

## European forum and oBsErvatory for OPEN science in transport

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## D3.4 Strategy for pan-European diffusion and global links

Final

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| <b>Author name(s):</b>                          | Adewole Adesiyun (FEHRL), Caroline Almeras (ECTRI), Hilia Boris Iglesia (UITP), Vilma Jasiūnienė (VILNIUS TECH), Rita Kleizienė (VILNIUS TECH), Lucile Mendoza (HUMANIST), Ana Pereira (ECTRI), Christos Petrou (EATEO), Veronika Prändl-Zika (AIT), Peter Saleh (AIT), Celestino Sánchez (EURNEX) |
| <b>Reviewer(s):</b>                             | Rudolf Cholava (ECTRI/CDV)<br>Anja Fleten Nielsen (TØI)  |
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## Abbreviations and Terminology

|            |   |
|------------|---|
| ACARE      | Advisory Council for Aeronautics Research in Europe                     |
| ALICE      | Alliance for Logistics Innovation through Collaboration in Europe       |
| ARTEMIS    | ARTEMIS Industry Association  |
| BEST       | Board of European students of technology                                |
| CEDR       | Conference of European Directors of Roads                               |
| EARPA      | European Automotive Research Partners Association                       |
| EARTO      | European Association of Universities in Marine Technology               |
| EATEO      | European Association of Aviation Training and Educational Organisations |
| ECIU       | The European Consortium of Innovative Universities                      |
| ECTP       | European Construction Technology Platform                               |
| ECTRI      | European Conference of Transport Research Institutes                    |
| EOSC       | European Open Science Cloud   |
| EUA        | European university association   |
| ERRAC      | European Rail Research Advisory Council                                 |
| ERTRAC     | European Road Transport Research Advisory Council                       |
| EURNEX     | EUropean rail Research Network of Excellence                            |
| FEHRL      | Forum of European National Highway Research Laboratories                |
| FERSI      | Forum of European Road Safety Research Institutes                       |
| FIRM       | FEHRL Infrastructure Research Meeting                                   |
| HUMANIST   | HUMANIST VCE  |
| IM         | Infrastructure manager  |
| PIARC      | World Road Association  |
| POLIS      | Network of cities and regions for transport innovation                  |
| MaaS       | Mobility as a Service   |
| RI         | Research Infrastructure   |
| SEFI       | European society for engineering education                              |
| TEN-T      | Trans-European Transport Network  |
| TOPOS      | Transport Observatory/fOrum for Promoting Open Science                  |
| UNIV-TECH  | European university of technology                                       |
| WATERBORNE | European Research and Innovation Platform for Waterborne Industries     |
| WEGEMT     | European Association of Universities in Marine Technology               |



## Executive summary

The objective of the BE OPEN project is to create a common understanding on the practical impact of Open Science and to identify and put in place the mechanisms to make it a reality in transport research.

The deliverable D3.4 (Strategy for pan-European diffusion and global links) is produced within Work Package 3 (Open Access in Transport Observatory and Forum) of the BE OPEN project under Task 3.4 (Strategy for pan-European diffusion and global links). The purpose of this deliverable is to propose a strategy that will empower relevant stakeholders to use TOPOS observatory and forum to achieve improved efficiency, quality, and integrity, speed up the path from research to innovation and promote citizen's engagement in the scientific process.

The deliverable is organised in 6 chapters:

Chapter 1 is an introductory chapter presenting the aim and objective of the deliverable.

Chapter 2 describes the methodology used in the report based on the diffusion of innovation theory.

Chapter 3 presents the innovation (TOPOS Observatory and Forum).

Chapter 4 describes the communication strategy proposed in rolling out TOPOS to transport research stakeholders.

Chapter 5 gives an overview of the early adopters of TOPOS and their role in influencing other stakeholders.

Chapter 6 provides the conclusions and recommendations for future activities in the diffusion process.

# 1. Introduction

The core objectives of TOPOS Observatory and Forum are focused on addressing existing barriers in Open Science in transport research and aligning transport research with EOSC by following FAIR principles. By identifying applied development strategies, operation and services offered from existing Transport RIs and EOSC, TOPOS schemes and services aim to offer a stakeholder-driven governance with the active involvement of transport research organizations/institutions, transport infrastructures and e-infrastructures, transport research funding bodies and other relevant players (relent research communities, authorities and any other body dealing with transport-related data).

The goal of this deliverable is to develop a strategy to increase the cooperation and integration between public and private sector to facilitate Open Science in transport research. The main goal is for the TOPOS observatory and forum tools to become the leading European initiatives that empower research and industry communities to develop Open Science solutions following the EOSC challenges and work based on a commonly agreed Open Science Code of Conduct. The strategy proposed in this deliverable will empower relevant stakeholders to use TOPOS observatory and forum to achieve improved efficiency, quality, and integrity, speed up the path from research to innovation and promote citizen's engagement in the scientific process.

In developing this strategy, the authors have used the diffusion of innovation theory developed by Everett Rogers [1], which defines diffusion as the process by which an innovation is communicated over time among a social system. In line with this, the deliverable presents an overview of the innovation (TOPOS Observatory and Forum) and the communication tools/channels needed to spread its usage among transport research stakeholders (the social system). The report also describes the proposed timeframe necessary to make this happen. The role of stakeholders e.g., the transport research umbrella associations, as early adopters, is also described. The deliverable ends with specific recommendations on the steps that need to be taken to achieve the objectives described above.

## 2. Methodology

Diffusion of innovations is a theory that seeks to explain how, why, and at what rate new ideas and technology spread<sup>1</sup>. The methodology used in this deliverable is based on the diffusion of research as described by Everett Rogers [1]. In the book, Diffusion of Innovation, four elements were highlighted as crucial:

- Innovation
- Communication channels
- Time
- Social systems

In other words, for the purpose of this deliverable, diffusion is the process by which the TOPOS Observatory and Forum is communicated over time among transport research stakeholders.

All these elements are essential to achieving the goal of making TOPOS become the leading European initiative that empower research and industry communities to develop Open Science solutions.

BEOPEN diffusion strategy will focus on highlighting the benefits of TOPOS to transport research stakeholders through various communication channels at different times through the support of transport community adopters. We will identify which communication channels/tools are suitable for specific stakeholders.

The 'social systems' here denote understanding how the transport research stakeholders are built, how they react to innovation, who the key players are that most likely will first adopt TOPOS and how these players influence others.

