Project deliverable D4.4

Flanders – Detailed Implementation Plan Part A

Co-funded by
the European Union

Document information

Summary					
Grant Agreement	101123520	**Project short name**	deployEMDS		
Deliverable no.	D4.4	**Deliverable name**	Flanders – Detailed Implementation Plan Part A		
Status	Final	**Due**	M6	**Date**	30/04/2024
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Dissemination level	PU – Public				
Document history	**Version**	**Date**	**Submitted**	**Reviewed**	**Comments**
	V1.0	30/04/2024	imec	Yes	-

Legal disclaimer

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Project executive summary

The establishment of a common European mobility data space (EMDS) aims to accelerate the digital and green transformation of the European mobility and transport sector. The deployEMDS project contributes to the further development of the common European mobility data space as announced in the European Strategy for Data and the Sustainable and Smart Mobility Strategy. It builds on PrepDSpace4Mobility, a Coordination and Support Action funded under the Digital Europe Programme and is the first deployment action foreseen under the EMDS initiative.

The deployEMDS project advances EU policy priorities by developing a technical infrastructure for an operational data space in the mobility sector. It aligns with the European Data Strategy's goal to facilitate data access, pooling, and sharing. The project supports the European Green Deal's aim to accelerate sustainable and smart mobility, thereby contributing to a reduction in transport emissions. Additionally, it aligns with the Sustainable and Smart Mobility Strategy, ITS Directive, and the NAPCORE project. The diverse consortium of partners implements 16 use cases across nine European cities and regions, aiming to create and deploy an operational data space with a common technical infrastructure. The project aims to make data available in a machine-readable format while facilitating innovative services and applications and contributing to the development of a European mobility data-sharing ecosystem.

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Deliverable executive summary

Keywords

Use case; Implementation approach; Implementation plan

Flanders, Traffic Measurements, Vocabulary hub

Executive Summary

This document details the approach of the deployEMDS local use case in Flanders, Belgium. Use case FLA_01, which is titled “Optimising the (re)-use of traffic measurements”, is implemented under the lead of imec, together with Digitaal Vlaanderen. This deliverable comprises the first of two iterations and outlines the approaches for achieving three objectives:

- Further develop the VSDS traffic measurements data space in Flanders,
- Interlink the VSDS traffic measurements data space with other regions through the EMDS,
- Improve usability for data consumers.

With these objectives, Flanders aims to integrate the local data space with the EMDS, with a focus on semantic data models. This integration offers valuable opportunities, which will be demonstrated through two research initiatives: one focusing on Sustainable Urban Mobility Indicators (SUMI) and the other on transfer learning.

List of abbreviations and acronyms

Acronym	Meaning
DCAT-AP	Data Catalogue Application Profile
DV	Digitaal Vlaanderen
EMDS	European mobility data space
KPI	Key Performance Indicator
MVP	Minimal Viable Product
VSDS	Flanders Smart Data Space
WP	Work package

1 Purpose of the deliverable

This document is one of nine deliverables produced in deployEMDS detailing the local use cases proposed and to be implemented by the nine local implementation sites of the action. These Detailed Implementation Plans are developed in two waves: This first wave of reports, titled Detailed Implementation Plan - Part A, are published in Month 6 of the project (April 2024). They focus on the ideation and refinement of the overall use case objectives, scope and context as well as providing a first description of the approach to be taken in the local implementation project.

In combination with the efforts of WP2 ("Development of an operational data space across borders"), in particular the ongoing analysis of technical requirements for the use cases, this report will lay the foundation for the Detailed Implementation Plan - Part B. In Part B, the overall steps, responsibilities, and timelines of the local implementation projects relative to the overall development of the EMDS technical and governance building blocks will be defined in detail. Part B will be published in autumn 2024.

1.1 Intended audience

The detailed elaboration of the objectives, context, scope, and approach of the use cases proposed and implemented by the local implementation sites in deployEMDS aims to establish a common and clear understanding of these local projects across the sites and inform horizontal actions in deployEMDS. Part A of the Detailed Implementation Plan allows for this understanding by providing necessary contextual information regarding the technical characteristics and requirements of the use cases analysed in WP2 and addressing governance-related aspects elaborated in WP3 ("Development of common governance mechanisms across borders").

For interested stakeholders outside the Consortium, this series of reports offers an initial understanding of the real-world challenges and objectives in the field of urban mobility data sharing, that the EMDS may address.

1.2 Structure of the deliverable and links with other work packages/deliverables

This first set of reports, titled Detailed Implementation Plan - Part A, summarise the use case ideation and refines the overall approach considerations of the use cases proposed by the local implementation sites in deployEMDS. For each use case, the reports provide general information, an analysis of the use case context, the definition of the use case objective, and a delineation of pathways to the use case implementation. Based on these analyses, the primary implementation product, or minimum viable product (MVP) of the use case, as well as potential subsequent implementation products, is defined. Each local implementation site chooses an approach: either "cascading" with a more comprehensive MVP or more agile iterations with a simpler MVP to start with. The report also provides a preliminary reflection on the subsequently elaborated Part B of the Detailed Implementation Plan.

