

Objectives

BE OPEN aims to promote OS in transport research and assist in regulating and standardizing it. The overarching vision of BE OPEN is to create a common understanding on the practical impact of OS and to identify and put in place the mechanisms to make it a reality in transport research. Achieving Open Access to publications, making their underlying data FAIR and open where possible, and using open and collaborative processes and infrastructure via the EOSC are key factors in making transportation researchers share-reuse-reproduce science and in bringing such a critical sector closer to the society for enabling open innovation and citizen science. Openness, transparency, fairness, reproducibility of science are key aspects around which BE OPEN seek to establish the ground rules for the transport research communities, ultimately establishing a community of transport research organizations willing to work on the basis of a commonly agreed “Open Science Code of Conduct”. To this end, BE OPEN has brought on board key transport and OS related communities in a two-fold action plan: to engage them in a participatory approach fostering a dialogue on OS (what exists, what should be done, how it should be done) among relevant stakeholders in Europe and around the world, and to develop a detailed roadmap for the implementation of sustainable OS modules which include key practices, infrastructures, policies and business models, all taking into account the specificities of the transport research domain, and the use and integration of existing-infrastructures and the emerging EOSC initiative.

Method

The overall BE OPEN methodology follows a systematic implementation solution (Figure 1) that depicts the different activities implemented for fostering OS in transport research as well as the interrelations among them. BE OPEN initially determined proper clusters of key actors in transport research and produced “Open Science” terminology. A framework to enable a common understanding of all stakeholders has been developed realising the use of OS in the transport domain and providing focused objectives and needs of the key categories of actors. It gathered common principles, definitions and technical data for enhancing the movement to make scientific research accessible and produced proper methodologies to optimize the effectiveness of “Open Science” actions studying best practices and effective modern technologies. Moreover, an inventory of OS resources (research outcomes, services and research data infrastructures) has been developed providing detailed information of Open resources opportunities for all transport modes (i.e. road, rail, water, air) and setting the basis for analysing the existing OS services and research data infrastructures (with special focus on the EOSC).

Results

The main results of the BE OPEN project are the production of a systematic taxonomy of key actors, a unified transport terminology and related research and investigation instruments as well as a framework of common understanding of OS in transport research, which provides a structured definition of general transport context facilitating the general framing of scientific researches and analysing their practices and expectations in implementing OS in transport research. In addition, relevant use cases affecting current and future trends and related industrial developments in the transport arena were identified, described and classified. A mapping of open access publications, policy and repository in European transport research were conducted and the use of Open data and software as well as the existence of business models for infrastructure of OS were reviewed. The challenges and opportunities for aligning transport research with EOSC were summarized and the knowledge on OS in transport research for the future by proposing governance model for OS in European transport research was prepared. The TOPOS forum and observatory was successfully developed and the corresponding membership and governance scheme was created in an attempt to describe how TOPOS and the aforementioned schemes should be implemented and assessed.

