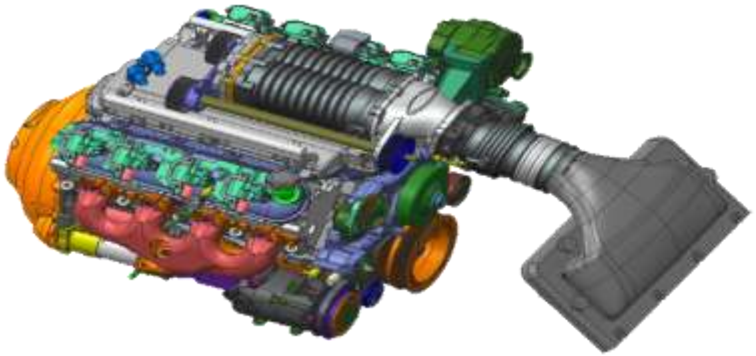
What are Technology Data?

Technology data refers to data that describes physical properties regardless of the data format, function and representation of a technical object.

geometrical data

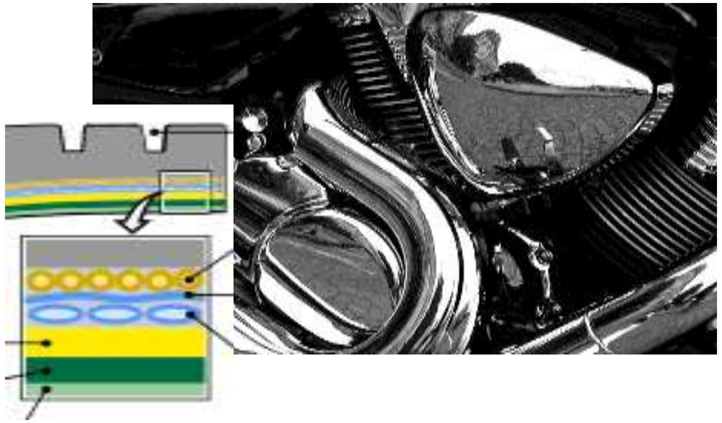
Technology-describing data



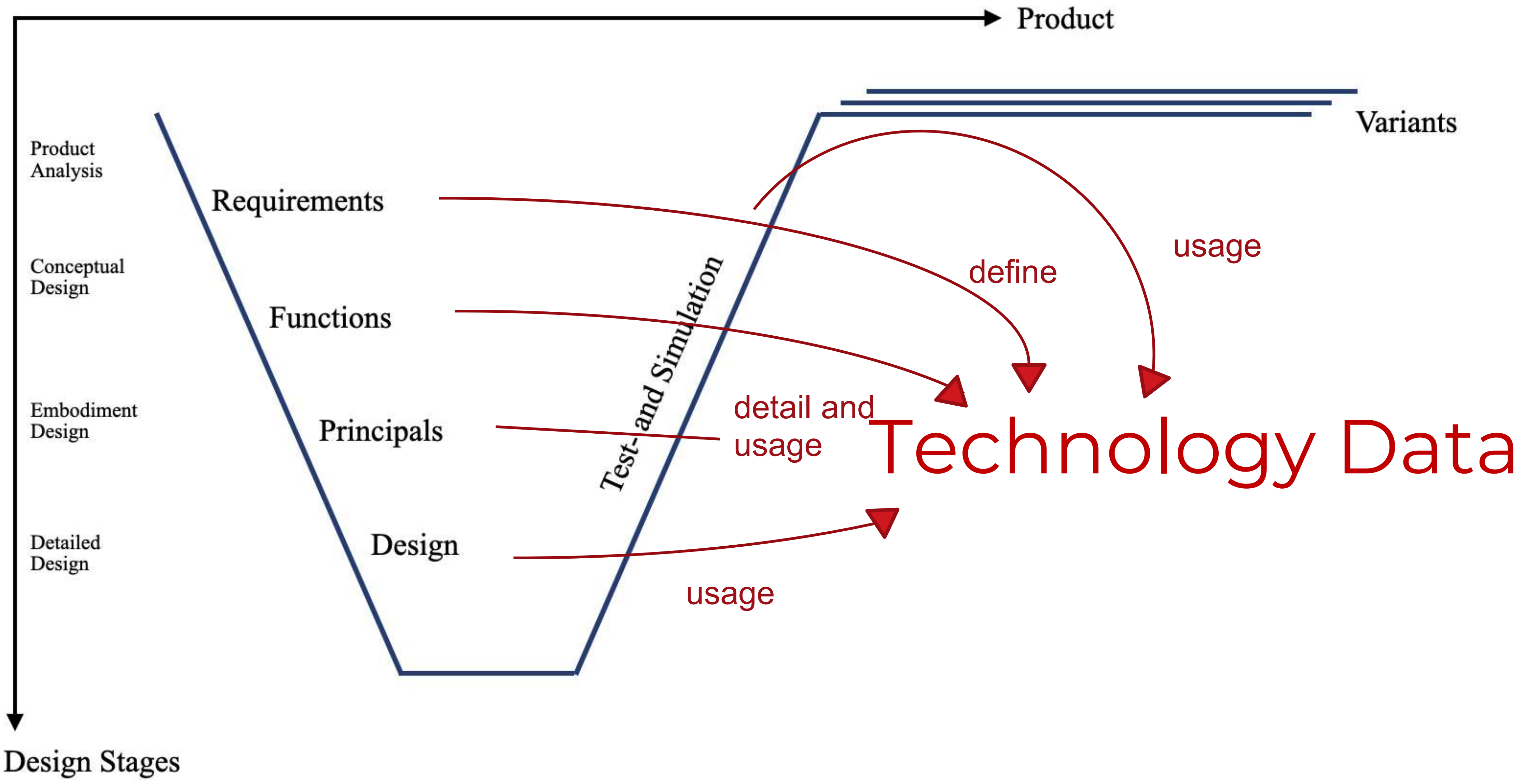


Technology data represent one class (type) of data inside the overall product structure

Geometry-related data e.g. material



Product Meta-Attribites


Product
Variants
Product Analysis
Conceptual Design
Embodiment Design
Detailed Design
Design Stages
Requirements
Functions
Principals
Design
Test- and Simulation
define
usage
detail and usage
usage
Technology Data