This deliverable describes the use case FLA_01 developed in Flanders.

The Detailed Implementation Plan - Part A, along with the use case ideation outlined in this document, draws from the technical analysis of local use cases conducted in WP2 and the insights outlined in Deliverable D2.1, which specifies the technical infrastructure requirements for deployEMDS.

D2.1 is accessible on the deployEMDS project website and outlines essential technical, functional, and operational capabilities necessary to establish a data space to support the various mobility use cases, aiming to standardise mobility data and facilitate interoperability.

The Implementation Plan builds on this foundation, directly referencing information from D2.1, particularly in defining the implementation products for the use cases.

2 Implementation approach for use case FLA_01

2.1 General Information

The following sections provide general information about the use case and introduce the consortium partners forming the local implementation project consortium.

Use case title	
Optimising the (re-)use of traffic measurements	
Mobility themes addressed in the use case	
Multimodality, traffic management, environmental impact, transport policy crafting	
Use case cluster	
Data for mobility planning	
Roles	
Use case implementation lead(s)	**Laure De Cock**, Project Manager, imec **Simon Claus**, Use case implementation lead, Digitaal Vlaanderen
Consortium partners involved in the use case implementation	**Digitaal Vlaanderen (DV)** is the digital government agency of Flanders, Belgium. It is responsible for coordinating and implementing digital transformation initiatives across various government departments and agencies in the Flanders region of Belgium. DV aims to enhance the efficiency, transparency, and accessibility of public services through the use of digital technologies. Its focus areas include e-government services, data management, cybersecurity, and digital infrastructure development. DV works closely with stakeholders to promote digital innovation and improve the overall digital experience for citizens, businesses, and public administrations in Flanders.
	imec is a world-leading research and innovation hub in nanoelectronics and digital technologies. It conducts cutting-edge research in various fields including semiconductor technology, artificial intelligence, the internet of things (IoT), healthcare, and smart cities. It aims to push the boundaries of innovation and develop advanced solutions that address societal challenges and drive economic growth.

2.2 Analysis of the use case context

The following sections summarise the overall use case context by reflecting on the current situation at the implementation site and the challenges or opportunities for value creation related to the use case.

2.2.1 Overall context and geographical scope

The use case concerns the region of Flanders in Belgium, with the ambition to enable cross-border data sharing with other implementation sites in the deployEMDS action. Flanders is a small and dense region that is highly interlinked within Belgium and with neighbouring countries, which makes cross-border data sharing necessary for traffic management and mobility planning.

2.2.2 Current situation

As of today, different ways (and protocols) exist to exchange data. However, most of them are bilateral and ad hoc, or facilitated by local data applications. For traffic measurements specifically, this means that the data is locked up within silos: more than 500 entities own traffic measurements based on different technologies with their own protocols and semantics, which limits data reuse. Entities include local and regional road administrations, traffic engineering consultants, environmental agencies, touristic agencies, companies within the retail and advertisement sector, etc. Traffic measurements are used for a wide range of use cases both within the mobility domain (traffic control, policy monitoring, evaluation of measures, modelling and digital twins) and outside the mobility domain (modelling of emissions and noise maps, spatial permits, monitoring touristic activities, location analyses, billboard advertisements, etc). The value chain from sensor producer to data analysis tends to be linear and closed.

Flanders established the Flanders Smart Data Space (VSDS) as a domain-agnostic data space ecosystem. It allows to publish data and re-use it among different use cases. The VSDS has building blocks to launch a data space within the Flemish region. Within the regional VSDS, there are several domain-specific use cases, and traffic measurements is one of them. The VSDS traffic measurements data space[1] is envisaged to align with the EMDS framework. A first step was taken to define a common vocabulary standard with the regional stakeholders on traffic measurements: the Open Standard for Linked Organisations (OSLO). This OSLO traffic measurements standard is based on the general OSLO standardisation method and process within the Flemish region. This standard includes the localisation of traffic measurements on road segments (in line with INSPIRE), to define lanes and other traffic properties (in line with Datex II) and to define linked data elements for the data itself.

The envisioned VSDS traffic measurements data space is a regional data space within the mobility domain. It is built upon the VSDS layer that comprises different local domain data spaces. Furthermore, the VSDS traffic measurements data space will interlink with EMDS based on a common foundation and blueprint for common European data spaces. The figure below, produced by PrepDSpace4Mobility[2], illustrates the

[1] "Traffic measurements data space" will be used throughout this report to refer to the domain specific VSDS use case on traffic measurements.
[2] https://mobilitydataspace-csa.eu/pillars/

positioning of the EMDS, where the VSDS traffic measurements data space takes the position of a local and sectoral data space.