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<sup>1</sup> [https://en.wikipedia.org/wiki/Diffusion\\_of\\_innovations#cite\\_note-15](https://en.wikipedia.org/wiki/Diffusion_of_innovations#cite_note-15)

## 3. TOPOS Observatory and Forum

Transport researchers are a part of a broad research ecosystem where open science has already started taking roots, with policies, best practices, and infrastructures in place. The BEOPEN project is providing the tools to foster such an evidence-based discussion and cross-fertilization of ideas amongst researchers in transport on the national, European, and global scene.

This tool, TOPOS (Transport Observatory/fOrum for Promoting Open Science), has been designed and developed by a collaborative effort from key partners in transport research promoting territorial and cross border cooperation.

TOPOS has two major components:

- TOPOS observatory which aims to showcase the status and progress of open science uptake in transport research.
- TOPOS forum which captures and presents the common culture and practices of data stewardship in transport research.

### 3.1. Objectives of TOPOS

The main objective of the TOPOS Observatory and Forum is to limit existing barriers in Open Science in Transport Research and aligning transport research with EOSC by following FAIR (Findable, Accessible, Interoperable, Reusable) principles. In more detail, the tools provide to the users advance search on open transportation data. The user may, not only find open data on specific topic but also information about the source and the owner of the data. On the other hand, a user may share publicly transportation data (and make them open) and gain advantages from e.g., new collaborations.

By identifying applied development strategies, operation and services offered from existing Transport RIs and EOSC, TOPOS schemes and services aim to offer a stakeholder-driven governance with the active involvement of transport research organizations/institutions, transport infrastructures and e-infrastructures, transport research funding bodies and other relevant players (research communities, authorities, and any other body dealing with transport-related data).

TOPOS Observatory and Forum will contribute to creating a solid knowledge base on the implementation of Open Science approach in transport research.

### 3.2. TOPOS Observatory

TOPOS Observatory aims to showcase the status and progress of open science uptake in transport research. It focuses on promoting territorial and cross border cooperation and contributing to the optimization of open science in transport research. Based on the groups of users, the TOPOS Observatory consists of two parts: TOPOS Observatory for Organisations and the TOPOS Observatory for Individuals.

#### 3.2.1. TOPOS Observatory for Organisations

The TOPOS Observatory for Organisations is realized with an Open Research Gateway for Transport Research based on the content available in the OpenAIRE Research Graph (Figure 1).

It serves three categories of organisations:

- Technology platforms like institutional, thematic repositories, data archives and disciplinary web sites.

- Research Organisations, public and private, like research centers, universities, small and medium enterprises that participate in research activities, and research projects.
- Public authorities like national and international research funding organisations.

The TOPOS Observatory for organisations offers a set of tools to support the implementation and monitoring of Open Science practices in the domain of transport research. The access to the observatory does not require login, although some of the functionality is available only to logged-in users.



Figure 1. TOPOS Observatory for Organisations' link to OpenAIRE

### 3.2.2. TOPOS Observatory for Individuals

The TOPOS Observatory for Individuals is based on the Scipedia platform. Scipedia is an open professional network where professors, students, scientists, researchers and professionals in science and technology can share and access knowledge, expertise, and the outcome of their work. Scipedia is focused on individual users from the science and technology areas that are looking for sharing information. These users can have different roles and permissions depending on their status: unregistered (not logged in)/anonymous users, guest users or registered users.



Figure 2. TOPOS Observatory for Individuals

### 3.3. TOPOS Forum

TOPOS Forum for national and European stakeholders – public and private - aims to exchange ideas and share best practices for operationalising Open Science principles in transport research.

There are 5 main categories in the Forum (Figure 3):

- Road - relevant to cars, trucks, busses, PTWs, etc.
- Air - relevant to helicopters, airplanes, jet aircrafts, etc.
- Rail - relevant to vehicles which run on tracks (trains, trams, etc.).
- Waterborne - relevant to boat, ship etc., over a body of water, such as a sea, ocean, lake, river, etc.
- Multimodal - the combination of different means of transport.

Each category contains the following subcategories:

- Legal/Regulatory - regulations, action plans, policy instruments, incentives etc.
- Technological - new technologies and innovative actions applied for technological improvements, processes automation etc.
- Transport planning - actions, plans and initiatives related to sustainable transport vision.
- Business modelling - actions and methods to earn revenues and achieve higher performance.
- Socioeconomic - actions, plans and initiatives for achieving higher finance, better accessibility, higher level of service etc.
- Environmental - actions, plans and initiatives to minimize pollutant emissions, greenhouse effect, noise pollution etc.

Registered users of the Forum among others can view/create/reply to a topic, can chat with another users, can view users' profile etc.

Guests i.e. unregistered users can view topics as well as view users' profile.