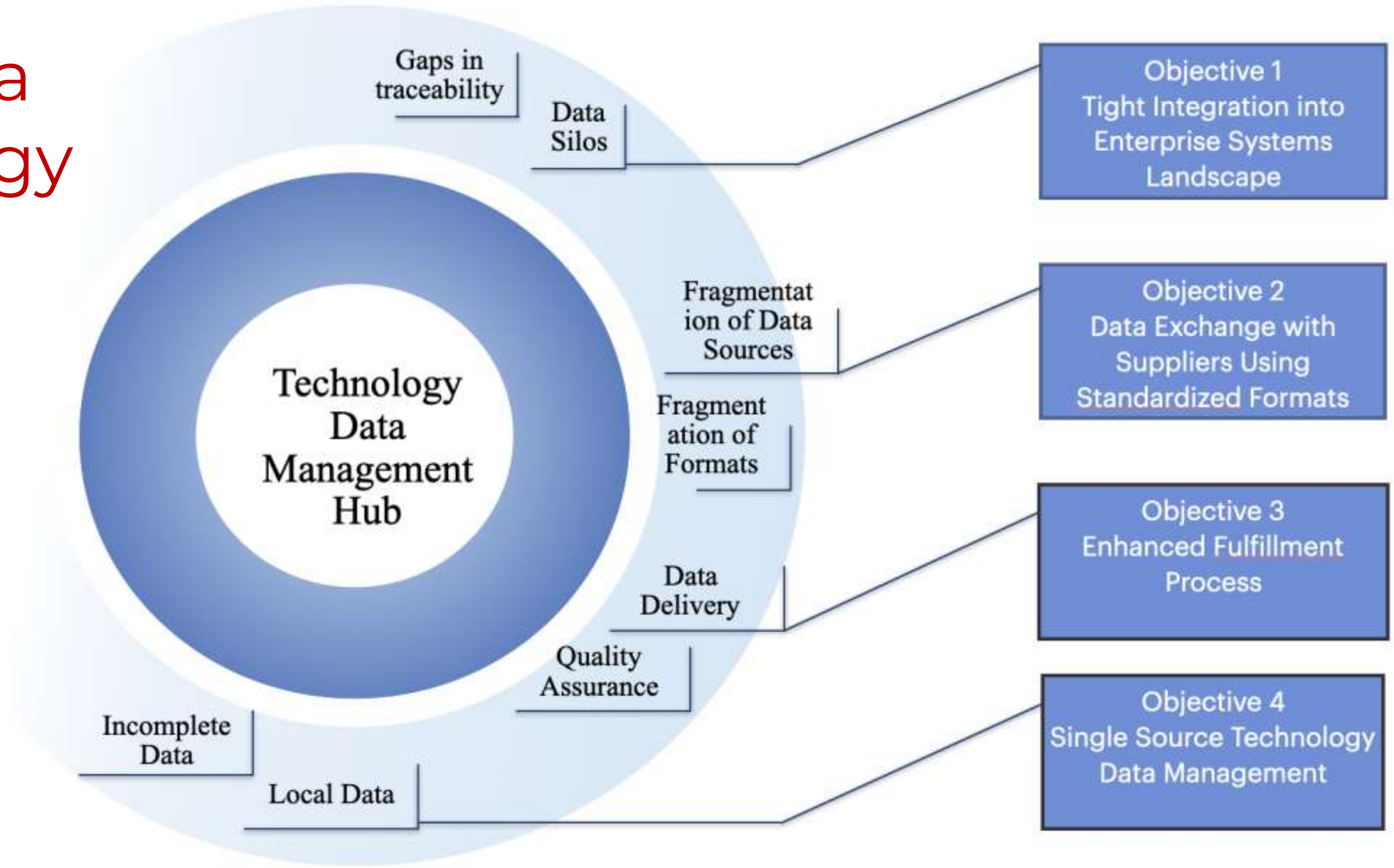
Direct Benefits

- Direct usage in simulation workflows/runs
- Precise and detailed information for e.g. digital prototypes and better decision making
- Higher number of iterations in simulations

Adressed Pain Points

- Fragmentation of data sources and formats
- Gaps in data integration / data silos
- Quality assurance in data delivery process
- Tracability breaks

Towards a technology data hub



Details on Objectives 1 & 2

- Objective 1:
  Tight Integration into Enterprise Systems Landscape
  – Interfaces and Services
    e.g. OSLC
  – Data Hub Functionality
    single access point
  – Interdisciplinary Collaboration
    communication across teams, divisions and companies

- Objectve 2:
  Data Exchange with Suppliers Using Standardized Formats
  – Numerical Representation
    IEEE 754
  – Physical Quantities and Units
    Units of measurements
  – Structured Data Models
    variable data schema

Details on Objectives 3 & 4

- Objective 3:
  Enhanced Fulfillment Process
  - Stakeholder Integration
    involve all stakeholders
  - Automated Mechanisms
    pattern recognition, AI
  - Digital Data Formats
    machine readable formats
  - Dashbards & Visualisations
    realtime insights

- Objectve 4:
  Single Source
  - Centralized Storage
    One central database, no silos
  - Versioning Mechanisms
    Tracking of changes
  - Data structures visualised in trees
    tags as label for meta-information
  - Rights & Role management
    Detailled Access Control
  - Traceabaility /Audit Trails
    dataset history

Compliance

- Clear definition of data ownership and enforcement of strict data segregation policies
  - Free-to-share vs. Need-to-know
- Data stewardship framework/ data governance for ensuring accountability in data ownership
  - policy-based access rights at organizational level,
  - prevent fragmentation of data usage rights across different stakeholders
- Protection of intellectual property
  - implementing controlled access mechanisms, encryption, and legal protections
  - data compartmentalization. This means that technology data submitted by one supplier must remain entirely inaccessible to others
- Export control and regulatory compliance

Technology Data Management

a powerful resource for innovation and efficiency