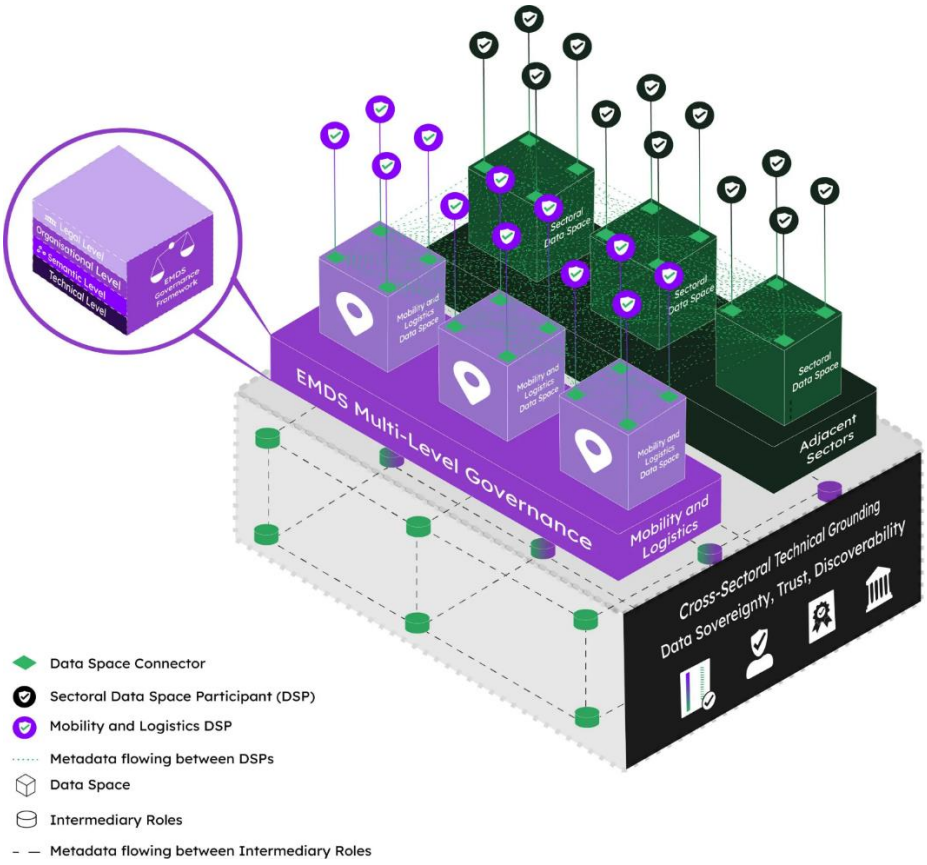

Figure 1 – Positioning of EMDS in the ecosystem

2.2.3 Current challenges or opportunities for value creation

To address the challenge of fragmented mobility data, Flanders aims to establish a local data space on traffic measurements and link this with EMDS. This will allow the sharing of Flemish traffic measurements respecting upcoming EMDS governance, using semantic data models, data space technology and linked data.

2.3 Objective of the use case

2.3.1 Objective statement

Based on deliberations with implementation site stakeholders and further refinement, the following use case objectives have been defined:

- Further develop the VSDS traffic measurements data space in Flanders,
- Interlink the VSDS traffic measurements data space with other regions through the EMDS,
- Improve usability for data consumers.

2.3.2 Overall use case narrative

A Flemish data consumer (e.g., a city, a company or a research group) should be able to retrieve traffic measurements from Flanders or another pilot region through a low-code or no-code interface. The data should be discoverable (e.g., available participation rules, available metadata), reachable (e.g., providing license and contract information) and understandable (e.g. respecting the same functional and technical standards). This will not only enable better traffic monitoring and planning but also help to make traffic safer and more sustainable, as a distinction is made between different modes (e.g., cars, bicycles, trucks).

2.4 Elaboration of implementation pathways

The following sections explore the actions and interactions required for the successful implementation of the use case. The pathway elaboration begins with the exploration of the most ideal implementation in an idealised, fictional scenario where all circumstances for implementation are favourable. Subsequently, the idealised pathway is adjusted to real-world circumstances at the implementation site by identifying potential barriers induced by this context and requiring alternate actions to address them. This chapter also explores how specific, realistic aspects, initially outside the scope of the use case, may influence its design or serve as subsequent development steps. This ensures the use case's longevity by considering potential additions during the initial implementation.

2.4.1 Ideal implementation pathway

This section details the ideal approach for accomplishing the three use case objectives. Pathways are described per objective.

Further, develop the VSDS traffic measurements data space in Flanders
The design and development of the VSDS traffic measurements data space comprises four different components:

- **Governance and ecosystems**: During the deployEMDS project the first version of the data space will be rolled out and a governance authority will be assigned to act as the governance body for the data space. This involves commitment from different stakeholders.
- **Metadata**: Participation of different data publishers will be registered in a central participation register. This also allows to construct of metadata in a mobilityDCAT-AP[3] compliant way of all published data streams. A clear process to maintain and republish this will be necessary. The Datavindplaats[4], a regional metadata catalogue will be used to publish the metadata. Furthermore, republishing in other metadata catalogues such as the Belgian NAP[5] is foreseen.
- **Functional interface**: A first linked data standard for traffic measurements is already developed with different local stakeholders within the official OSLO framework for Flemish standards[6]. Further refinement and feedback during implementation will lead to refinements, updated code lists and implementation guidelines (including translations).

