CoE DSC

Value from federating data spaces and interoperability challenges

DSIC session, Utrecht 5 July

Agenda

		Speakers	
15:00 – 15:05	*Introduction*	Pieter Verhagen	(CoE-DSC)
	On interoperability		
15:05 – 15:10	• Uncovering value of cross-domain data sharing & interoperability	Gijs Houwelingen Yekaterina Travkina.	(CoE-DSC) (CoE-DSC)
15:10 – 15:20	• EU developments, interlinking layer	Harrie Bastiaansen	(TNO)
	Panel	Maryse Bücking Niels Bolding	(NTM) (Health RI)
15:20 – 16:00	• Exploring interoperability with Dutch data sharing initiatives	Edwin van den Belt Rik de Lange	(DRO) (DVU)
16:00 – 16:10	Coffee break		
	Interaction	Led by CoE-DSC team	
16:10 – 16:50	• Exploring what does it bring you		
16:50 – 17:00	• Next steps		
17:00 – 18:00	Networking drinks		

Value of cross-domain data sharing & interoperability

The next step in the development of data spaces is realising cross-domain data sharing which requires practical navigation

There are examples in practice of data sharing initiatives realising value from cross-domain data sharing by federating

Automotive & Steel manufacturing work together to strengthen resilience of supply chains

Catena-X Certified Solution

SCSN smart connected supplier network

Energy & Finance work together to offer green loans

EDSN energiedata voor iedereen

hdn

When federating across domains, interoperability is a multifaceted notion that concerns both Soft & Hard infrastructures

Part of federating is about aligning building blocks of initiatives involved

DATA SPACES SUPPORT CENTRE

Organisational and Business Building Blocks

Business	*Governance*	*Legal*
Business Model Development	Organisational Governance	Regulatory Compliance
Use Case Development	Data Sharing Governance	Contractual Framework
Data Product Development		
Data Space Intermediary		

Data Interoperability	*Data Sovereignty & Trust*	*Data Value Creation*
Data Models	Access & usage policies and control	Data, Services and Offerings descriptions
Data Exchange	Identity Management	Publication and Discovery
Provenance & traceability	Trust	Marketplaces

Technical Building Blocks

EU developments, interlinking layer

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Centre of Excellence for Data Sharing & Cloud

DSIC Community Meeting

TNO innovation for life

July 5th, 2024

EU Data Strategy

The bigger picture

EU Data Strategy **“Common European Data Spaces”**

Importance of Data Spaces

“The value of the data economy is EUR 300 billion in EU right away.”

A single market for data

“The EU will become an attractive, secure and dynamic data economy by:

> pooling EU data in key sectors with common and interoperable data spaces

EU ambition driven by

- Economic/financial values
- Geo-political values: digital sovereignty
- European ethical values: data sovereignty, societal inclusion, openness and transparency

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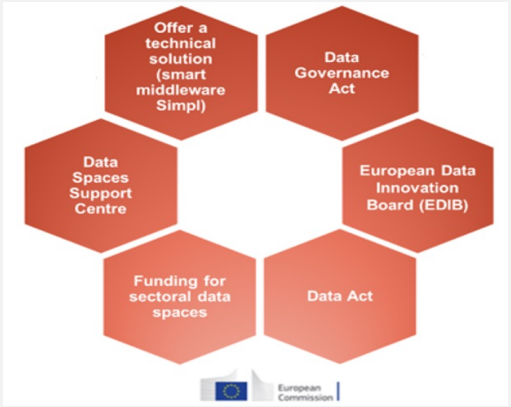
EU Data Strategy

The EC takes a leading role in both development and deployment

Development *

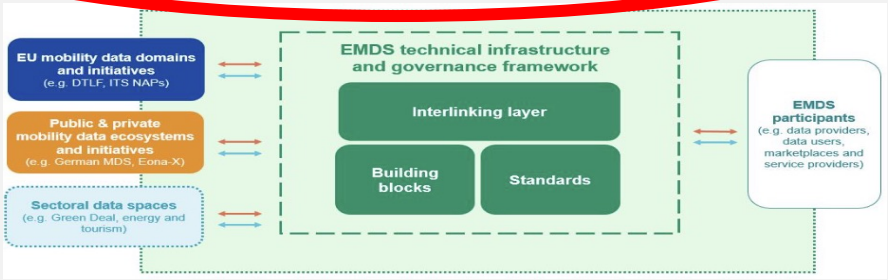


- **Legislation / Regulations**
  - *DA, DGA, DMA, DSA, ….*
- **Reference architectures**
  - *IDSA, Gaia-X, DSBA, (iSHARE,) …*

