FEDeRATED and EU Mobility Data Spaces – towards an operational framework

Roeland van Bockel

Prep EU Mobility Data Spaces Workshop 10 May 2023

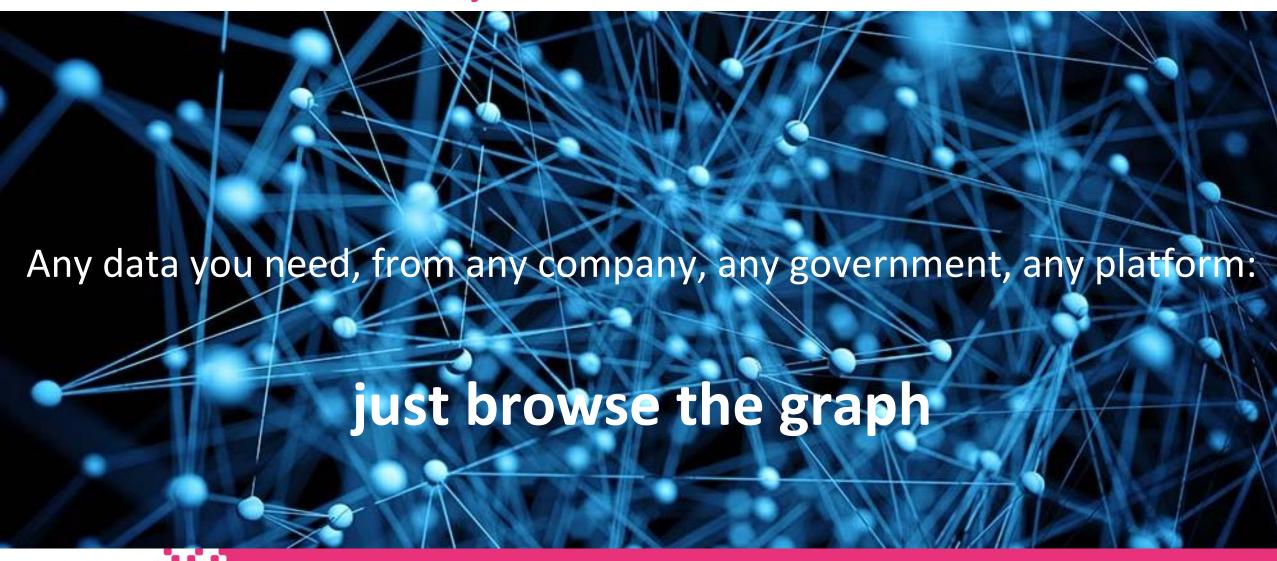






The future of data systems...





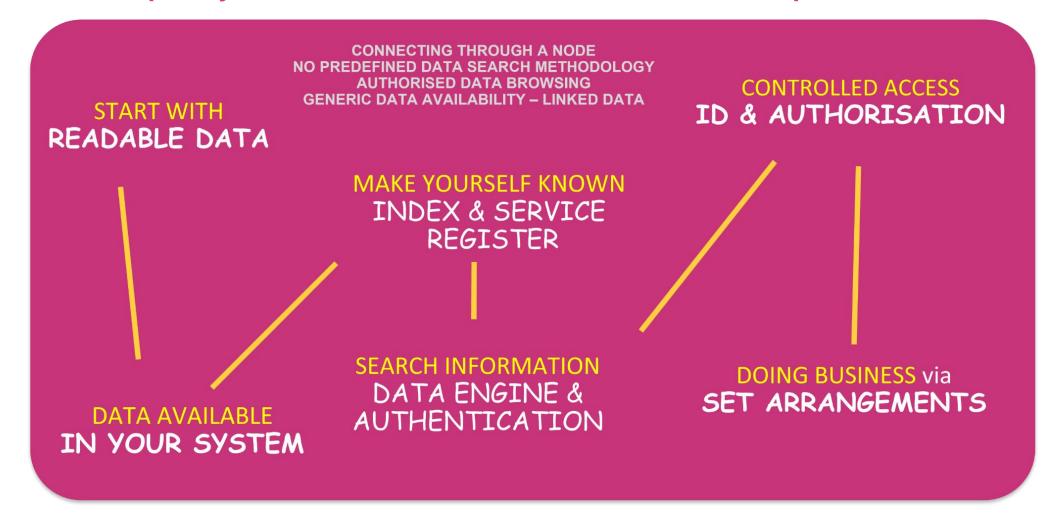
What FEDeRATED wants



- Supply chain visibility, optimized asset and infrastructure use and new services in a trusted & pull based infrastructure provision
- Paperless transport based on M2M interoperability, not digitized documents
- No proprietary solutions, vendor lock-ins or monopolistic Platforms
- Harmonized data interoperability Agreed semantics based on events (semantic web) – data at source (Core Operating Framework)
- Capability all stakeholders to become data points (nodes) monetizing on multiple transactions