[3] https://napcore.eu/release-of-the-mobilitydcat-ap/
[4] https://www.vlaanderen.be/datavindplaats
[5] https://transportdata.be/
[6] https://www.vlaanderen.be/digitaal-vlaanderen/onze-oplossingen/oslo,
https://data.vlaanderen.be/standaarden/erkende-standaard/vocabularium-verkeersmetingen.html

- **Technical interface**: The VSDS traffic measurements data space is based on the interfaces and building blocks of the VSDS framework in Flanders. It comprises building blocks with the Linked Data Event Streams (LDES)[7] technology that allows to exchange linked data. Clear implementation choices must be made for the traffic measurement use case, such as spatial fragmentations, retention policies and the link between dynamic data (e.g., the traffic measurements) and the traffic measurement sensor information (e.g., the type and location of sensors).

Based on the general preparations, the project team needs to roll out the data space by onboarding different data owners and data providers of traffic measurements in Flanders. The process comprises the following steps:

- Form agreements with the different data publishers to comply with the current and future governance frameworks. In a first stage, a local governance framework will be adopted. Once WP3 on governance has established governance frameworks for deployEMDS, these will be implemented as well.
- Technical onboarding process: this includes the mapping of the existing data protocol to the OSLO standard, the integration of the data pipeline with LDES building blocks, and the testing process. It is foreseen that the technical teams will support data providers in this step or act as an intermediary for the different data sources.
- The acceptance process includes the publication of the endpoint in the participation register and the metadata publishing of the onboarded dataset. The acceptance step also hands the ownership of the set-up of the technical publishing components back to the data publisher. The onboarding of data publishing is in line with the data space concept where the publishing is done under the responsibility of the data owner.

Interlink the VSDS traffic measurements data space with other regions through the EMDS

This objective focuses on a strategic approach for harmonising traffic count data across different regions, specifically focusing on the integration of data from diverse traffic counting systems in Flanders and at least one other deployEMDS implementation site that has access to traffic counting data[8]. The interlinking process needs to involve:

- The control plane level including aspects of data governance alignment, contract transfers and data re-use policies.
- The data plane level including technical interfaces and functional standards.
- Central services such as the identification process, participation management and metadata sharing.

DeployEMDS' WP2 is expected to develop all three aspects of the interlinking layer or data space federation between EMDS and VSDS traffic measurements data space, as these are defined as requirements in deliverable D2.1. Additionally, the EMDS interlinking layer is to be analysed under the EMDS technical support study funded under CEF and to be further aligned between WP2 and the authors of the study. However, Flemish partners propose to lead the data plane interlinking approach regarding vocabularies for the use case as described in this implementation plan. The rationale behind this initiative stems from

[7] https://github.com/SEMICeu/LinkedDataEventStreams, https://www.vlaanderen.be/vlaamse-smart-data-space-portaal/documentatie

[8] Barcelona and Tampere may be possible candidates.

Flanders' ambitious standardisation approach. All datasets in the VSDS traffic measurements data space will adhere to the OSLO data model and be transferred through the LDES protocol. The standardisation strategy will persist when upscaling the VSDS traffic measurements data space to the EMDS. Acknowledging this unique position, Flanders is well-placed to contribute to the EMDS by developing a vocabulary hub for semantic and sensor equivalence. As defined by the DSSC, a vocabulary hub is a technical component that provides facilities for publishing, editing, browsing and maintaining vocabularies and related documentation.[9] The goal is to facilitate a unified, comprehensive understanding of traffic patterns, environmental impacts, and urban dynamics, enabling informed decision-making and policy development at both regional and European levels. In other words, the vocabulary hub will enable the flow of traffic measurements between Flanders and other implementation sites in a standardised way, and it will provide knowledge support for developers to find mappings between data models and implement data interoperability solutions.

Improve the usability for data consumers to use onboarded data from the data space

Once the two objectives outlined in the previous paragraphs are achieved, all necessary building blocks will be in place for facilitating cross-border use cases. To lower the threshold for data consumers, an additional low code or no code interface will be developed to further simplify access for data consumers without technical skills. Two research questions have been defined for analysis by data space consumers using data from the data space:

- The first research question centres on comparing Sustainable Urban Mobility Indicators (SUMI) across different implementation sites. The SUMI framework will provide a set of universally applicable metrics, allowing for the direct comparison of mobility in different implementation sites, thereby fostering a unified understanding of urban mobility trends in different cities or regions. The definition of SUMI will come with an Implementing Act of the TEN-T Regulation, planned for May/June 2025. Once these are final, Flanders aims to calculate and compare certain indicators (i.e., modal split, emissions, traffic noise levels) between the Flemish region and at least one other implementation site automatically, using the traffic counting data that is made available by this implementation site. This is thus a service that the Flanders site wants to develop for the partnering implementation site, and by extension (in the ideal scenario) every participant that offers a traffic counts data product to the data space.
- The second research question explores the potential of the transfer learning technique. Initially, a model will be trained on Flemish traffic counts for analysis and prediction. Subsequently, the model will be transferred to a different region, such as Barcelona, where data may be less abundant or not entirely equivalent in terms of completeness, terminology, quality, or granularity. This scenario showcases an advanced application of the interlinking layer, utilising it not only for data harmonisation but also as an important component enabling transfer learning across different countries and regions via semantic equivalence.