-> DSSC Blueprint

Deployment

- **Open Source Components**
  - *EC SIMPL procurement initiative*
- **Operationalisation in Data Spaces**
  - *Starting with six 'EC-controlled' data spaces*
  - *The EDICs (European Digital Infrastructure Consortium)*
- **The Interlinking Layer**
  - *Initialised from the European Mobility Data Space (EMDS)*
  - *Expected to include other sectoral data spaces as well.*



* EU PrepDSpace4Mobility project. "D3.1: Towards a common European mobility data space - Perspectives, recommendations and building blocks". https://mobilitydataspace-csa.eu/wp-content/uploads/2024/03/2024-03-19-deliverable-d3.1-analysis-report-v3.pdf.

Towards large scale federation and interoperability

The emergence of an Interlinking Layer

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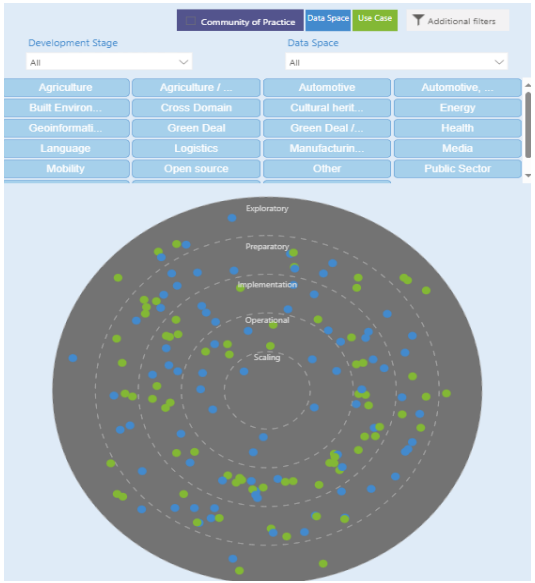
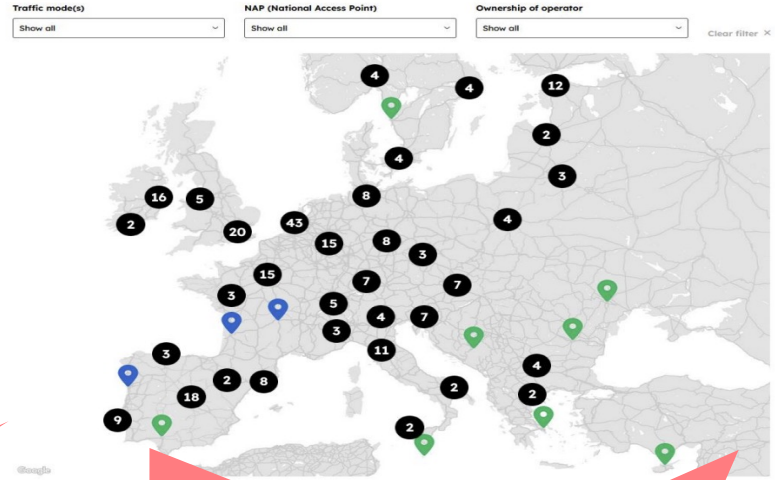
IDSA Data Spaces Radar *



European Mobility Data Space Coordination and Support Action **

PrepDSpace4Mobility



OBSERVATION 1

Federation and Interoperability are key for the EU Data Strategy and enabling the Data Economy

OBSERVATION 2

A bilateral / multilateral approach on Federeration and Interoperability will not work.

A scalable federation and interoperability architecture is needed

OBSERVATION 3

Mobility and Logistics may be the frontrunners, as they are:

- cross-sectoral in nature
- cross regional / border in nature

Towards convergence: federation and interoperability

The European Mobility Data Space (EMDS) taking the lead with the Interlinking Layer?

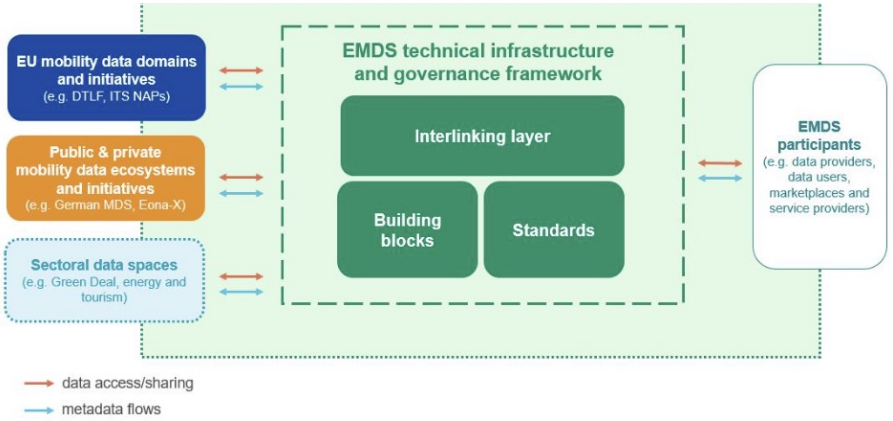
EC's Communication on the EMDS * (November 2023)