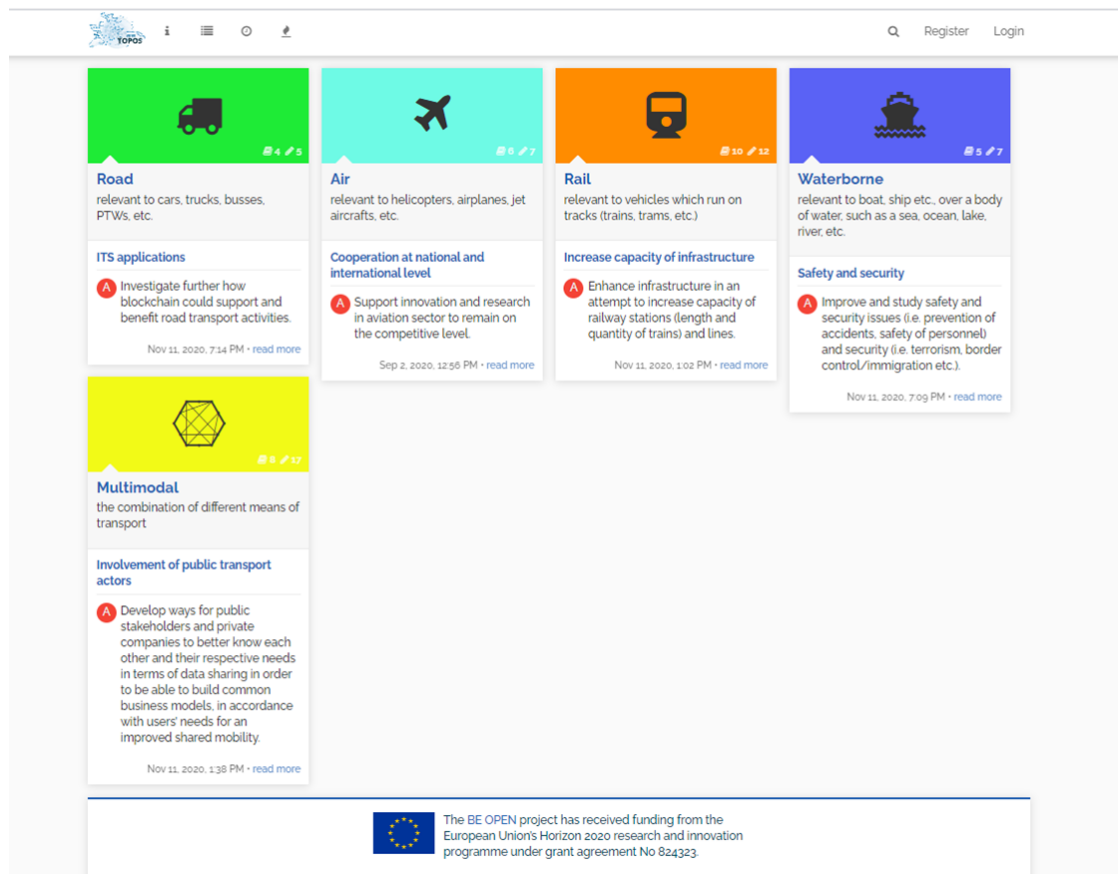


Figure 3. TOPOS Forum

## 3.4. Benefits for the Transport Community

### 3.4.1. Benefits for content providers

At the current state of the BE OPEN project a primary aim is that the TOPOS Observatory will be further enriched with research data, publications, open-source software etc. from the transport research community. Once a critical mass of research data (the term research data is used here as an umbrella term for research data, publications, software, etc.) is available in the field of transport, the full potential of TOPOS can be exploited by different user groups and will attract new (Europe-wide) user groups to make TOPOS a living platform for connected research. For this purpose, the benefits of and motivation for sharing all kinds of research data must be made explicit and targeted key messages were formulated (see chapter 4.2). The sharing of data within the research community opens-up big potential for researchers themselves:

- getting visibility and attention.
- getting a platform to discuss research results with a bigger community which will also ensure higher quality of data and therefore contribute to data integrity.
- being quoted.
- finding new scientific collaborations.
- creating new ideas for future projects.



### 3.4.2. Benefits for content consumers

The TOPOS Observatory will become a platform where many of the results in transport research originating from public funded projects will be easily findable and reusable for the research community. Consequently, the availability of all kinds of comparable transport data through one entry point will boost further research through newly combining different data sets, recognizing new research fields, and formulating of further open research questions.

As a result, using TOPOS as data platform will:

- facilitate state of the art research in transport by browsing the TOPOS Observatory therewith avoiding duplication of research efforts.
- support linking research results from similar research fields as well as from different areas and therewith creating synergies which were not obvious before.
- help in finding experts and specialists in specific areas for discussing results and conclusions, therewith widening scientific network.
- help in finding potential partners for future projects.
- help the business sector to find new collaborations with experts in their fields of interests.
- create new opportunities for data usage and exploitation.



## 4. TOPOS Communication Strategy

This section presents the communication strategy for the diffusion process of TOPOS, outlining the ways in which the project partners will communicate with different audiences. Awareness-raising, networking, and communicating with stakeholders are critical to ensuring a successful roll-out of TOPOS and the desired impact on the transport research community. Therefore, it is essential to plan efficient and timely activities focused on these aspects, in parallel to the core activities of the project.

The communication strategy consists of four steps which are described below (Figure 1). This strategy builds upon previous WP6 deliverables submitted by the BE OPEN consortium (see References), focusing on TOPOS specificities.

In the long term, it is recommended to revise and update this strategy to take advantage of new opportunities for dissemination of the project results and achievements to specific audience.

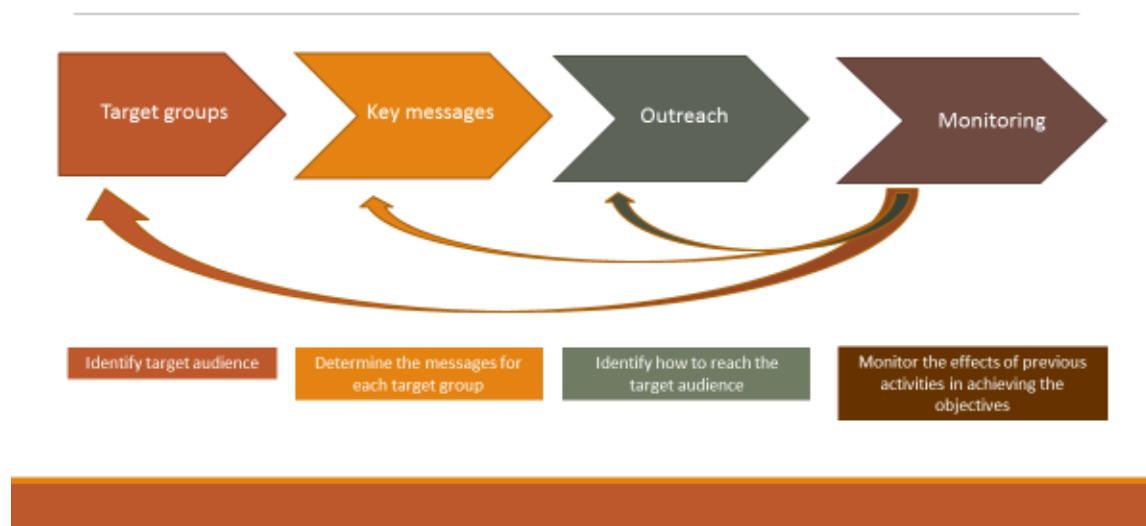


Figure 4. TOPOS communication strategy

### 4.1. Target Groups

The target audience for TOPOS will include research organisations, industry, policy makers, professors, scientists etc.



Figure 5. TOPOS target audience

Figure 5 depicts the target audience for TOPOS.

Legend

- Green-coloured audiences are the end users for the TOPOS Observatory organisations user group and the TOPOS Forum.  
They include:
  - ✓ Research organisations  
Public and private research centers, universities, small and medium enterprises that participate in research activities, and research projects.
  - ✓ Private companies  
Industries, including European Technology Platforms (ETPs).
  - ✓ Public authorities  
National and international research funding organisations.
  - ✓ Policy makers  
National and international
  - ✓ Publishers
- Purple-coloured audiences are end-users for the TOPOS Observatory individual user group and TOPOS Forum.

Target groups will be reached through the project partners and their involvement and engagement with various associations, organisations, as listed below:

- Industry and technology organizations
  - ✓ European Road Transport Research Advisory Council (ERTRAC).
  - ✓ European Rail Research Advisory Council (ERRAC).
  - ✓ European Research and Innovation Platform for Waterborne Industries (WATERBORNE).
  - ✓ Advisory Council for Aeronautics Research in Europe (ACARE).