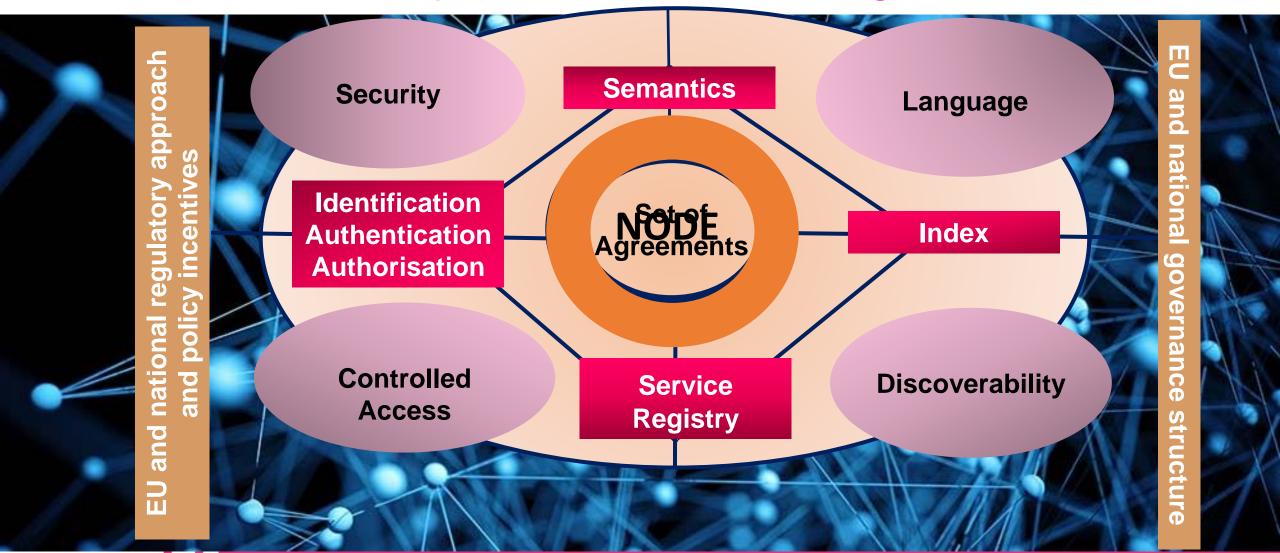


Do you speak FEDeRATED?

<u>FEDeRATED semantic interoperability (federated platforms.eu)</u>

The FEDeRATED operational framework - grid

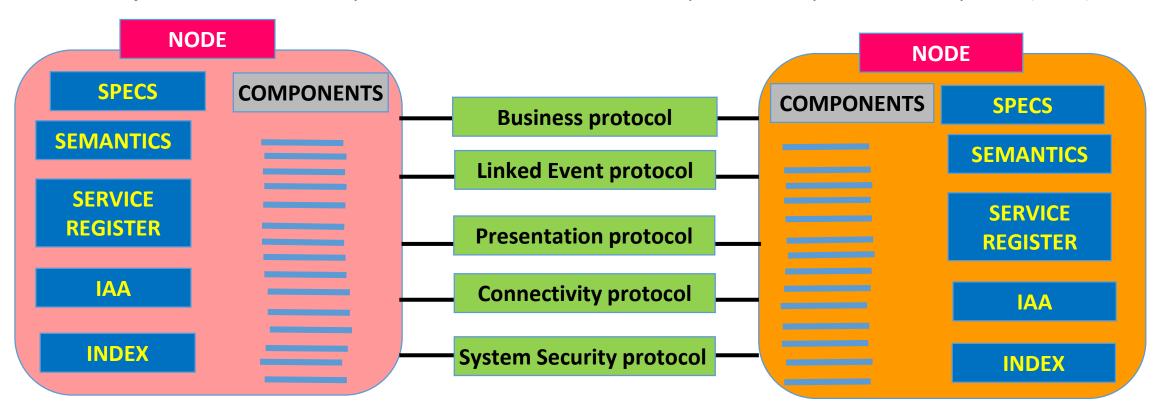






The regulatory approach – set of agreements (protocols)