Citations on the Interlinking Layer

3) Interlinking layer:

Drawing on discussions with relevant stakeholders and dedicated projects, the Commission will aim at first defining the specifications and then support the deploying of an interlinking layer that will enable the interconnectivity of existing and emerging mobility and transport data spaces and domains. It will notably facilitate the discoverability and accessibility of data from those data spaces and domains. In this way, this layer is expected to become the core of EMDS.

The end-users of the EMDS will be able to discover, access and exchange data with this vast range of ecosystems, so that they can create innovative mobility services and enable value added use cases in the transport sector.



* European Commission (November 2023). "Creation of a common European mobility data space - EC Communication". https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52023DC0751.

Towards convergence: federation and interoperability

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Citations on the Interlinking Layer

- *Phase 1: DIGITAL CSA (12 months – from Q1 2024 to Q1 2025)*
  - *Milestone: definition of the interlinking layer*

Analysis with specifications and recommendations for the creation of an interlinking layer

- *Phase 2: CEF deployment (36 months – from Q1 2025 to Q1 2028)*
  - *Milestone: deployment of the interlinking layer*

Bron: Edward van Gelderen
Federatief Stelsel
Connectiviteit.

* European Commission (November 2023). "Creation of a common European mobility data space - EC Communication". https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52023DC0751.

Towards convergence: federation and interoperability

The European Mobility Data Space (EMDS) taking the lead with the Interlinking Layer?

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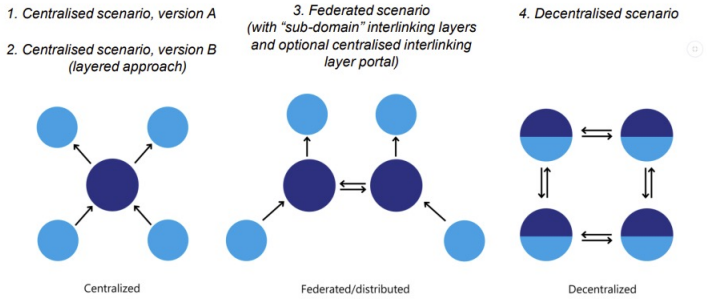
In-scope: Discoverability



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Out-of-scope (Currently?): Trust and Data Sovereignty

Towards a Scalable Data Space Interoperability and Federation

A Combined Community-Driven and Participation-Driven Approach in View of the Emerging Common Interlinking Layer

Discussion Paper

Towards convergence: the EDIC

An EDIC: European Digital Infrastructure Consortium *

What is an EDIC?

European Digital Infrastructure Consortium (EDIC) is an instrument made available to Member States under the Digital Decade Policy Programme 2030 to speed up and simplify the setup and implementation of multi-country projects. EDICs will enable the achievement of the Digital Decade general objectives and targets.

EDIC for Mobility and Logistics Data

- *Under formation*
  - *Ambition to be approved and starting in 2024*
  - *Not a project, but initiative (indefinitively)*
- *Led by Ministries'*
  - *NL in the lead, together with Germany and Finland*
  - *Approximately 13 interested countries*
- *Having an Interoperability Working Group*
  - *Co-defined by: IDSA, iSHARE, TNO, ….*

EU EDIC Support Project

- *Is EU funded project*
  - *Running period: 2025-2028*
  - *Cascading call*
- *Dutch-led proposal submitted*
  - *Led by "Stichting Connekt"*
  - *Contribution from various RTO's*
    - *FhG, IMEC, TNO, …*
  - *Supported by EDIC and ministries*

* European Commission : "European Digital Infrastructure Consortium (EDIC)". https://digital-

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Thank You for Your Attention

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Panel discussion

Maryse Bücking

Information Architect of NTM (Nationaal Toegangspunt Mobiliteitsdata), involved in European work on interoperability in the mobility sector under EMDS (European Mobility Data Space), EDIC

Niels Bolding

Technical Lead of Health-RI, connecting Dutch healthcare data for research and innovation. His cross-domain interoperability focus is on building bridges between data for primary and secondary use, international healthcare data sharing.