[9] https://dssc.eu/space/BBE/178422433/Specifications+-+Data+Models

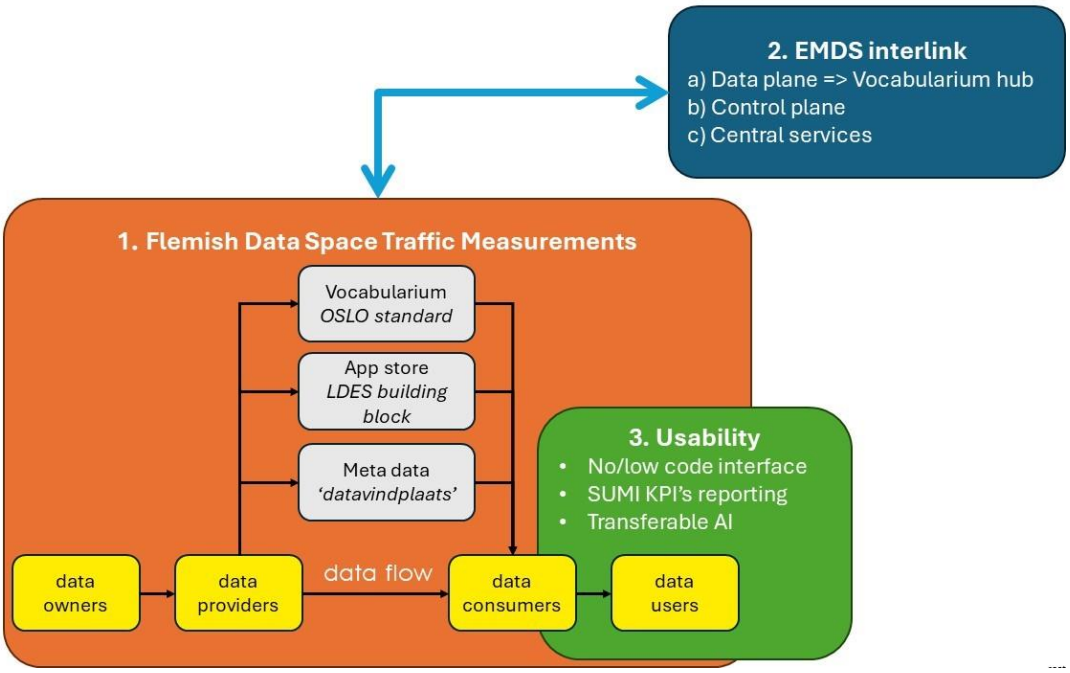

Figure 2 – Overview of the Use Case System in the ideal pathway scenario

2.4.2 Alternate pathways to implementation

As an initial step towards achieving the preferred flow, an alternative pathway involves directly onboarding the data from other implementation sites into the VSDS traffic measurements data space, before the connection with the deployEMDS data space is established. This will enable data exchange between Flanders and other implementation sites (by use of the vocabulary hub), enabling data consumers to analyse the data. Once the interlinking layer is established, the alternate pathway can be converted to the ideal pathway. It is worth noting that some Flemish data owners, who already participate in the VSDS traffic measurements data space, possess international traffic measurement data. This means that cross-border data is already incorporated within the VSDS traffic measurements data space and that the alternate pathway is already established, but not for data products that are listed in the WP2 D2.1 deliverable on technical requirements.