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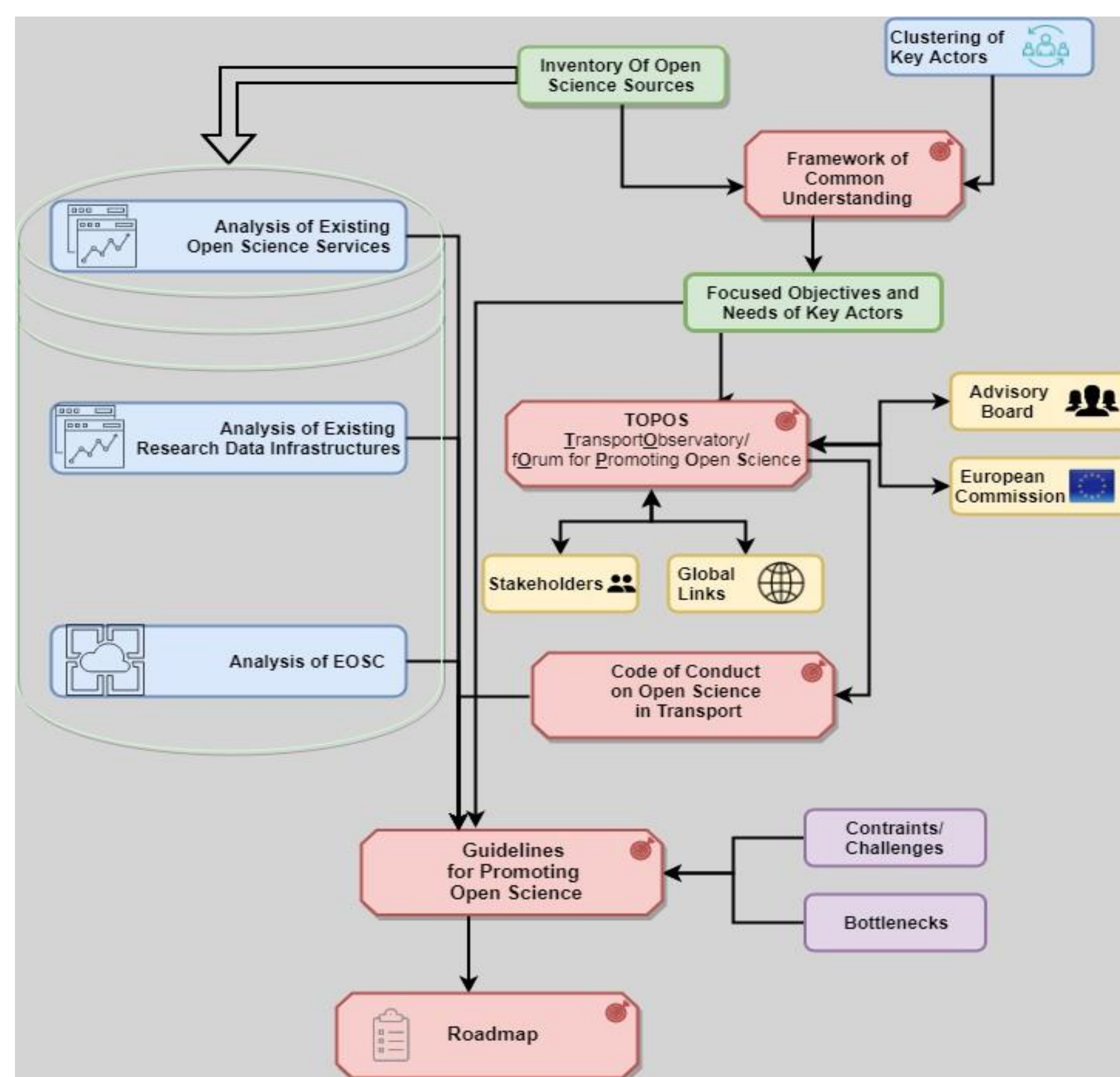


Figure 1: BE OPEN Methodology

Conclusions

Overall, this research initiative could deal with behavioural issues and user needs by i) providing objectives and priorities of the spectrum of stakeholders, ii) developing governance and new operational/business models for enhancing OS and iii) describing the rationale of how to create and capture value in economic and social context. In addition, it offers appropriate regulatory frameworks and policies to support innovation and deployment i.e., the European Code of Conduct on OS in transport research, and proper guidelines that allow setting up a community of transport research organizations which will work on the basis of a commonly agreed roadmap making transport research more efficient and more responsive to societal and economic expectations. Finally, it engages international stakeholders for mutual learning and sharing experiences for operationalizing OS principles in transport research. Regarding the challenges and opportunities in the COVID-19 era, the aspects of the BE OPEN project may be examined with the aim to address issues and priorities that have emerged as a result of it in the transport sector, and assess the role of OS in addressing them. As noted in previous reports, including a recent one by the Organization for Economic Co-operation and Development [5], experience so far underscores the importance of sharing data and publications to combat the many issues created by the disease, and this message needs to become clearer at a policy level, to expedite the process of removing barriers and bottlenecks in OS.