Edwin van den Belt

Software Architect & Consultant at Dat.mobility, Goudappel involved in DRO, Shared mobility use cases, and international MaaS environments. A member of the Transmodel and CoRoM working groups (standardisation at European level).

Rik de Lange

On behalf of RVO involved in the DVU (Datastelsel Verduurzaming Utiliteit), focused on the interoperable exchange of the energy data from non-residential buildings in the Netherlands in collaboration with iSHARE.

Maryse Bücking

Nationaal
Toegangspunt
Mobiliteitsdata

Nationaal Toegangspunt Mobiliteitsdata

NTM & Interoperability

DSIC session on Interoperability | Utrecht | July 5th 2024

NTM = Dutch National Access Point for Mobility Data

Nationaal Toegangspunt Mobiliteitsdata

- ITS Directive: make mobility data findable using a NAP
- Federative registry of mobility data
- Provide insight in available standards within the domain (incl. logistics)
- Provide insight in data quality

- Collaboration with data providers RDW, CBS, NDW, NWB, NBd, DOVA, Portbase
- Active in sectoral communities
- Proactively acting on similar or equal data needs that are addressed by several data providers or those that fall through the cracks

Cross-border & cross-sector

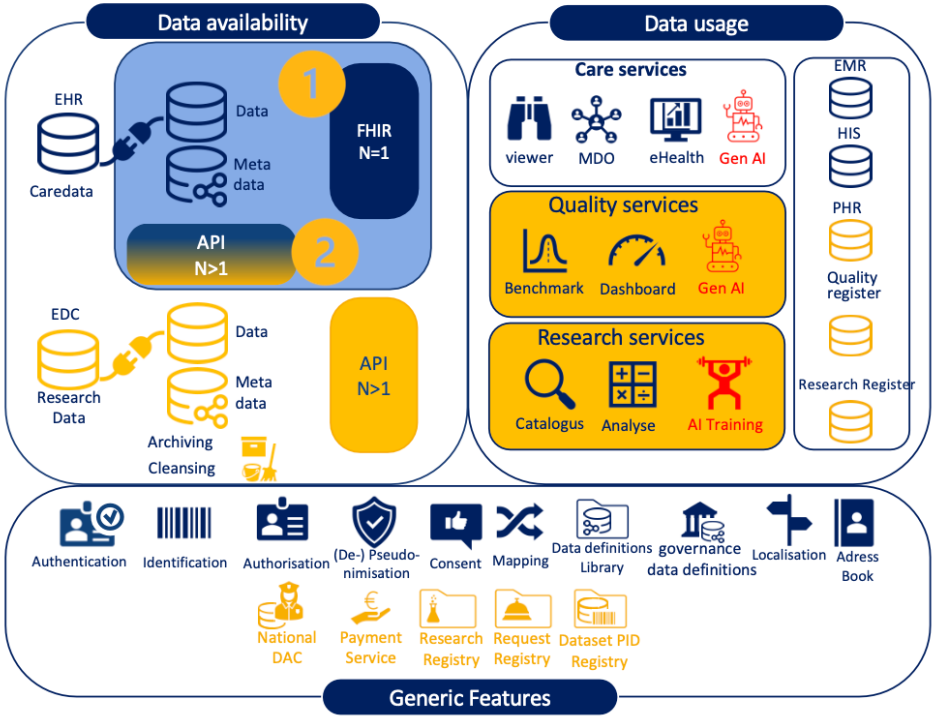
Nationaal Toegangspunt Mobiliteitsdata

- Active in NAPCORE (European organization to harmonise NAPs)
- Active in defining the application for an EDIC Mobility & Logistics
- Creation of a data dictionary in NAPCORE
- Linking pin between sighted developments/needs in communities and European actions as well as between communities and the Ministry of Infrastructure and Water Management