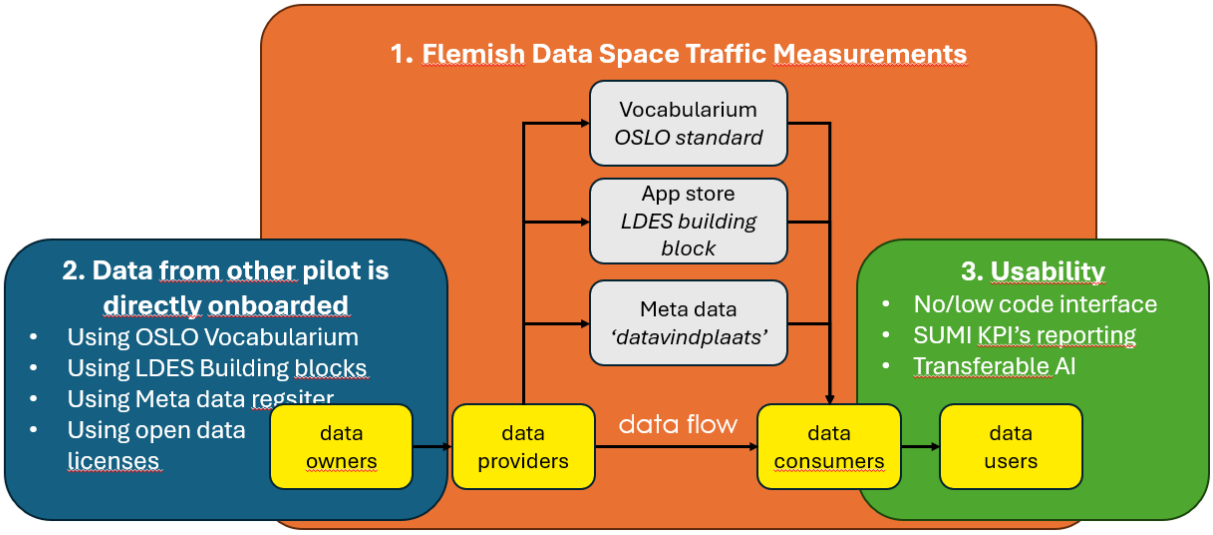

Figure 3 – Overview of the Use Case System in the alternate pathway scenario

2.4.3 Additional pathways to amend the use case implementation

Additional traffic measurement data sources from Flanders and other regions across Europe, including other deployEMDS implementation sites, can be added to Flanders' data product Fl.DPO.01.01 (see D2.1 deliverable).

2.5 Primary use case implementation products

The following sections define the primary use case product or the minimal viable product design, to be implemented in the first iteration of the implementation project.

2.5.1 Description of the primary use case product (MVP)

The Primary Use Case Product will combine three main products developed to reach the three defined objectives. Below the products are described per objective, similar to in section 2.4.1.

VSDS traffic measurements data space

The following products will be rolled out:

- Governance and ecosystems: a clear governance charter agreed by all participants
- Metadata: a central participation register with a metadata catalogue based on DCAT-AP
- Functional interface: Semantic data model that is available in a vocabulary hub
- Technical interface: building blocks that are certified to re-use at onboardings of individual data publishers and consumers.

The further rollout will involve onboarding 10 data publishers that will provide traffic measurements using the same semantics and technical interface. The data streams can be consulted in a participation register under a defined license.

Interlink with EMDS

Integration with EMDS and other possibly federated regional or local data spaces will be required on three levels:

- The data plane level
- The control plane level
- The central services

To support the interlinking, Flanders aims to develop a vocabulary hub. This Hub will be designed as a backbone for semantic interoperability across the data space, facilitating seamless data sharing and discovery without the constraints of traditional data cataloguing and exchange protocols. At its core, the vocabulary hub is a platform designed to bridge the semantic gaps between diverse (mobility) data ecosystems across Europe. In this use case, it leverages the power of linked data through LDES to provide a dynamic, trustworthy registry of vocabularies and semantics for a specific set of data. This product will be developed in close collaboration with WP2. The vocabulary hub will have the following capabilities:

- **Unified Data Semantics Repository**: The Hub serves as a repository where data semantics and vocabularies from the traffic measurements can be accessed, compared, and utilised, ensuring that data shared across borders is understandable and usable. The Dutch and English OSLO Traffic measurements standard will be adopted as a first test case.
- **Provenance and Traceability**: With built-in versioning and auditing capabilities, the Hub provides an immutable history of vocabulary versions, enhancing the trustworthiness and reliability of the (meta)data that is shared.
- **Simplified Data Discovery and Integration**: The Hub simplifies the process of discovering and integrating data across disparate systems by providing a common framework for semantic equivalence. This minimises the need for extensive technical adjustments when incorporating data from different sources.
- **Cross-Data Space Interoperability**: Designed to be agnostic of specific data space protocols, the vocabulary hub should seamlessly operate within IDS data spaces, Fiware environments, or even as a standalone service[10]. Its modular interfaces allow for native queries and updates, as well as compatibility with foreign data plane protocols.

Improve the usability for data consumers to use onboarded data from the data space
Within a user-friendly interface, non-technical users (e.g., traffic engineers) will be able to analyse and visualise the data products that are offered in the data space. The products for this third component are the following:

- **Data consumer pipeline:** This component includes a general data consumer pipeline that uses the processes, technologies and vocabulary of the VSDS traffic measurements data space[11]. It is implemented as a transferable product so that it can easily be re-used by other data consumers in the ecosystem.
- **User interface for non-tech users:** A proof of concept for a no-code or low-code user interface will be developed for non-technical users. This includes a web application that demonstrates the integration of the different data streams as an integrated service. It also allows to illustrate the integration of cross-border datasets for analysing traffic measurements. As this user interface will visualise urban sensor data, it can be the first step towards a digital twin. In the subsequent implementation product, this step could be prospected further.