- ✓ European construction technology platform (ECTP).
- ✓ Alliance for Logistics Innovation through Collaboration in Europe (ALICE).
- ✓ ARTEMIS Industry Association (ARTEMIS).
- Research and academia organizations
  - ✓ European Conference of Transport Research Institutes (ECTRI).
  - ✓ Forum of European National Highway Research Laboratories (FEHRL).
  - ✓ Forum of European Road Safety Research Institutes (FERSI).
  - ✓ European rail Research Network of Excellence (EURNEX).
  - ✓ European Association of Aviation Training and Educational Organisations (EATEO).
  - ✓ European Association of Universities in Marine Technology (WEGEMT).
  - ✓ European Association of Universities in Marine Technology (EARTO).
  - ✓ HUMANIST VCE.
  - ✓ European Automotive Research Partners Association (EARPA).
  - ✓ Research Council of EU states.
  - ✓ European university association (EUA).
  - ✓ European university of technology (UNIV-TECH).
  - ✓ The European Consortium of Innovative Universities (ECIU).
  - ✓ European society for engineering education (SEFI).
  - ✓ Board of European students of technology (BEST).
- National public authorities
  - ✓ Conference of European Directors of Roads (CEDR).
  - ✓ The ERANET initiative and TRIMIS and CORDIS tools.
  - ✓ National Agencies for Science, Innovation and Technology.

The Individual users of TOPOS tools are mostly defined [D3.1] as the members of research and academia organizations:

- Research Council of EU states.
- European university association (EUA).
- European university of technology (UNIV-TECH).
- The European Consortium of Innovative Universities (ECIU).
- European society for engineering education (SEFI).
- Board of European students of technology BEST.

## 4.2. Key Messages

Key messages for the target users have been defined (Appendix 1). The messages were developed based on the needs of these users. The target messages will be used in discussion and communication activities. They could also be used among others as headlines e.g., at the beginning of some writing about TOPOS, at the end of the writing, or near/close to the project logo, or separately in parenthesis in a flyer.

The key messages have been defined not only for the TOPOS Observatory and Forum but also for the BE OPEN project in general and the TOPOS Gateway which is a single-entry point for TOPOS Observatory for Organizations, TOPOS Observatory for Individuals and TOPOS Forum.

## 4.3. Outreach

The focus of the outreach is to ensure that TOPOS is widely communicated among the target audience at appropriate times. Two communication levels have been defined in the project (Table 1).

As the project is ending in June 2021, most of these actions should be seen as recommendations to be implemented after the project closure.

Table 1. Communication levels for TOPOS

| Communication levels | When                  | Purpose  | Communication tools  |
|----------------------|-----------------------|--|--|
| Level 1              | From M26 (Feb. 2021)  | Raise awareness among stakeholders, both within and outside BEOPEN, about TOPOS and its objectives | <ul style="list-style-type: none"> <li>• TOPOS Observatory and Forum Webinars               <ul style="list-style-type: none"> <li>✓ for BEOPEN partners                   <ul style="list-style-type: none"> <li>- Thursday, 21<sup>st</sup> Jan 2021</li> <li>- Thursday, 28<sup>th</sup> Jan 2021</li> </ul> </li> <li>✓ for external stakeholders                   <ul style="list-style-type: none"> <li>- Friday, 26<sup>th</sup> March 2021</li> </ul> </li> </ul> </li> <li>• TOPOS launch event/final BEOPEN event, 9<sup>th</sup> June 2021</li> <li>• Email contacts with stakeholders</li> <li>• Project website</li> <li>• Newsletter</li> <li>• Press releases</li> <li>• Umbrella organisations' events (see section 5)</li> <li>• Presentations at conferences (see section 4.3.6)</li> </ul> |
| Level 2              | From M28 (April 2021) | Promotion of TOPOS   | <ul style="list-style-type: none"> <li>• Workshops</li> <li>• Training</li> <li>• Presentations at conferences</li> <li>• Publications</li> <li>• Video</li> <li>• Social media</li> <li>• Search Engine Optimisation</li> <li>• Discussion in TOPOS FORUM</li> <li>• etc.</li> </ul>  |

An overview of tools/channels to be used to reach each category of stakeholders is described in Table 2 below while detailed descriptions are in sections 4.3.1 to 4.3.8.

Table 2. Overview of tools/channels

| Target audience        | Dissemination tools/channels   |                                       |
|------------------------|--|---------------------------------------|
| Research organisations | Workshops  |                                       |
|                        | Training   |                                       |
|                        | Presentations at conferences   | e.g., FIRM2021, TRA2022, EOSC events  |
|                        | Publications at journals/magazines                                   | e.g., FIRM Magazine                   |
|                        | Project newsletter   |                                       |
|                        | Press release  |                                       |
|                        | Project social media – Twitter and LinkedIn group                    |                                       |
|                        | Project website  |                                       |
|                        | Video  |                                       |
| Private companies      | Through memberships in relevant ETPs, associations and organisations |                                       |
|                        | Presentations at conferences   | e.g., FIRM2021, TRA2022               |
|                        | Publications at journals/magazines                                   | e.g., FIRM Magazine                   |
|                        | Newsletter   |                                       |
|                        | Social media - LinkedIn  |                                       |
|                        | Project website  |                                       |
| Public authority       | Presentations at conferences   | e.g., FIRM2021, TRA2022               |
|                        | Newsletter   |                                       |
|                        | Press release  |                                       |
| Policy makers          | Presentations at conferences   | e.g. TRA2022, TEN-T Days, EOSC events |
|                        | Newsletter   |                                       |
|                        | Press release  |                                       |
| Publishers             | Presentations at conferences   | e.g. TRA2022, TEN-T Days              |
|                        | Newsletter   |                                       |

|   |   |
|---|---|
|   | Press release   |
|   | Social media - LinkedIn   |
| Professors<br>Scientists<br>Researchers | All the tools/channels described for research organisations<br>Newsletter forwarded universities<br>Social media – LinkedIn<br>Presentations at conferences and seminars<br>User manual |
| Students                                | Liaison with EC projects targeting students e.g., TRAVISIONS 2022<br>and events targeting students e.g. YRS 2021  |
|   | Newsletter<br>User manual   |
| Citizens                                | Video   |
|   | Press release   |