- Exploring Linked Data

Niels Bolding

Nationwide network Platforms



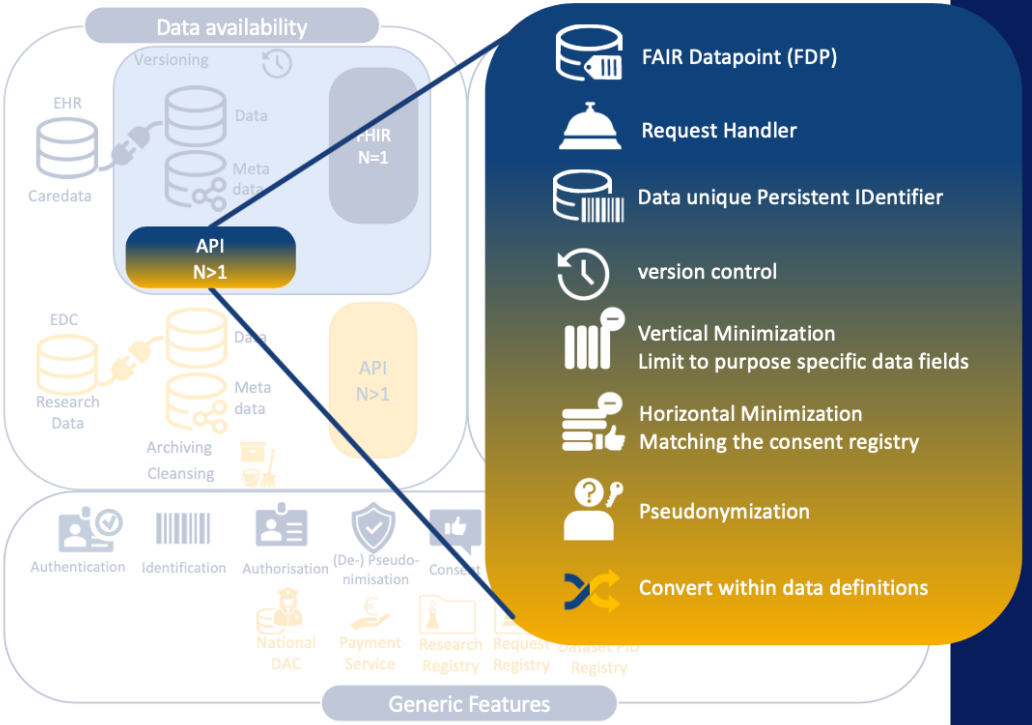
Platforms (CumuluZ concept)

Unity of Language and Technology at integration layer

N=1 for healthcare applications

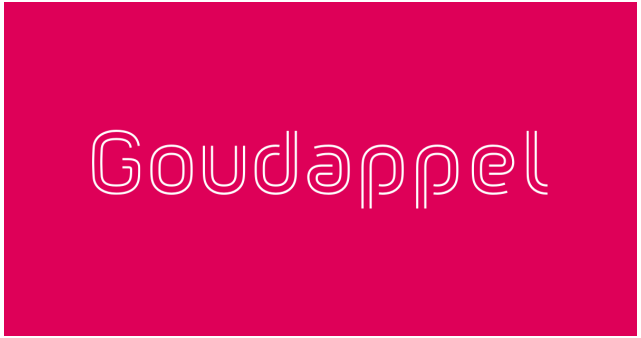
N>1 for secondary use

Nationwide network Platforms



Functions on the integration layer for secondary use (N>1)

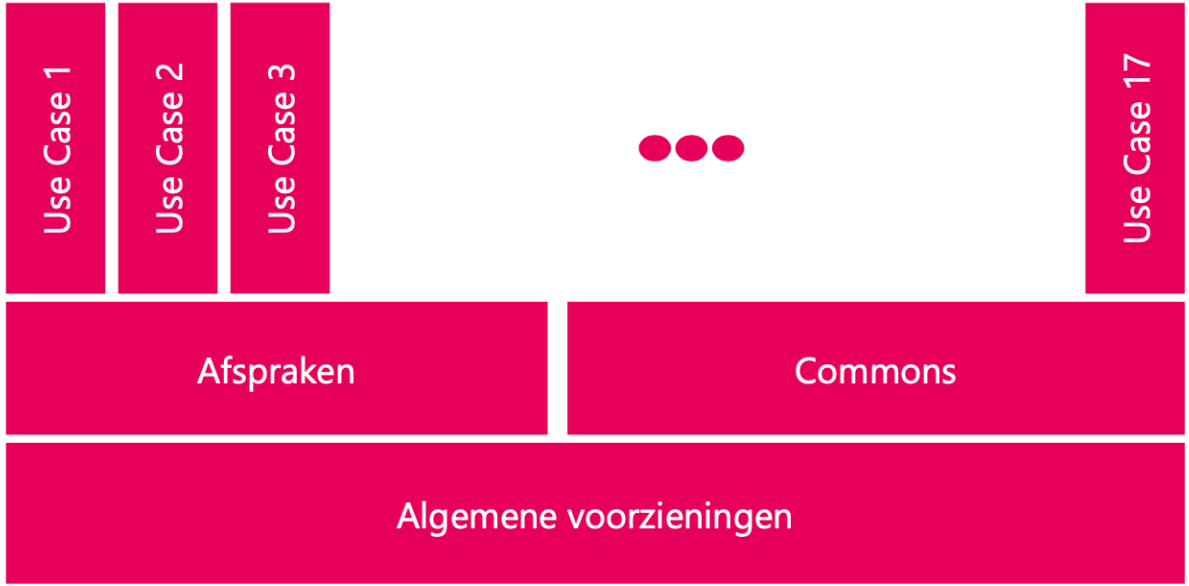
Edwin van den Belt



Goudappel

MOBILITY MOVES US

DMI - overview



DE STAD

Mobiliteitshub | Zelforganisatie | Intelligente toegang en snelheidsassistentie | Last mile | Andere toepassingen