[10] See D2.1 deliverable for an overview of data space protocol implementations for the vocabulary hub capability.
[11] https://informatievlaanderen.github.io/VSDS-Tech-Docs/

- Both products will enable consumers to download traffic measurements from Flanders and other implementation sites, to address the two research objectives described above (SUMI and ML).

2.5.2 Steps of the primary use case implementation

Step 1: VSDS traffic measurements data space (DV)

This step involves rolling out the VSDS traffic measurements data space:

- In a first phase, the four components of governance and ecosystems, metadata, functional interface and technical interface will be designed and developed.
- In a second phase, the data space will be rolled out by onboarding 10 different data publishers and setting up the central services.

Step 2: Interlink EMDS (imec)

This step involves the interlinking of the VSDS traffic measurements data space with EMDS by developing a vocabulary hub. The following figure provides a preliminary list of milestones.

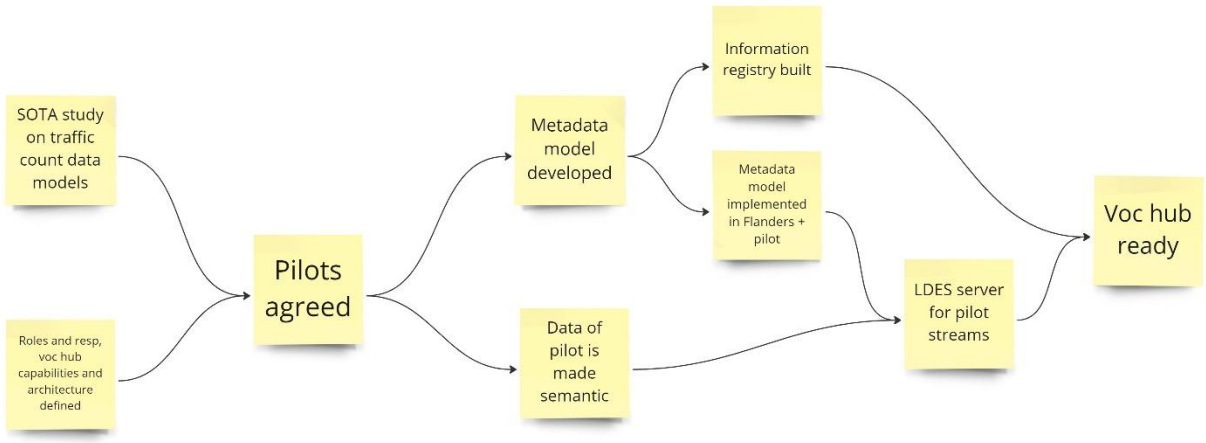

Figure 4 – Overview of the development sequence of the vocabulary hub

Step 3: Easy-to-use interface (imec)

This comprises the four steps defined above:

- Data client component with database (Digitaal Vlaanderen)
- User interface for non-technical users (Digitaal Vlaanderen)
- SUMI research question (imec)
- Transfer learning research question (imec)

2.5.3 Participants in the primary use case product

2.5.3.1 Data providers

Data provider 1: **VSDS traffic measurements data space**

Type of organisation: Governmental agency (Digitaal Vlaanderen)
Project partner: Yes

Data product 1A **Fl.DPO.01.01 – Multimodal Traffic Counts Flanders**

Data type: Static (Statistical)
Access: Open
Conditions: No specific conditions, and no access control in MVP

Components:	Data Sources/ Data Points	Data Model/Specification
	Permanent traffic measurements motorway	OSLO/DCAT-AP
	Permanent bicycle countings Flanders	OSLO/DCAT-AP
	Temporary traffic countings by geomobility	OSLO/DCAT-AP
	Temporary speed smileys by Krycer	OSLO/DCAT-AP
	Permanent Bike countings by Signco	OSLO/DCAT-AP
	Citizen science traffic measurements	OSLO/DCAT-AP
	Smart camera measurements	OSLO/DCAT-AP
	Traffic counting by Geosparc	OSLO/DCAT-AP
	Traffic measurements by city of Kortrijk	OSLO/DCAT-AP

2.5.3.2 Data intermediaries

The FLA_01 use case may include an intermediary service to allow the federation/interlinkage of the VSDS traffic measurements data space with EMDS, dependent on the overall EMDS architecture and federation structure.

2.5.3.3 Data consumers

Several consumers will participate in the data space for the FLA_01 use case:

- The research groups or service providers that do the analysis for the two research questions that are described above (SUMI and transfer learning).
- The goal of the no code or low code interface is to enable as many consumers as possible to use and visualise the data. The target groups here are mostly cities, and more specifically their traffic managers.

2.6 Subsequent implementation products

The following section outlines (potential) subsequent implementation products that may be introduced in subsequent iterations of the local implementation project.