#### 4.3.1. TOPOS Logo

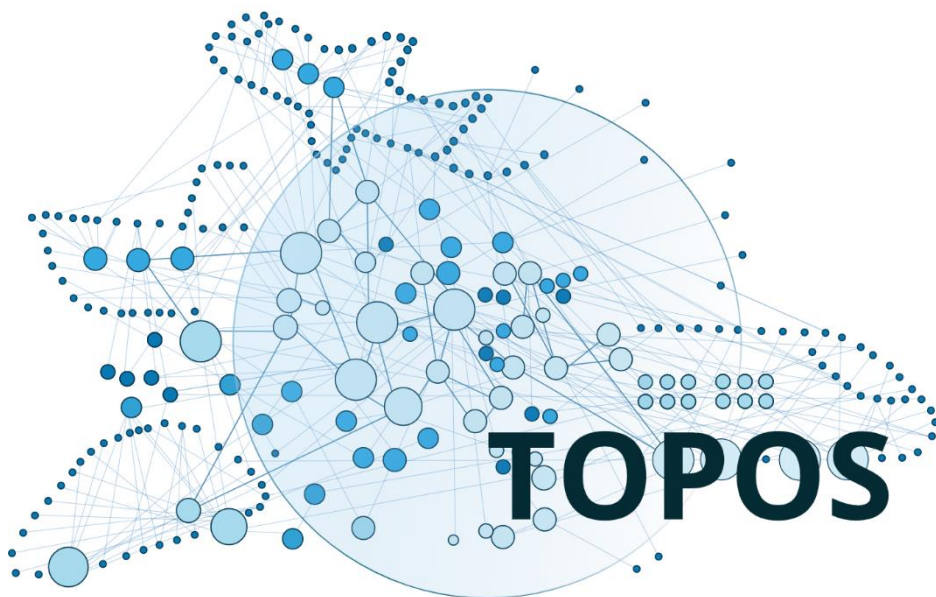


Figure 6. TOPOS logo

While having its own identity, the TOPOS logo keeps a strong link to the BE OPEN/mother-project.

### 4.3.2. TOPOS Gateway

The TOPOS Gateway has been developed to become the TOPOS Observatory for Organizations, TOPOS Observatory for Individuals and TOPOS Forum.

The domain “topos-observatory.eu” was registered to incorporate the different subdomains of the project as follows:

- <https://www.topos-observatory.eu/>  
TOPOS Gateway containing information about TOPOS Observatory (for Organisations and for Individuals) and TOPOS Forum
- <http://openaire.topos-observatory.eu/>  
Redirection to openAIRE platform
- <http://scipedia.topos-observatory.eu/>  
Redirection to Scipedia platform
- <http://forum.topos-observatory.eu/>  
TOPOS Forum

TOPOS Gateway has been developed as an installation of Joomla. Joomla CMS (content management system) is an open-source software, designed to present information to the end user. The use of this CMS provides advanced flexibility on modifications and easier maintenance.

Figure 7 shows the main page of the TOPOS Gateway where the TOPOS Observatory for Organisations (OpenAIRE) and the TOPOS Observatory for Individuals (Scipedia) have been directly linked.

Furthermore, TOPOS Forum may be directly accessed from the main page of TOPOS Gateway too. The main menu (top menu on the web site) of the TOPOS Gateway provides further information about BE OPEN project, OpenAIRE platform, Scipedia platform and the TOPOS Forum.

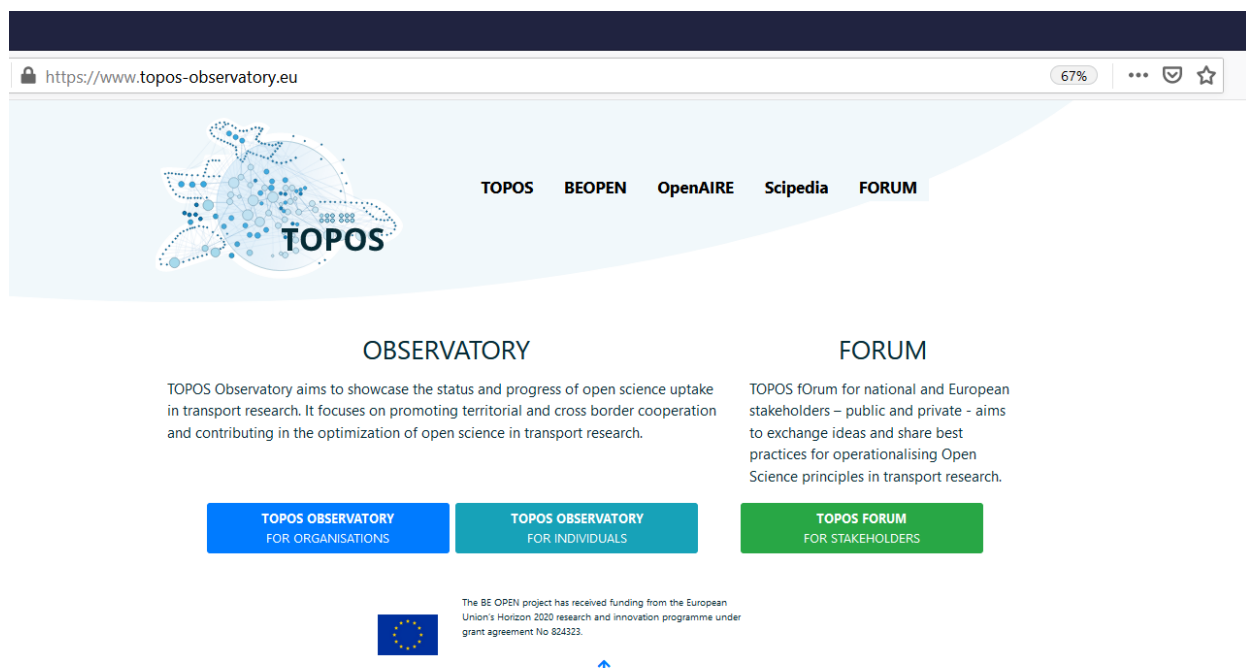


Figure 7. TOPOS Gateway

### 4.3.3. Newsletter

The BE OPEN newsletters will be used throughout the project duration to present and promote TOPOS. These will also be circulated via the project partners especially to the transport research associations.

### 4.3.4. Press Release

A press release will be released at the launching of the TOPOS Observatory and Forum to inform the members of the media about this innovation in transport research.

### 4.3.5. Publications at journals / research magazines

Articles on TOPOS will be published at various journals and research magazines.

Some examples are:

- FEHRL Infrastructure Research Magazine (FIRM), Issue 17, June/July 2021.
- The Nordic Road & Transport Research.
- Etc.

### 4.3.6. Presentation at events

BEOPEN project partners have identified transport related international conferences, workshops etc where TOPOS could be presented. Such presentations will be in the form of oral presentations, posters, etc.