TOEPASSINGEN

City support centre | Andere toepassingen

VISUALISATIE

Digital Twin | Andere visualisaties

PLATFORM

(Urban) data platform | Andere platforms

ALGEMENE VOORZIENINGEN DMI-ECOSYSTEEM/ADMINISTRATIEKANTOOR

DATA

Data top 15 | Sensor Data | Basis-registraties | Nationaal Toegangspunt Mobiliteitsdata* | Gebruikers-data | Bouw-data | Digitaal Stelsel Bebouwde Omgeving | Andere data

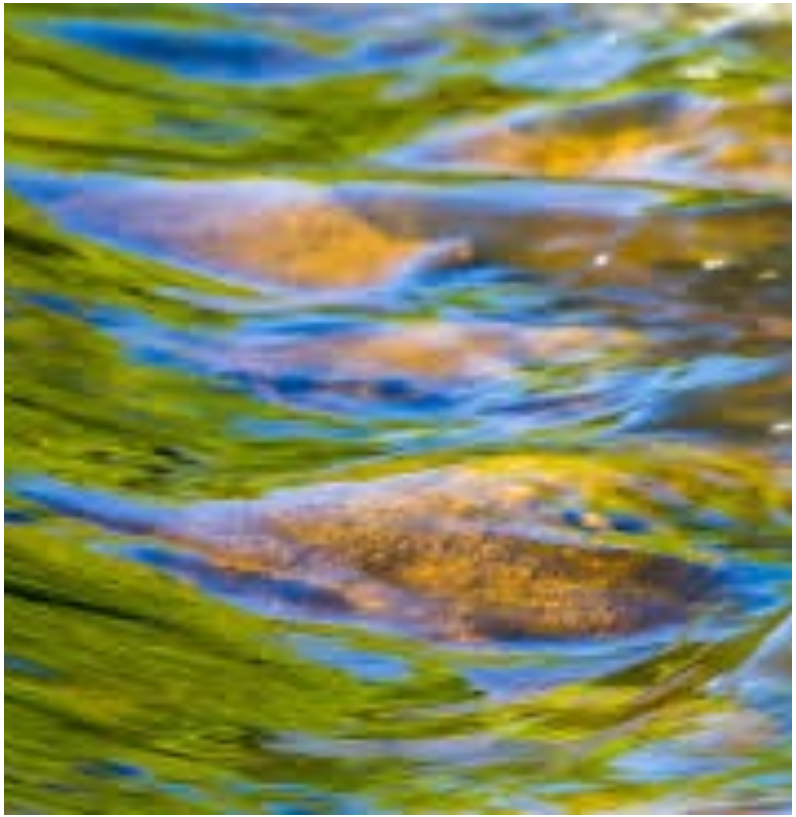
*(NDW, NWB, NbD, NPR, NDOV, CBS,...)

Rik de Lange

Rijksdienst voor Ondernemend Nederland

Dutch dataspace for Utility sustainability in the Build Environment (DVU)

Rik de Lange PO DVU



Importance of free flow of data

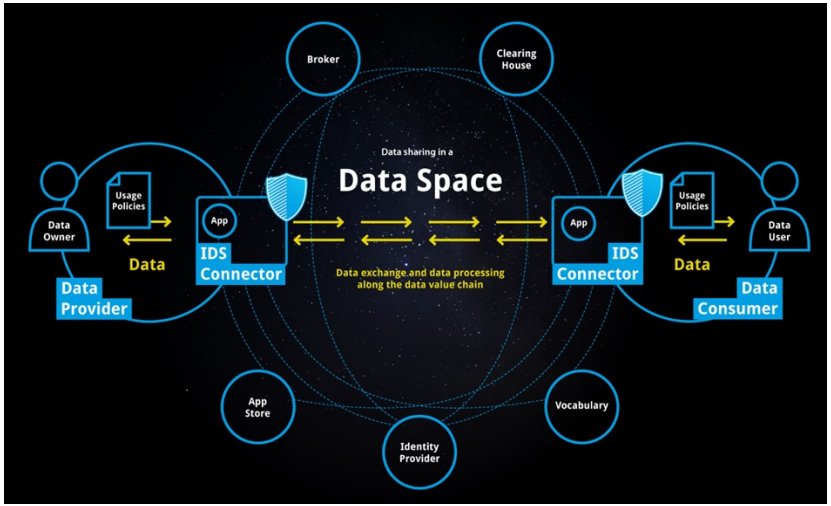
- Data is a verifiable source of information
- Data should be able to flow freely to where it is needed
- The need for data is community driven: public or private
- Use cases give directions to what is needed

