

A SPACE FOR DATA

WRITTEN BY
THOMAS GEIER

Explore the concept of Data Spaces and their role in the **European Mobility Data Space** (EMDS), driving innovation, trust, and data sharing across sectors. Uncover the state of play of EMDS, its benefits for local authorities, and the potential it holds for reshaping data management and collaboration in the mobility ecosystem.

The Data Space concept is a central component of the EU's Digital Europe Strategy to enable innovation and development through better data and more data sharing throughout the economy. With the development of the European Mobility Data Space (EMDS) underway, the concept is becoming a hot topic in the mobility policy debate.

Just another platform? – Data spaces compared to existing platforms and ecosystems

A data space is a federated data ecosystem. This means that data generally remains with the data owner and is not transferred to a central database or data lake as is often the case in contemporary data sharing ecosystems and platforms. Rather, the data space ensures that data that exists within the realm of participating organisations becomes findable using a catalogue function.

Central to the concept of data spaces is the notion of data sovereignty, where one retains control over one's data even when it is shared with others. Data owners are enabled to state clear conditions and usage terms for their data.

These conditions may vary between different data (re)users: a public authority may act on different conditions to access data of mobility service providers than a competing commercial mobility app provider that re-sells transport services to end users.

The sharing of data requires trust and data spaces create such a trust framework through strict identity management. The identity of each data provider, intermediary and data user participating in the data space is known and validated. The validated identities also lead to an assurance of the quality of the data made available in the data space, as poor quality or wrongly described data sets will have an impact on an organisation's reputation.

There is a clear understanding of the provenance of data and a detailed accounting of how data is accessed and (re)used by participants, enabling a technical usage control mechanism that enforces the conditions set by data owners and in turn increases trust.

One of the most important aspects of a data space is the use of common semantics. Data must be trusted to show what it is described to show and must become interoperable across organisations.

The development of common European data spaces is thus also an investment in the standardisation of (meta)data, that will eventually allow for better collaboration within sectors, greater cross-sector understanding and fairer competition in the market of software and data services, as the use of proprietary data standards and vendor lock-in is reduced.



How far is this development? — The state of play of the European Mobility Data Space

Currently, several preparation projects are underway within different sectorial domains, including tourism, smart communities and agriculture. The mobility data space preparatory action, titled PrepDSpace4Mobility, was finalised in October 2023 and delivered a vast inventory of currently active data ecosystems related to logistics, personal mobility and infrastructure. This inventory was the basis for the investigation of the functions - referred to as building blocks - that are considered sector-specific to the mobility data space.

In addition to the sector-specific workstreams, two horizontal actions focus on overarching aspects common to all data spaces: The Data Spaces Support Centre (DSSC) looks at building blocks that are necessary in all sectorial data spaces, for example, the identification and trust framework or smart contract mechanisms. The SIMPL project prepares the development of the technical infrastructure components that will allow organisations to connect to data spaces. Ideally, these horizontal efforts will enable interoperability and collaboration across sectors.

All of these actions play into the deployment of the European Mobility Data Space. A large next step will be taken by a first deployment project - deployEMDS which is co-funded by the EU and will deploy the mobility data space framework with local, regional and transport authorities in nine regions across Europe.

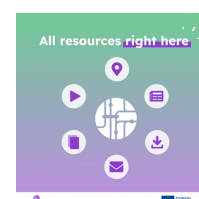
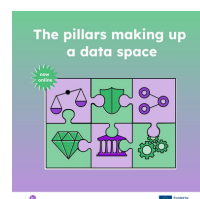
So, what is in it for local authorities? — Expected benefits of the European Mobility Data Space

The potential benefits of the mobility data space concept on local and regional authorities are at least two-fold: On the one hand, the overall framework and common semantics for data management that is brought about by the data spaces concept will act as a guide to local and regional authorities with regards to their data capabilities and data related aspects in their contracting and procurement. Data management may become less ambiguous and the use of proprietary data systems that are expensive, stifle development and create dependencies on specific suppliers is reduced.

Secondly, exchanging meaningful data and information becomes easier, less complex and cheaper. As data is findable and accessible under user-specific conditions, authorities can make use of their public sector status and access data that is of value for planning and regulatory purposes but is currently not accessible due to concerns of commercial sensitivity. Like any participant in the data space, local authorities would be able to identify the users of their data and better collaborate with organisations that deliver public policy outcomes.

The use cases that may be facilitated by the trusted sharing of data by sovereign data owners are countless and the nature of the data space as a generic infrastructure is expected to spark innovations through combinations of data and services.

LinkedIn posts promoting the work on the EMDS, PrepDSpace4Mobility
PrepDSpace4Mobility





For authorities, the reporting of mobility data, like the actual usage of car-sharing or micromobility vehicles in a city to inform planning, regulation and licencing of operators, but also the active push of regulation in machine-readable formats to influence drivers, like speed limits, urban vehicle access regulations (UVARs) or dynamic allocation of public space to parking, delivery vehicles, market stands or restaurant terraces may be an interesting use case. For transport authorities, the most interesting use case may be the opening of ticketing and sales channels to third parties, and the integration of mobility services into a public transport-driven Mobility as a Service application.

The data space concept promises all of that without the need for a central — and thus controversial and expensive — platform and yet still ensuring that the organisations that bear the real-world risks and responsibilities remain sovereign over their data and the conditions for its use by others without limiting data access per se.