Table 3. List of transport related events

| Transport mode | Event name  | Periodicity      | Organizer                           |
|----------------|---|------------------|-------------------------------------|
| Road           | PIARC World Road Congress   | every four years | PIARC                               |
|                | FIRM (FEHRL Infrastructure Road Meeting)  | Biennial         | FEHRL                               |
|                | H2020RTR European Conference (Results from Road Transport Research in H2020 projects) | Annual           | ERTRAC – EGVI – European Commission |
|                | ECTP (European Construction Technology Platform) Conference                           | Biennial         | ECTP                                |
|                | International Conference on Driver Distraction and Inattention                        | Biennial         | UGE/SAFER                           |
| Air            | Worldwide Air Transport Conference  | Annual           | ICAO                                |



|   |   |           |   |
|---|---|-----------|---|
|   | International conference on air transportation and civil aviation | Annual    | World academy on science engineering and technology |
|   | European aviation conference                                      | Annual    | Heilbronn University of Applied Sciences            |
|   | International conference for research in Air Transportation       | Biennial  | Federal Aviation Administration & Eurocontrol       |
| Rail  | World Congress of Rail Research                                   | Biennial  | Different rail stakeholders                         |
|   | International Railway Symposium                                   | Biennial  | RWTH Aachen   |
|   | International Railway Summit                                      | Annual    | UIC   |
|   | Innotrans   | Biennial  | Messe Berlin  |
| Waterborne (Maritime)                             | WEGEMT Executive Board meeting                                    | Annual    | WEGEMT (internal)                                   |
|   | STAB&S 2021   | Biannual  | Maritime Safety Research Centre (UoS)               |
| Multimodal (Public transport and shared mobility) | ECTRI General Assembly and Webinar/Workshop                       | Biannual  | ECTRI (internal event)                              |
|   | POLIS Conference  | Annual    | POLIS   |
|   | Global Public Transport Summit                                    | Biannual  | UITP  |
| All transport modes                               | Transport Research Arena TRA (and TRAVISIONS)                     | Biennial  | European Commission and other stakeholders          |
|   | Transportation Research Board (TRB)                               | Annual    | National Academy of Sciences                        |
|   | European Transport Conference                                     | Biennial  | Association for European Transport                  |
|   | TEN-T Days  | Biennial  | European Commission and host country                |
|   | HUMANIST Conference   | Bi-annual | HUMANIST  |
|   | Mobility event  | Annual    | TØI   |
| Non transport related events                      | EU DataViz 2021 Conference<br>23-24 November 2021                 | -         | European Commission                                 |
|   | Open Science Conference   | Annual    | Leibniz Research Alliance Open Science              |

#### 4.3.7. Video

The BE OPEN partners have produced a video presenting TOPOS as the project's main output, describing its functionalities and expected societal impact. This is covered by Deliverable D6.5 and delivered in June 2021.

The TOPOS Observatory and Forum Webinar recording (held on the 26<sup>th</sup> of March 2021), will also be available as tutorial resource.

#### 4.3.8. User manuals

User manuals have been developed to complement the essential information about the TOPOS gateway, its features, and services.

#### 4.3.9. Acknowledgement of EU funding

As BEOPEN is funded by the European Union, all dissemination, communication and publication materials regarding TOPOS must clearly acknowledge EU funding through the display of the EU flag and the following text referring to Horizon 2020 [12]:

"This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 824323".

A disclaimer will also be inserted stating:

"This document reflects only the views of the author(s). Neither the Innovation and Networks Executive Agency (INEA) nor the European Commission is in any way responsible for any use that may be made of the information it contains."

### 4.4. Monitoring

#### 4.4.1. Objective

The main objective of monitoring and evaluation of the dissemination activities is to ensure a high-quality project diffusion strategy execution. It is important that this assessment is carried out on a continuous basis to ensure:

- An effective impact assessment and update or redefinition of communication activities,
- Ensure the quality of the communication activities carried out.

It is recommended that monitoring and evaluation is carried out biannually.

#### 4.4.2. Communication activities & key performance indicators

To measure the impact of the activities and success of the dissemination strategy, the consortium set a TOPOS diffusion action plan with a series of quantified key performance indicators (KPIs) for monitoring progress and results.

Table 4 presents details of the planned communication activities and the linked key performance indicators (KPIs) for the different types of activities. The diffusion action reporting has to be done by regular postings in social media.

Table 4. Communication activities and the linked key performance indicators (KPIs)

| Activities |   | Key performance indicators   | Diffusion action   |
|------------|---|--|--|
| Level 1    | Development and implementation of TOPOS   | <a href="#">TOPOS Gateway</a><br><a href="#">TOPOS Observatory for Organisations</a><br><a href="#">TOPOS Observatory for Individuals</a><br><a href="#">TOPOS Forum</a> | N/A  |
|            | Production of user manuals for TOPOS  | 1 user manual for TOPOS Observatory for Organisations<br>1 user manual for TOPOS Observatory for Individuals<br>1 user manual for TOPOS Forum                            | Dissemination through BEOPEN partners  |
|            | Presentation of TOPOS (virtual F2F)   | 2 internal webinars  | Dissemination through BEOPEN partners  |
|            | Development of BE OPEN video, with focus on TOPOS   | 1 video  | N/A  |
| Level 2    | Raising awareness about TOPOS Observatory and Forum in social media                         | Regular postings and tweets on BEOPEN LinkedIn and Twitter pages   | Announcement in BE OPEN social media<br>Diffusion through partners' social media                               |
|            | Raising awareness about TOPOS via BE OPEN newsletter  | 1 invitation to TOPOS webinar<br>3 project newsletters including TOPOS news  | Announcement in social media and dissemination via partners' networks  |
|            | Raising awareness about TOPOS via partners and stakeholders' newsletters                    | All partners issuing newsletters<br>At least 2 external newsletters  | Announcement in social media and dissemination via partners' networks  |
|            | Presentation and promotion TOPOS (virtual F2F)  | 1 external webinar   | Dissemination through BEOPEN partners<br>Announcement in social media<br>Slides or recordings in TOPOS website |
|            | Promotion of TOPOS at umbrella organization events  | 1 event per umbrella organisation  | Announcement in social media and TOPOS webpage   |
|            | Presentation and promotion of TOPOS in scientific conferences and seminars                  | At least 4 conferences targeting the transport and/or open science community   | Announcement in social media and dissemination via partners' networks  |
|            | Promotion of targeted news items for scientists & experts via specialized press or magazine | At least 1 article   | Announcement in social media and dissemination via partners' networks  |

|  |  |  |  |
|--|--|--|--|
|  | Presentation and promotion of TOPOS at the BE OPEN final event | 1 open virtual event                                       | Announcement in BE OPEN and partners' social media<br>Announcement in open science and transport communities websites and social media (e.g. EOSC Secretariat, EC website)<br>Dissemination via partners' networks |
|  | Promotion of TOPOS via BEOPEN video                            | Target postings and tweets on BEOPEN and partners LinkedIn | Announcement in social media, broadcast at the final event and dissemination via partners' networks  |

