European forum and oBsesrvatory for OPEN science in transport

EuroCRIS, 2019

20.11.2019, Münster

« Open Science in transport: stakeholders involved and their areas of interest, main gaps and opportunities to overcome »

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Duration: 30 months
Start Date: 01-01-2019

Call: H2020-MG-2018-SingleStage-INEA
Type of Action: Coordination and Support Action
GA Number: 824323

Overall Budget: € 1,997,283.75
EU Contribution: € 1,997,283.75
BE OPEN partners

✔ 17 partners
✔ 8 third parties
✔ 8 Work Packages
✔ 32 Deliverables

(Third Parties)
BE OPEN Objectives:

- to promote Open Science in transport research
- assist in regulating and standardizing
- create a common understanding
- identify and put in place the mechanisms
- Transport Observatory / fOrum for Promoting Open Science.

Promote, regulate and standardise Open Science (OS) in Transport

What are we aiming at?

- Develop a framework of common understanding of OS in transport
- Map existing OS resources
- Facilitate an evidence-based dialogue to promote and establish OS in transport
- Provide policy framework and guidance for OS implementation in transport
- Engage a broad range of stakeholders in a participatory process for OS uptake
EXPECTED IMPACTS (1/2)

01 TOPOS forum and observatory tool will contribute to creating a solid knowledge base on the implementation of Open Science approach in transport research

02 Governance and new operational/business models will be developed for enhancing Open Science by describing the rationale of how to create and capture value in economic and social context

03 The European Code of Conduct on Open Science in transport will be developed proposing recommendations and proper guidelines that allow setting up a community of transport research organizations
EXPECTED IMPACTS (2/2)

04

Awareness and visibility (authorities, Industrial and SMEs Associations in Transport, Publishing Companies, and the various European Technology Platforms, and strong media coverage) will be created

05

International stakeholders will be engaged in mutual learning and sharing experiences
WP 1 Focused Objectives of Key Actors

- Task 1.1 Clustering of Key Actors
- Task 1.2 Open Science Framework, terminology and instruments
- Task 1.3 Stakeholders' needs and objectives
# T1.1 Analysis of main actors involved

<table>
<thead>
<tr>
<th>6 competence areas</th>
<th>Research of scientific resources</th>
<th>Analysis of three main actors’ categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Modelling area</td>
<td>Original research data</td>
<td>Industry</td>
</tr>
<tr>
<td>Environmental area</td>
<td>Operational data directly related to research</td>
<td>Research</td>
</tr>
<tr>
<td>Legal/Regulatory area</td>
<td>Data from published transport research</td>
<td>Public authorities</td>
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<td>Socio-economic area</td>
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<td>Technological area</td>
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<tr>
<td>Transport planning area</td>
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</tbody>
</table>
Main findings (6)

Transport planning area

Most influencing actors
- Public authorities
- Transport networks
- Policy makers

Research question trends

From:
- Traffic congestion
- Emissions reduction and safety increase

Towards:
- Accessibility
- Smart city planning
- Network efficiency
- Interoperability within modes
- Integrated and resilient transport systems
- Risk analysis and management
T1.2 Open Science framework, terminology and instruments

- Connect transport modes, stakeholders and competence areas to extrapolate the main challenges to be addressed by the framework structure

- List Open Science main challenges, analyses transport sector stakeholders experience and proposes a framework
Approach
# Interrelation of Stakeholders

<table>
<thead>
<tr>
<th>Competence area</th>
<th>Primary stakeholder</th>
<th>Secondary stakeholders</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legal/ Regulatory</td>
<td>Policy makers, public authorities</td>
<td>Research centres, universities</td>
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<tr>
<td></td>
<td>Transport networks, commercial transport &amp; logistics</td>
<td></td>
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<tr>
<td>Technological</td>
<td>Research centres, universities</td>
<td>Transport network, policy makers</td>
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<td></td>
<td>Commercial transport, logistics industry</td>
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<td></td>
<td>Transport network, policy makers</td>
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</tr>
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<td>Transport planning</td>
<td>Public authorities, transport networks, policy makers</td>
<td>Commercial transport &amp; logistics</td>
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<tr>
<td></td>
<td></td>
<td>Research centres &amp; universities.</td>
</tr>
<tr>
<td>Business modelling</td>
<td>Policy maker, public authority, transport networks, Commercial transport &amp; logistics</td>
<td>Research centres &amp; universities</td>
</tr>
<tr>
<td>Socio-economic</td>
<td>Public authorities, commercial transport, logistics &amp; transport network</td>
<td>Transport network</td>
</tr>
<tr>
<td>Environmental</td>
<td>Research centres &amp; universities</td>
<td>NGOs &amp; community organizations</td>
</tr>
<tr>
<td></td>
<td>Public authorities, commercial transport, logistics &amp; policy makers</td>
<td>Citizens</td>
</tr>
</tbody>
</table>
Survey – Stakeholder-centered Study

I see Open Data / Open Science as an opportunity in precompetitive research

I feel that there are no limitations to use Open Data or Open Science

My organization would benefit from using Open Data / Open Science

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree
Challenges

- Data **fragmentation**, **large datasets** and lack of data **quality** and **security**
- Lack of:
  - technological framework (standards, etc.)
  - skilled experts
- Large variety of stakeholders, privacy principles
- Legal framework is insufficient

→ Establish **common understanding** among all stakeholders
→ Provide a common **technical framework**
→ develop appropriate **funding mechanisms**
Framework

Framework structure

- Policy
- Dissemination
- Financial models
- Support & services
- Training
- Data protection
- Guidelines
Metrics

- Metrics help us to **identify the areas** where **changes** need to be done
  - Altimetrics – research indicators based on social media
  - Bibliometrics – citation and content analyses

- **Need for Next Generation Metrics**
  - Reflecting transparency, diversity and reflexivity
## Challenges & Opportunities

<table>
<thead>
<tr>
<th>Identified Challenge</th>
<th>Framework Topics</th>
<th>Opportunities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fragmented data &amp; large variety of stakeholders:</strong></td>
<td>Policy and Guidelines, Dissemination of Open Science in transport research data</td>
<td>Research Data Alliance (RDA)/ RDA Europe 4 Transport fOrum/ Observatory for Promoting Open Science - TOPOS Implementation Roadmap for the European Science Cloud – Communication European Cloud FREYA V-Advance</td>
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<tr>
<td><strong>Data quality</strong></td>
<td>Explicit guidelines</td>
<td>EU ODP EUROSTAT FAIR European Commission Open Research Publishing Platform TRIMIS</td>
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<tr>
<td><strong>Enhancing data security &amp; privacy</strong></td>
<td>Data protection and security</td>
<td>Cyber security framework EOSCPilot</td>
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<td>Technological challenge</td>
<td>Support and research services</td>
<td>Transport Research Cloud (TRC)</td>
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<td>eInfraCentral</td>
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<td>Next generation repository</td>
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<td>FREYA</td>
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<td>EOSC-Hub</td>
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<td>OpenAIRE-Advanced</td>
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<td>GO-BUILD – coordinating FAIR technology</td>
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<tr>
<td>Lack of skilled experts</td>
<td>Training requirements</td>
<td>GO-Train, European Skills and Qualifications Matrix for Open Science. FOSTER Plus</td>
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<tr>
<td>Legal challenges</td>
<td>Policy</td>
<td>Policy development to create common understanding</td>
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<td>EOSC Pilot</td>
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<td>Open Science Policy Platform</td>
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<td>GO CHANGE</td>
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<td>Funding</td>
<td>Financial schemes</td>
<td>EC initiative to support Open Science</td>
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