

The European Mobility Data Space: Towards a common digital infrastructure

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In an era where data is expected to fuel efficiency and innovation, **Europe's ability to optimise local and cross-border mobility hinges on unlocking data silos**. Currently, the reluctance for data sharing across the continent reflects many challenges, namely missing visibility and discoverability of data, limited harmonisation and interoperability, as well as important gaps between data supply and demand.

The European Commission's initiative on the **European Mobility Data Space (EMDS)** paints a promising picture for mobility and logistics processes. If implemented carefully, the EMDS could bring a new era of efficiency, interoperability, and trust in data sharing. The goal is a democratic, transparent system, minimising digital monopolies and maximising societal benefits. This system would streamline data accessibility, enhance transparency, and allow equitable participation in value creation.

It could empower citizens, local authorities and companies to strengthen their digital sovereignty by using open-source data space components that are compliant and secure by design.

But how would such a pan-European data space look like in practice?.

Decentralised data sharing based on common rules

A practical application of principles such as fairness, trust and data sovereignty can be realised in a common EMDS. As opposed to monopolising informational content and governance power[1], the idea is to build a democratic and transparent organisational structure that allows increased collective benefit from mobility data:

- Information asymmetries will be limited by **improved discoverability** of data and transparency of logged transactions.
- Free data production and loss of control can be mitigated by digital tools to enforce usage policies and monetise data to allow for **fair shares in value-creation**.



- Transaction and search costs (“economies of speed”) can be lowered by creating a **one-stop-shop for mobility data** in Europe. Interoperability avoids fragmentation of the data economy and lowers integration costs.
- Finally, data spaces allow **multi-sided transactions** and business models without typical power concentration seen in big multi-sided platforms.

The core of a data space is its **decentralised setup**. This means that a neutral trustee provides a minimum set of central services to data space participants and an orchestrator manages a set of federated services provided by different parties in the ecosystem. Central services form an important basis for trust, as they typically include the provision of **common identity and authentication mechanisms** for participating entities. Another important aspect is ensuring discoverability through a **metadata catalogue** modelling the data sources that can be made available via decentralised transactions in the ecosystem.

The challenges ahead

The report prepared by the [preparatory action supporting the EMDS initiative](#) revealed several challenges. The lack of awareness on the conceptual and technical foundations of data spaces raises questions about stakeholder preparedness. This, coupled with uncertainties about the future technical landscape of data spaces, means that we need a strong **blueprint and guidelines at European level**.

The operational and governance landscape of the EMDS remains in flux, with multiple scenarios ranging from a European Commission-driven initiative to a purely regulatory or certification framework. We believe that any chosen path must **prioritise the long-term sustainability of the EMDS** while ensuring adequate representation across mobility sub-sectors and geographies. Stakeholder consultations further revealed expectations on a **strong operational role** for the EMDS, at least at the beginning, to kick-start cross-border use cases and focus on specific interoperability challenges.

A cohesive EMDS framework

1- Addressing technical requirements:

It is not just about sharing data, but about how it is shared. Ensuring data quality uniformity and supporting standardisation is crucial. But alternative ways of sharing data, beyond open data, are increasingly important for stakeholders (e.g. sharing algorithms instead of raw data, or event-driven transfer of selected information in logistics and travel chains). This goes **beyond the role of National Access Points**, securing not only abundant, but also fully usable data, based on real-life implementations and requirements.



2- Funding model:

Creating a sustainable funding model is key. A successful EMDS creates value-added centred around data sovereignty and trust. To cater to the needs of the mobility and logistics sector, the model should ensure **simple onboarding processes**, especially for SMEs and startups. The EMDS requires stable funding commitment from the European Commission or the Member States.

3- Governance:

The backbone of the EMDS is its governance. Leveraging on existing frameworks and building on experiences of data spaces can provide a solid start. Aligning with a data space blueprint in the making[2], relevant to all sectoral data spaces, would provide cohesion across all EMDS governance frameworks. Regular update of the EMDS governance and technical framework is key, taking on board feedback from members and use cases.

4- Legal considerations:

The intertwining of technology and law demands comprehensive guidance. Stakeholders voiced concerns over complexity and require support in navigating new horizontal and sectoral legislation. Supporting privacy norms, respecting intellectual property rights, ensuring competition law adherence, and information security need to be transposed into technical concepts to ensure compliance-by-design.

Looking ahead

The vision for EMDS is clear: create an environment that prioritises interoperability, trust, and value-driven data sharing. On 1 November 2023, a new project started with 9 cities & regions across Europe to deploy common EMDS infrastructure and governance mechanisms, reinforcing critical digital capabilities of 45 partners and creating new services for mobility planners and citizens.[3]

[1] Kirstein (2023), "Mobility data as a commons – towards a common mobility data infrastructure", <https://fsr.eu.eu/mobility-data-as-a-commons-towards-a-common-mobility-data-infrastructure/>

[2] See <https://dssc.eu/space/News/blog/184156176/Data+Spaces+Support+Centre%3A+Blueprint+v0.5+is+out>

[3] See <https://erticonetwork.com/deployemds-kicks-off-to-build-the-european-mobility-data-space/> . .

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