## 5. The Transport Community Adopters

### 5.1. Introduction

The transport community is very diverse and a proper understanding of how each transport sector functions will play a major role in the success of diffusing TOPOS in the community. For example, one of the main challenges that could occur in adopting TOPOS in the rail and aviation sectors is derived from the structure of the sectors. Both sectors are typically dominated by large companies. Research and technical innovation have been very often carried out within the companies with rather loose links with other stakeholders and since the interest is solely commercial, open publication is typically not an option. On the other hand, for example, in aviation, research in the technological field is also carried in universities and research institutions but since the projects are mostly funded by the big manufacturing companies open results are limited. Lack of incentives to promote open science is another perceived challenge. In addition to this, the European open science landscape is diverse and includes numerous initiatives such as EOSC. This complexity and the sometimes hard to grasp relationships among different open science initiatives does not facilitate the involvement of interested stakeholders.

In this section, the early adopters of the TOPOS Observatory and Forum are presented alongside how these adopters can influence others in using TOPOS.

Transport research associations in the BEOPEN project (EATEO, ECTRI, EURNEX, FEHRL, HUMANIST, UITP, WEGEMT) will be at the fore front of promoting TOPOS to their members (stakeholders). Their specific roles will be to tackle the challenges related to their specific sectors as briefly discussed above as well as the issues that are cross sectoral. Some of these are highlighted in Table 5 (See BEOPEN D5.1 'Main challenges and opportunities, constraints, and bottlenecks of Open Science in transport research' for more details).

Table 5. Challenges, opportunities, and barriers of open science in transport sector (BEOPEN D5.1)

|             | Challenges   | Opportunities  | Barriers   |
|-------------|--|--|--|
| Researchers | <p><b><u>Technical challenges:</u></b></p> <ul style="list-style-type: none"> <li>• Expertise in data security and privacy</li> <li>• Expertise in data management</li> <li>• Expertise in open license practices</li> <li>• Expertise in database design and computer programming</li> </ul> <p><b><u>Data management:</u></b></p> <ul style="list-style-type: none"> <li>• Data quality</li> <li>• Data protection and security</li> <li>• Complex nature of transport data and information</li> </ul> | <p><b><u>Openly sharing their data:</u></b></p> <ul style="list-style-type: none"> <li>• More co-operations/contacts</li> <li>• Gain recognition</li> <li>• Co-authorship to other researchers' publications using their data</li> </ul> <p><b><u>Using of open data:</u></b></p> <ul style="list-style-type: none"> <li>• Accessibility to more data</li> <li>• More cross-disciplinary co-operations</li> <li>• New, original research results and products</li> </ul> | <p><b><u>Openly sharing their data:</u></b></p> <ul style="list-style-type: none"> <li>• Significant effort to produce dataset</li> <li>• Data protection and ethical restrictions</li> <li>• Concern to opening up to competitors</li> </ul> <p><b><u>Using of open data:</u></b></p> <ul style="list-style-type: none"> <li>• Insufficient documentation of the data</li> <li>• Not easy accessibility</li> <li>• Poor data quality</li> </ul> |

|  |   |  |  |
|--|---|--|--|
| Research Institutions                      | <ul style="list-style-type: none"> <li>• Legal restrictions (GDPR, privacy issues, IPR, etc.)</li> <li>• Contractual restrictions from other partners</li> <li>• Lack of skilled personnel</li> </ul> | <ul style="list-style-type: none"> <li>• Advance of the science in the transport field</li> <li>• Increased collaborations not only across institutional, national, and disciplinary boundaries</li> <li>• Increased collaboration between companies and research infrastructures</li> </ul> | <ul style="list-style-type: none"> <li>• Data ownership/IPR</li> <li>• Resources and organisational issues</li> <li>• Competition with other institutions</li> </ul>   |
| Public Transport Companies/ Organisations  | <ul style="list-style-type: none"> <li>• Data ownership conflicts</li> <li>• Data protection, privacy and ethical issues</li> <li>• Skilled personnel</li> </ul>                                      | <ul style="list-style-type: none"> <li>• Improve transport operations and performance</li> <li>• Foster data-based decisions</li> <li>• Transparency</li> </ul>  | <ul style="list-style-type: none"> <li>• Protection of commercial/ confidential data</li> <li>• Conflicts regarding ownership/IPR</li> <li>• Protection of personal data</li> </ul>  |
| Private Transport Companies/ Organisations | <ul style="list-style-type: none"> <li>• Data ownership conflicts</li> <li>• Data protection, privacy and ethical issues</li> <li>• Commercial competition</li> </ul>                                 | <ul style="list-style-type: none"> <li>• Reduce costs</li> <li>• Improve and align customer needs</li> <li>• Accessibility to more data</li> </ul>   | <ul style="list-style-type: none"> <li>• Conflicts regarding ownership/IPR</li> <li>• Protection of commercial/ confidential data</li> <li>• Protection of personal data</li> <li>• Limited financial resources</li> </ul> |

## 5.2. General adopters

### 5.2.1. TOPOS Board

The TOPOS Board will be set up and will consist of Member States, Associated countries & EC [D3.2]. The main roles of the TOPOS Board are to:

- Support in the development of the TOPOS roadmap and strategies, setting specific criteria per action.
- Monitor TOPOS achievements through a list of KPIs.
- Coordinate and cooperate with relevant initiatives and actors.
- Establish a top expert committee for searching suitable candidates for TOPOS Executive Board.
- Supervise the implementation of TOPOS.
- Support long term sustainability actions and decisions.

### 5.2.2. TOPOS Executive Board (EB)

The TOPOS Executive Board will be set up and will consist of stakeholder organizations from Europe and beyond [D3.2].

The main roles of the TOPOS Executive Board are as follows:

- Screen and map the needs per thematic area, transport mode, transport-related challenges.
- Connect with relevant initiatives and collaborate with them.

- Identify risks and design of mitigation actions.
- Assist on TOPOS coordination and advice on strategies and implementation.
- Meet goals, be proactive and effective.

### 5.2.3. TOPOS Stakeholders Forum

The TOPOS Stakeholders forum will be set up and will consist of members from primary and secondary stakeholders target groups as defined in Deliverable 4.4 of BE OPEN.

The primary stakeholders target group consists of:

- Research centers and Universities as well as some private researchers.
- Policy makers.
- Public authorities.
- Transport networks.
- Commercial transport and logistics industry players.
- NGOs and community organisations.
- Citizens.