Mission DVU: give owners and users of utility buidings insight in their buildingdata and energy consumption so they can use the data as a start to renovate and save energy

Why DVU?

- Building- and energyuse data is a startingpoint for green building renovation
- Stakeholders have been asking for more insight in their data
- First plan in Dutch Climate Agreement (2019)
- EU directives: data act, data governance act, EPBD IV and EED
- Insight in energyuse per square meter is important, next to energylabels
- Federative datasharing is Dutch policy for governmental bodies (e.g. municipalities)

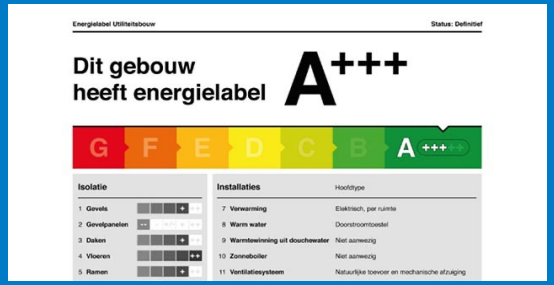
Principles of federative datasharing



IDENTIFICATIE	AUTHENTICATIE	AUTORISATIE
Wie ben je?	Hoe bewijs je dat?	Wat mag je?
Een set attributen die een individu (persoon/bedrijf/ding) uniek maakt binnen een groep	Controle van een geclaimde identiteit o.b.v. verstrekte authenticatie-middelen	Vaststellen van de bevoegdheid van een individu en daadwerkelijk verlenen van toegang

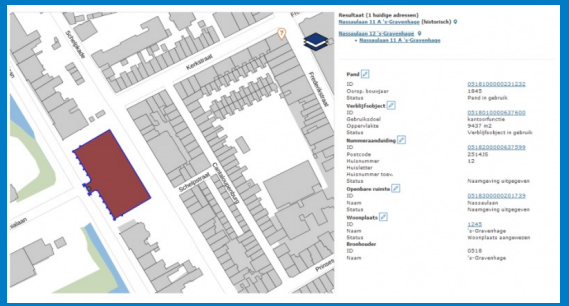
- Only members of the dataspace can share data between them
- System with IAA principles needed, especially for sensetive data like energy use
- Souvereignty of the data owner

Which data sources we disclose in DVU?



Energylabel data

Smart meter data



Building data

Other data in scope

- More data from the energy sector:
- data about the kind of grid connection and capacity
- Data about heat delivery
- Data about applied energysaving measures in a building