The further upscaling of the VSDS traffic measurements data space will involve the following potential additions:

- Additional data sources can be directly onboarded and published in the region of Flanders
- Additional data sources can be directly onboarded and published outside the region of Flanders

- Additional data sources can be directly onboarded and published outside of Belgium
- Additional data sources can become available through the EMDS framework
- Additional data types: besides traffic measurements, other traffic data e.g., junction counts, origin-destination data, floating car data, and user-generated data can be onboarded to the data space.

Additionally, it can be analysed if and how the no code or low code interface can be extended to a digital twin.

3 Initial reflections on Detailed Implementation Plan - Part B for use case FLA_01

The next step is to design roadmaps for all three aspects of the primary use case implementation product. An initial attempt has already been made (see for example Figure 4), but this needs further refining.

4 Conclusions

This report provides a detailed understanding of the local context of Flanders and summarises the objective, scope and preliminary implementation approach of FLA_01, as envisioned and proposed by the local project consortium of the Flanders implementation site.

The contextual information outlined in Part A of the Detailed Implementation Plan for each of the nine implementation sites offers a comprehensive understanding of the local projects for all consortium members and interested external parties. In combination with the ideation and elaboration process carried out by the respective local project consortia leading up to this refined summary of the use cases, these reports establish a clear agenda for deployEMDS to address in the upcoming months.

To pave the way for the Detailed Implementation Plan – Part B series, which will outline in detail the project plans for the EMDS deployment within (local use cases) and across (transversal use cases) the nine implementation sites, the following factors have been identified as particularly challenging and will be addressed by autumn 2024:

- **The lack of clarity in conceptualising the common EMDS**
  The prevailing heterogeneity among the Implementation Plans - Part A largely stems from the lack of clarity surrounding the EMDS concept and the technical possibilities offered by the European data-sharing framework. While some implementation sites, experienced in decentralised data sharing within mobility or other locally significant sectors, view their use cases as facilitated by this common data-sharing framework, others see the EMDS as an auxiliary tool. In these instances, the relevant data sets for the use cases are made available, but without an immediate need for data space components. This question closely relates to the missing European or cross-border harmonisation dimension of the deployEMDS use cases as outlined in Deliverable D2.1 describing the technical requirements. This will be addressed during the development of the transversal use case frameworks in WP4 and the project's strategic alignment process. Alignment with SIMPL, the Data Spaces Support Centre (DSSC) and other sectorial data space deployment actions will support this process.

- **The challenge of sustaining the common EMDS beyond the project lifespan**
  The use case products proposed by local implementation sites do not merely pilot actions but rather address real-world mobility challenges sustainably. This underscores the need to ensure the sustainability of the implemented data exchange solutions beyond the project end. However, implementation sites may hesitate to fully embrace the EMDS as the facilitating data-sharing framework for their use case products due to uncertainties regarding its long-term viability and pathway. This is exacerbated by the overall ambiguity surrounding the EMDS conceptualisation. To tackle this issue, the strategic alignment process and WP3 on governance will define development scenarios for the EMDS beyond the project end, taking into account initiatives such as the EMDS technical support study funded under CEF.

- **The missing or unclear link between the EMDS and existing common mobility data frameworks**
  The greatly varying levels of awareness for European (mobility) data legislation among local and regional stakeholders leads to a missing or unclear link between deployEMDS use cases and existing frameworks like the National Access Points (NAPs) mandated under the ITS Directive. Several data sets required for the use cases are already published in the NAPs by mandate of the MMTIS and RTTI delegated regulations. However, uncertainty surrounding the connection to the NAPs exists and is reinforced by the overall lack of clarity regarding conceptualising the common EMDS. The collaboration effort with NAPCORE (the National Access Point coordination effort), coordinated within WP3 of the action, will identify how these missing links can be established to ensure complementarity.

- **The lack of understanding regarding the capabilities of data space components and technical governance to tackle data-sharing challenges**
  The use cases proposed by the nine implementation sites tackle real-world mobility challenges that can be addressed with data-driven solutions or data-enriched products. Many data-sharing challenges for these use cases could be resolved with technologies less powerful than a data space but the scaling of these solutions cross-border is potentially limited without a truly European framework. The question of technological choice and refining local use cases for EMDS deployment while ensuring their real-world relevance to the co-funding cities, regions, and project partners will be addressed through the strategic alignment process within WP4, WP2 on technical infrastructure, and WP3 on governance. Further workshops and trainings will provide a better understanding of data space components and their concrete application in specific future-oriented use cases, especially for scalable data sharing ecosystems and sharing of non-public data where trust and compliance by design may play an important role.

In summary, both the reports and the elaboration process of the Detailed Implementation Plans - Part A have yielded valuable insights for strategic alignment in deployEMDS. Specifically, this report offers a clear and comprehensive initial description of the approach for the local implementation project in Flanders and the eight other sites across Europe. By autumn 2024, the Detailed Implementation Plan - Part B series will detail the final use case definitions and the detailed steps for their implementation, marking the first step toward deploying common infrastructure, governance and use cases as part of the common European mobility data space.