- Internal autonomy (dataspace, platform, etc.) implementation of their own agreements
- **Federation** acting as one according to common agreed rules
- Capabilities need to be proved trusted and licenced to operate unique license to operate (node)



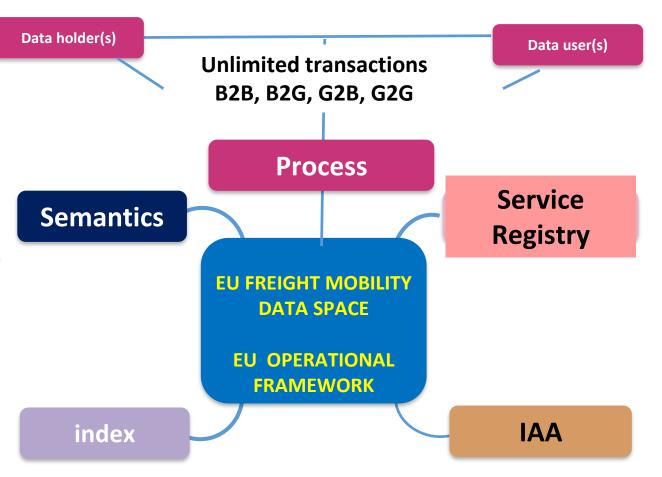


The business process and technical components



Semantics - specification
Interaction pattern
Modeling alignment or
-mapping
Access policy specification
System security protocol

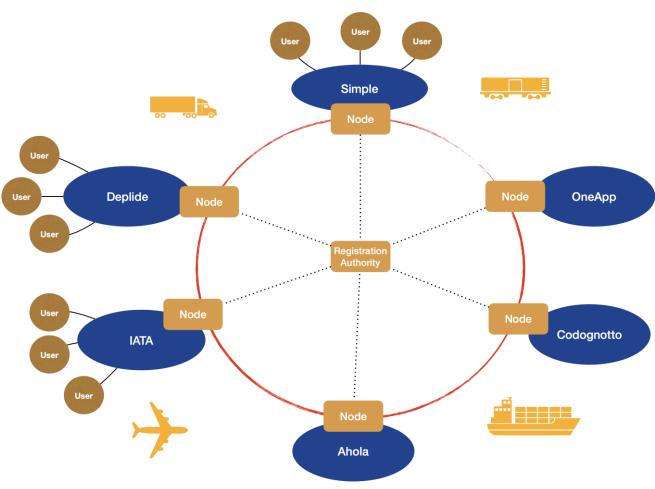
Event storage
Data validation
Event distribution
Event logic
Authorization
Query federation
Connectivity protocol
Connectivity component
Internal connectivity
Non-repudiation



Modelling toolset
Organizational profile
Toolset to construct and
publish organizational profile
Syntax
Technology
Data carrier / standard
Data transformation
(semantic adapter)
Data mapping tools
Graphical User Interface (GUI)

Identity and Authentication
Authorization
Distributed versus centralized
implementation

A federated network of platforms/dataspaces/prototype FEDERATED



Internal autonomy

- Participants: enterprises, authorities, platforms/dataspaces.
- Each participants has its own internal systems and solutions.
- Each participant locally integrates to the network with a node.
- Each participant may implement the node functionality itself.

Federation

- Events are shared in a common format and structure via nodes.
- Reception of links provides data access at the source (authorization)
- Links provide access to additional data (agreed access policies).



Where to find the code?



https://github.com/tno/federated-bdi

- Source code
- Technical documentation
- Unit and integration tests
- Gitlab CI pipeline
- Configured for a demonstration use case