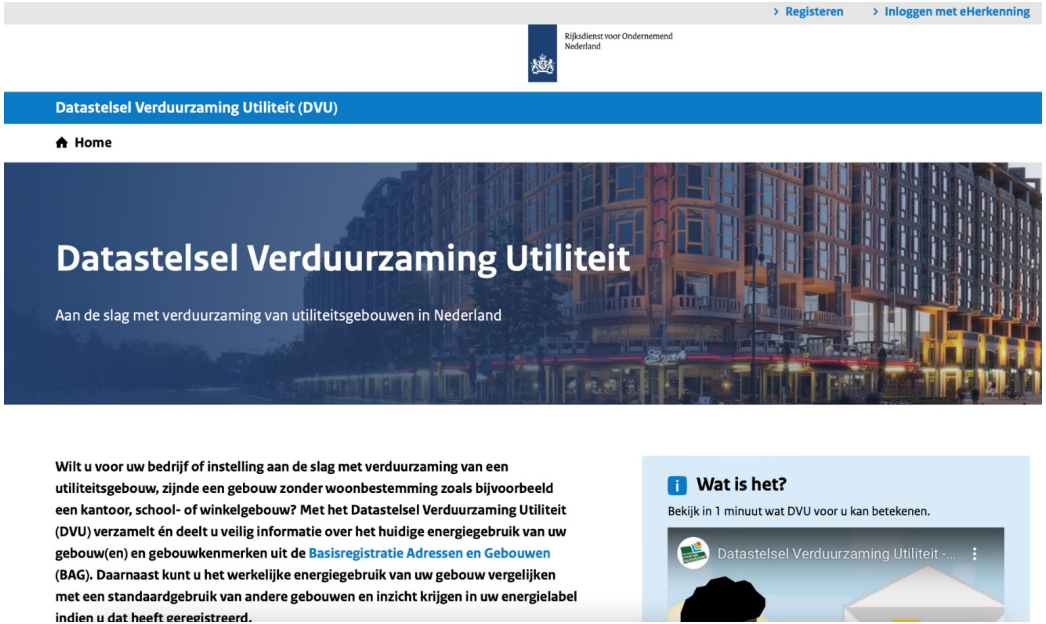
Future developments

- Reconaissance into building passport for home-owners
- DVU could fulfill the role as building passport for the non-residential buidings
- Interoperability with the dataspace of the buildingsector en energysector (both based on iSHARE)

Importance of interoperability

- Lowering barriers for datasharing (onestop login)
- Recognition of identities
- Acces to other data sources
- Ecosystem development
- Extended use case possibilities

Thank you for your attention!



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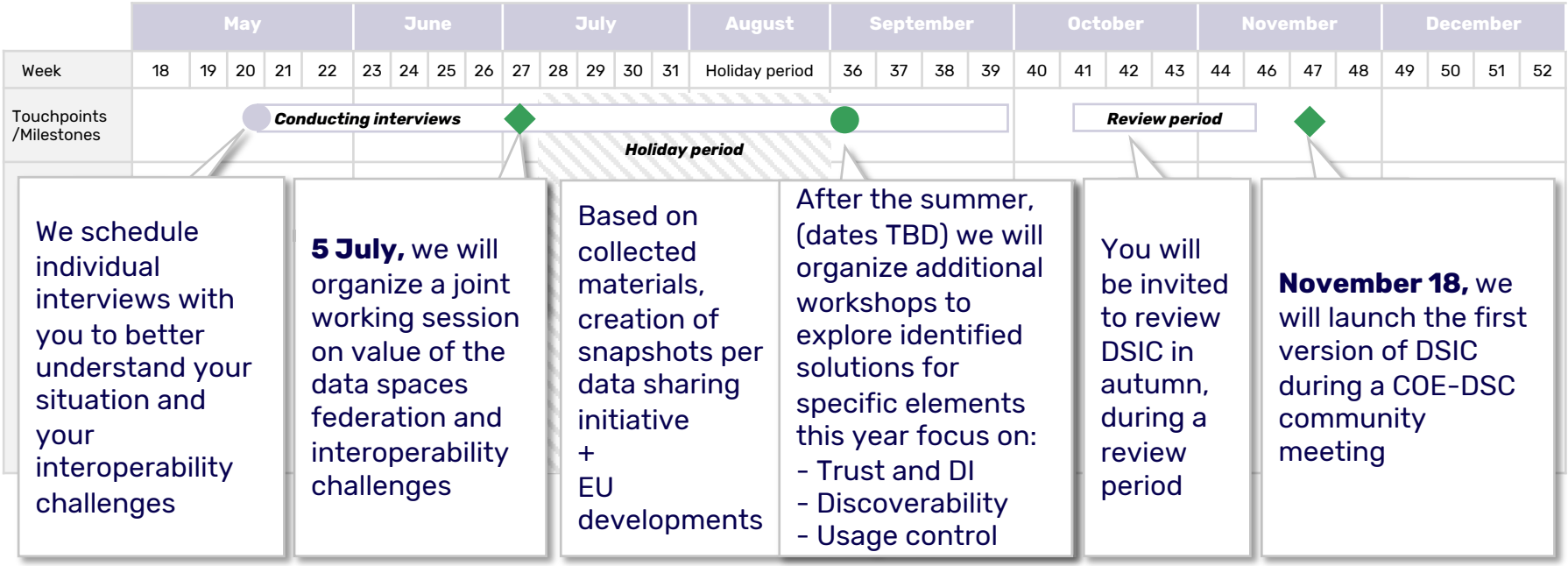
Interaction

Next steps - DSIC co-creation

Recap: overview of what you can expect for the rest of the year regarding DSIC co-creation



Legend: Events Workshops Interviews

Join us for the networking drinks downstairs

CoE DSC

Interested to join or have questions?
Reach out to CoE-DSC via dsic@coe-dsc.nl,
or personally to our team members:

For overall questions

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For DSIC elements workstream

Gijs van Houwelingen
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For federative cases workstream

Yekaterina Travkina
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