"Delivering innovation through standards"

Rolf Riemenschneider
DG CONNECT/E4
Internet of Things
European Commission
The European Data strategy

EU Data Strategy

**Cloud actions:**
- Cloud Rulebook
- Co-Investments in cloud-to-edge services, cloud federation and marketplaces.

**Data actions:**
- New legislation (Data Act, Data Governance Act, etc.)
- Co-investments in common European data Spaces

**Coordination**
- Use cases; technical architecture
- Complementing & integrating private and public initiatives, e.g.:
  - IPCEI* on Next Generation Cloud
    (*Important Project of Common European Interest)
  - Federation & interoperability standards
  - European Alliance for Industrial Data, Edge and Cloud

**Common European data spaces**
- Data Spaces Support Centre
  - Coordination and governance

**Digital Europe Programme**

---

*IPCEI* stands for Important Project of Common European Interest.
European Strategy for Data and related legislation

4 key instruments

- **Nov 2020**
  - Data Governance Act
  - Ensure **TRUST** in data transactions
  - Public sector data, private sector data and personal data voluntarily made available by data holders

- **Dec 2020**
  - Digital Market Act
  - Regulate **MARKET POWER** based on data
  - Personal data and private sector data held by online platforms and originating from the users (both businesses and individuals)

- **Q4 2021**
  - Impl. Act. High Value Datasets
  - Unleash the socio-economic potential of data as a **PUBLIC GOOD**
  - Public sector data of high value

- **Q4 2021**
  - Data Act
  - Ensure **FAIRNESS** in the allocation of data value among the actors of the data economy
  - Private sector data, personal data and co-generated (IoT) data

Existing legislation

- Directive 96/9/EC on the **legal protection of databases**
- General Data Protection Regulation – Regulation (EU) 2016/679

Complemented by sectoral legislation

- 2022 Access to in-vehicle data
  - Promote a competitive market on car data services, expanding the current legislation on non-discriminatory access to repair data
Better access to IoT data

*Rules for IoT data also frame data sharing in other sectors*

- Tackle contractual unfairness
- Make business data available for the common good
- Easier switching between cloud services

Facilitate data flows through technical standards and interoperability
Industrial Internet of Things: the strategic picture for Europe

Next-generation IoT

- Next-generation chips powering intelligence at the edge
- Power to the edge, where the data is
- Seamless connectivity
- Next-generation operating systems
- Decentralised/swarm intelligence
- Cognitive computing continuum

Investment in Data Spaces
- EU 5G & cloud-edge infrastructure/services

Standardisation, interoperability

Common Open Digital Platforms & Ecosystem

- Vertical, horizontal, x-sector integration

Data legislation:
- Data Act: access & fairness on data market
- Data Governance Act: foster trust in data sharing & intermediaries

The EU Policy Context:
- NextGenerationEU
- REPowerEU
- Twin Transition:
  - Digital Compass
  - Green: Fit for 55

New Industrial Strategy

- Open, dynamic ecosystems for EU tech businesses
- Transition pathways towards resilient, innovative, sustainable & digital ecosystems

Dr. Max Lemke, CNECT E4
Paradigm Shift: Cloud – Edge - IoT

Trend/Paradigm Shift: from Cloud to Edge
Bringing compute resources closer to the data

Federating far edge resources ad hoc via 5G
to provide edge-cloud resources close to the edge
Cloud-Edge-IoT Policies

- AI & Cognitive Clouds
- AI/ML as gatekeeper for sensitive data
- AI@the Edge

- Management of the Computing Continuum
- Cloud to Edge Orchestration
- Data Compliance (security, privacy, trust)

- Continuum-native Industries
- Edge and Decentralised Intelligence
- Edge MetaOS (energy, car)
- Computing: Distributed, swarm

Horizon Europe
DIGITAL Europe
AI Act / DATA Act
Data Spaces
IPCEI Cloud
Chips Act
Need of Reference Architecture Models

Taxonomy for the Edge

Cloud - Edge

Enterprise edge

Operations edge

Public or Private Cloud

5G Campus

Telco edge

MEC

Device edge

Embedded AI

Source: IDC, 2020
MIMs – Minimum Interoperability Mechanisms
Living.eu – High-Level Architecture

- A widely agreed reference architecture
- Landscaping on Standards, Gaps
- High-level abstraction, e.g. metamodels
- Focus discussions on key elements of interoperability

→ MIMs as part of a Standardisation Plan
Useful links:

- **European Data Strategy:**
  

- **ARTEMIS White Paper: From IoT to SoS:**
  

- **HIPEAC Vision:**
  
  [https://www.hipeac.net/vision/#/latest/](https://www.hipeac.net/vision/#/latest/)

- **The Alliance AIOTI: IoT + Edge Computing Convergence**
  
  [https://aioti.eu/news/](https://aioti.eu/news/)

- **IoT Week in June 2022 - Dublin:**
  
  [www.Iotweek.org](http://www.Iotweek.org)