eMOTIONAL Cities

Mapping the cities through the senses of those who make them

# Strategies for Accessible and Reusable Data


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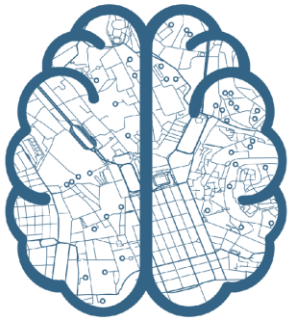
## Key-messages/Summary


FAIR (Findable, Accessible, Interoperable, Reusable) data principles provide a robust framework for enhancing data management, sharing, and use across organisations and different fields. By ensuring that data is discoverable, usable, and reliable for a wide array of applications, these principles help maximize data's value. Drawing on the experience of the eMOTIONAL Cities project, this policy brief highlights the significance of implementing FAIR data principles and offers actionable recommendations for policymakers.



**EMOTIONAL CITIES POLICY BRIEF**



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## Introduction

Effective data management is critical for informed decision-making in sectors such as urban planning or health care. However, many organisations struggle with challenges that are related to data not being FAIR:

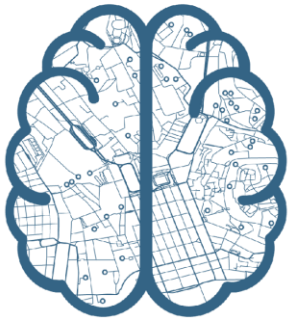
- **Data silos:** Isolated datasets compromise collaboration and the creation of comprehensive data analysis.
- **Limited data accessibility:** Proprietary or undocumented formats make data difficult to access.
- **Lack of interoperability:** Integration of different datasets is difficult when Standards are not used.
- **Missed opportunities for reuse of data:** Poor or incomplete metadata and the lack of a clear license reduce the likehood that data will be reused in the future.

Adopting FAIR principles ensures data is optimally managed to overcome these challenges. The following section describes how we applied the FAIR principles in the context of the eMOTIONAL Cities project Spatial Data Infrastructure.



## Strategies for Accessible and Reusable Data

- Findable: *Data should be easily discoverable using standardized identifiers and descriptive metadata.* In the eMOTIONAL Cities project, we have described the data with rich metadata in a geospatial catalogue, which is



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indexed in the Zenodo data repository.

- Accessible: *Data should be retrievable using open Standards with clear access conditions.* In the eMOTIONAL Cities project, every dataset has a public metadata record, which contains all the links to access the data in different Standard formats.
- Interoperable: *Data should use standardized formats and vocabularies to enable integration across platforms and domains.* In the eMOTIONAL Cities project, we adopted relevant Industry Standards for data and metadata (e.g.: OGC, W3C).
- Reusable: *Data should have clear licensing and provenance information, enabling proper attribution and reuse*. In the eMOTIONAL Cities project, datasets are published under a clear and accessible data usage license (e.g.: CC BY-NC 4) and metadata contains provenance information, which can be contacted in case of need.



## Policy Recommendations

- **Adopt Global Standards**: Promote the use of internationally recognized geospatial standards, such as those developed by the Open Geospatial Consortium (OGC) or the International Organization for Standardization (ISO).
- **Develop National Frameworks**: Establish or update national geospatial data policies to align with global standards.

- **Raise Awareness**: Conduct awareness campaigns and training programs to familiarize stakeholders with FAIR principles and to equip them with the skills needed to implement them.
- **Support Open Data Initiatives**: Encourage open data policies to make standardized geospatial data publicly available, fostering transparency and innovation, and incentivizing compliance to Standards.
- **Prioritise the use of Free and Open Source Software (FOSS)**: Besides offering significant advantages in terms of cost-effectiveness, transparency, adaptability, and innovation, FOSS often adheres to international open standards, which facilitate the creation of FAIR data.

## Conclusions

Adopting robust geospatial standards, alongside well-maintained metadata catalogues, is vital for realizing the full potential of Spatial Data Infrastructures. By adhering to international frameworks (e.g., OGC, ISO) and investing in thorough metadata creation, organizations can significantly boost data discoverability, interoperability, and reuse. Strengthening capacity-building initiatives and aligning policy frameworks with these best practices will foster a more interconnected, FAIR-aligned geospatial ecosystem.