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Short Description

This two-day workshop at the 2nd International Conference on Digital Sovereignty 2025 offers a complete journey through FIWARE's role in enabling trusted, interoperable data spaces. Day I delivers hands-on technical training with FIWARE Technical Evangelist Jason Fox, covering NGSI-LD, smart data models, IoT integration, machine learning, and MLOps. Day II bridges technology and strategy: the morning explores securing distributed architectures, implementing sovereign data spaces, and monetising services with AI, while the afternoon business session with FIWARE Foundation CEO Chandra Challagonda examines how FIWARE empowers digital sovereignty, fosters cross-domain innovation, and unlocks new market opportunities in the data economy.

Monday 27th

Technical Training by Jason Fox - Technical Evangelist at the FIWARE Foundation

09:00 - 09:30 **Welcome Coffee**

09:30 - 11:30 **FIWARE in the Data Plane: Background and Core Concepts (2 h)**

- Introduction to FIWARE
- JSON-LD and Linked Data
- Smart Data Models
- Basic NGSI-LD - CRUD/Subscriptions

11:30 - 12:00 **Coffee Break**

12:00 - 13:00 **Extending NGSI-LD, Distributed Operations**

- Registrations
- Solving the Challenges of Distributed Operations within Data Spaces
- Temporal, Language Maps, Raw JSON, Multi-Relationship,

13:00 - 14:30 **Lunch Break**

14:30 - 16:00 **Practical Applications - Machine Learning, MLOps & FIWARE**

- Strategies for Data Persistence
- Draco/Cygnus
- Big Data and Stream Processing
- Machine Learning with FIWARE
- Towards MLOps
- Real-time interference

16:00 - 16:30 **Coffee Break**

16:30 - 18:00 **Practical Applications - Connecting to IoT (1h 30')**

- Integrating IoT Agents using NGSI-LD
- Practical 1 - NGSI-LD Exercises
- Practical 2 - Connection device. Displaying Data

Tuesday 28th

Technical Training by Jason Fox - Technical Evangelist at the FIWARE Foundation

09:00 - 09:30 **Welcome Coffee**

09:30 - 11:30 **FIWARE in the Control Plane - Understanding Distributed Security and Data Spaces**

- IDM + PEP + PDP, XACML
- How to secure architectures
- Mechanisms of Distributed Trust
- FIWARE Data Space Connector

11:30 - 12:00 **Coffee Break**

12:00 - 13:00 **Monetising Services - Use of FIWARE with LLMs**

- Monetisation of Services
- DSP
- Talking with your Smart Solution
- Practical 4 - LLM

13:00 - 14:30 **Lunch Break**

Business Workshop by Chandra Challagonda, CEO at FIWARE Foundation

Digital Sovereignty with FIWARE

Overview

In the emerging Data Economy, digital sovereignty is no longer a theoretical aspiration but a strategic business imperative. Data spaces are at the heart of this shift, enabling ecosystems where not only valuable data but applications integrating services for AI and big data processing, visualization and interpretation of data can be provided and consumed by participants in a trustful manner, under a clear governance framework ruling interoperability and legal compliance aspects.

FIWARE brings the technology stack enabling data spaces by combining the NGSI-LD standard and smart data models for seamless data exchange, with FIWARE Data Space Connector and Marketplace technologies, developed under the umbrella of collaboration activities with, Gaia-X as well as other open-source initiatives as Prometheus-X.

The open-source, standards-based nature of FIWARE components for data spaces brings a solid foundation that supports sovereignty, interoperability, and business value creation in data spaces, avoiding vendor lock-in, enabling cross-domain and cross-border operations, and ensuring trust at every layer. This way, FIWARE empowers public and private stakeholders to unlock new markets, accelerate innovation, and strengthen competitiveness in a data-driven world.

14:30 - 16:00 ***Digital Sovereignty with FIWARE - Part I***

Key Topics

1. **Digital sovereignty as a strategic imperative** – How to turn sovereignty policies into competitive advantage, with practical examples from real-world implementations.
2. **From data spaces to value ecosystems** – Moving beyond simple data sharing to enable AI, big data analytics, real-time IoT services, and sector-specific applications.
3. **Trust, governance, and security frameworks** – Ensuring interoperability, compliance, and multi-stakeholder collaboration in sovereign AI and data ecosystems.
4. **FIWARE technology stack in action** – Core concepts (NGSI-LD, JSON-LD, Smart Data Models), IoT integration, data persistence, and the FIWARE Data Space Connector for secure, governed data exchange.

16:00 - 16:30 ***Coffee Break***

16:30 - 18:00 ***Digital Sovereignty with FIWARE - Part II***

1. **AI enablement through FIWARE** – Applying machine learning and MLOps within sovereign data architectures to accelerate innovation.
2. **Collaborative ecosystem engagement** – Partnerships and alignment with Gaia-X and Prometheus-X to strengthen European and global interoperability.
3. **Open source as a sovereignty enabler** – Avoiding vendor lock-in and ensuring scalable, cross-domain, cross-border operations with full transparency.
4. **Business impact of digital sovereignty** – Unlocking new markets, driving innovation, and building long-term competitiveness through open, trusted, and sovereign digital infrastructures.

Prerequisites

- **For the Strategic Session:** No technical prerequisites are required. A general interest in digital transformation, business strategy, and innovation is beneficial.
- **For the Technical Session:** Participants should have basic knowledge of REST-JSON technologies, data modelling, and cloud-based solutions (e.g., Docker/Kubernetes). Familiarity with basic programming and APIs is also recommended.