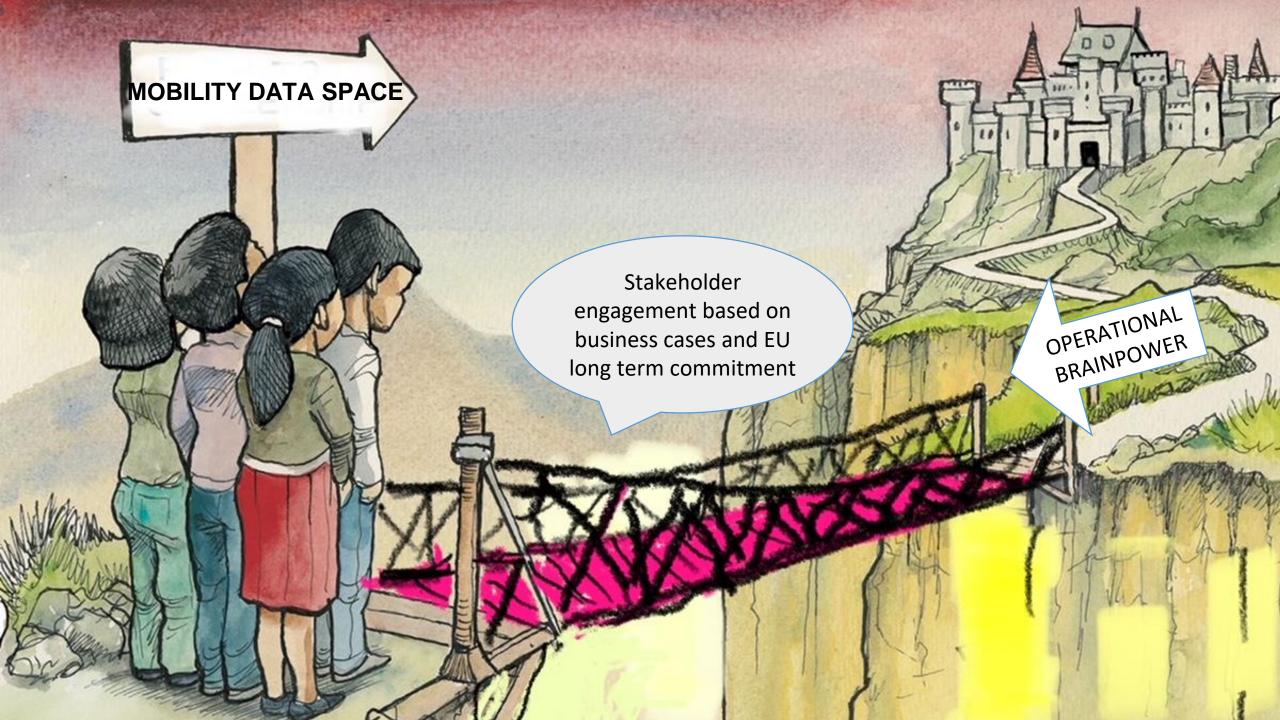
https://github.com/federated-bdi/docker-bdi-node

Docker node

https://github.com/federated-bdi/Kubernetes-bdi-node

Kubernetes node





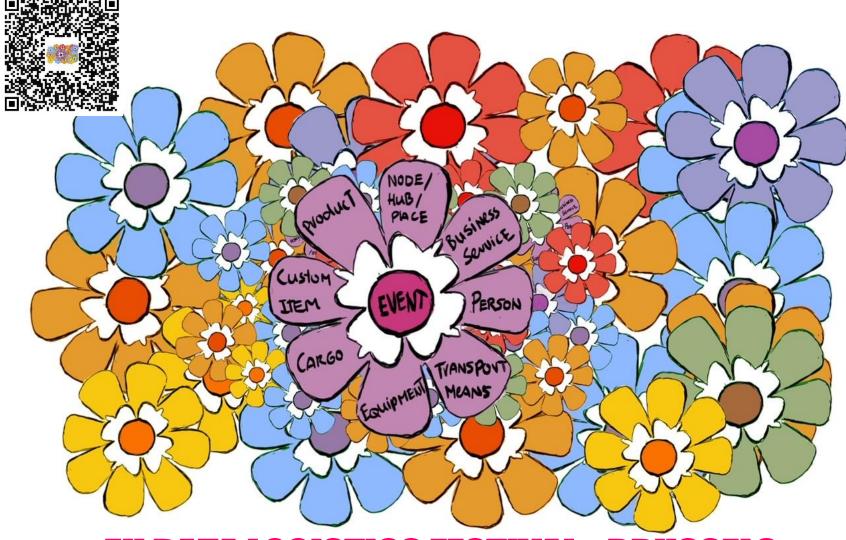
THANK YOU

Let's continue the conversation

roeland.van.bockel@minienw.nl www.federatedplatforms.eu @FeRated (Twitter) #FEDeRATED (LinkedIn)



INVITATION TO JOIN US - 30 NOVEMBER 2023



EU DATA LOGISTICS FESTIVAL - BRUSSELS

EU Data Logistics Festival - 30 November 2023 Brussels - FEDeRATED Invitation to participate (federatedplatforms.eu)