The secondary stakeholders target group consists of:

- Publishing houses.
- Existing transversal associations.

The main roles of the TOPOS Stakeholders forum are to:

- Support the definition of Stakeholders needs in the frame of TOPOS implementation.
- Monitor the development of TOPOS following the defined needs.
- Support the update of Stakeholders needs through TOPOS lifetime in order that TOPOS goals remain aligned with Stakeholders needs.
- Support the dissemination of TOPOS existence to stakeholders.

### 5.2.4. Specific Mode Transport Adopters

As stated in the concluding chapter of BEOPEN deliverable D5.1, transport research should be proactive and support the principles of openness overcoming barriers of open science. One of the ways of doing this is to facilitate the uptake of the TOPOS Observatory and Forum amongst the relevant stakeholders.

In Everett Rogers [1], members of a social system can be classified based on innovativeness into five categories: innovators, early adopters, early majority, late majority, and laggards.

Wayne W. LaMorte [10] defined the categories as follows:

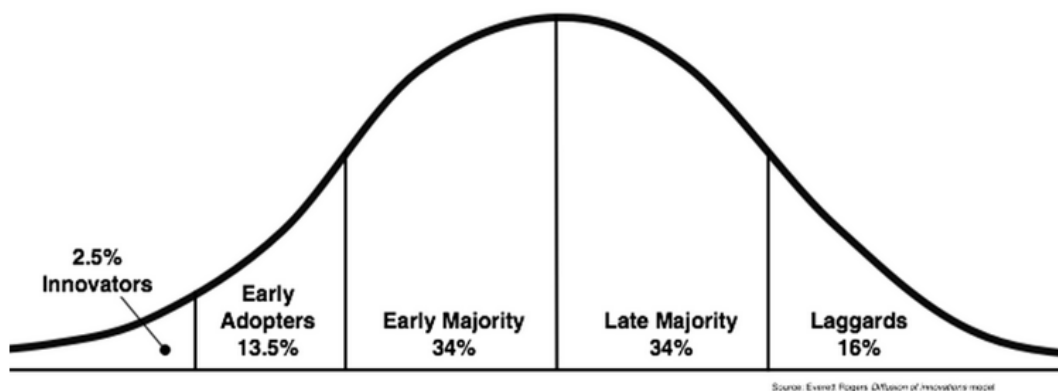
- Innovators – those that want to be the first to try the innovation. They need little or no motivation.
- Early Adopters – they are opinion leaders who are already aware of the need to change. To appeal to this category, communication channels/tools to use include how-to manuals and information sheets on implementation. They do not need information to convince them to change.
- Early Majority – they adopt new ideas before the average person but typically need to see evidence that the innovation works before they are willing to adopt it. Strategies to appeal to this population include success stories and evidence of the innovation's effectiveness.
- Late Majority – those in this category are skeptical of change. They would normally adopt an innovation only after majority in the social system have tried it. Strategies to appeal to this

population include information on how many other people have tried the innovation and have adopted it successfully.

- Laggards – people in this category are very conservative, very skeptical of change and the most difficult to convince to adopt an innovation. Strategies to bring them on board include statistics, fear appeals, and pressure from people in the other adopter groups.

In this report, the BEOPEN partners are termed the ‘innovators’ of the TOPOS Observatory and Forum.

As mentioned above, transport research associations in the BEOPEN project (EATEO, ECTRI, EURNEX, FEHRL, HUMANIST, UITP, WEGEMT) will be at the fore front of promoting TOPOS to their members (stakeholders). An overview of these associations’ promotional activities already carried out and planned are described in section 5.2.5.



Source: <http://blog.leanmonitor.com/early-adopters-allies-launching-product/>

Figure 8. Categories of innovativeness

Based on Figure 8, a very important aspect is to identify the early adopters of TOPOS, who as opinion leaders, will be able to influence others (the early majority, etc). The first step for the transport umbrella organisations is to target their efforts on this category:

- Identify within each mode of transport, early adopters of TOPOS. These would be organisations already engaged in and implementing open science principles. For example, universities and research centres as well as new third parties’ companies with a strong dependence of data processing. The incentives for third parties’ companies (e.g. MaaS operators, small companies offering specialized services to operators or IM, for participation in Open Science initiatives are straightforward since they may have difficulties to access data from operators and IM. Universities have typically promoted open science and especially open access to scientific publications. However, advantages of being involved in TOPOS may be counterbalanced if individual researchers need to make an additional effort.
- These early adopters should be provided with how-to manuals on TOPOS and information sheets on implementation.
- The early adopters should be empowered with the instruments to influence others e.g., setting up of Working Groups to address the challenges and barriers of open science. The early adopters will be better placed to explain the motivations and advantages of open science for the sector as a whole and for specific stakeholders within the mode.

This process must be carried out in each sector by the BISON umbrella associations.



### 5.2.5. Transport research associations' promotional activities

The transport research associations in the BEOPEN project (EATEO, ECTRI, EURNEX, FEHRL, HUMANIST, UITP, WEGEMT) have lined up several activities to promote TOPOS to their members. These are described below. Some activities have already been completed.

- FEHRL's promotional activities

Table 6. FEHRL's activities to promote TOPOS.

|       | Communication levels | When                  | Purpose  | Communication tools  |
|-------|----------------------|-----------------------|--|--|
| FEHRL | Level 1              | From M26 (Feb. 2021)  | Raise awareness among stakeholders, both within and outside BEOPEN, about TOPOS and its objectives | <ul style="list-style-type: none"> <li>• FEHRL members invited to fill in the BE OPEN TOPOS questionnaire on current state of the tool and suggestions for improvement.</li> <li>• OpenAire's article on BE OPEN/ TOPOS disseminated to FEHRL members' and other stakeholders.</li> </ul>  |
|       | Level 2              | From M28 (April 2021) | Promotion of TOPOS   | <ul style="list-style-type: none"> <li>• Invite FEHRL members, ETPs and the road sector to the TOPOS launch event/final BEOPEN event, 9<sup>th</sup> June 2021.</li> <li>• Publish post final conference news on FEHRL website, social media.</li> <li>• Publish news about TOPOS on FEHRL website, FEHRL newsletter and social media.</li> <li>• BE OPEN/TOPOS article to be published in FIRM Magazine, June 2021, Issue 17.</li> <li>• FEHRL's 3rd parties organised events at VILNIUS TECH Lithuania and AIT Austria.</li> <li>• Presentation of BE OPEN/TOPOS at FEHRL General Assembly, 21 - 22 June 2021.</li> <li>• Presentation at FEHRL's Research Coordinators' meeting, September 2021.</li> <li>• Presentation at FIRM 2021 (FEHRL Infrastructure Research Meeting 2021), 7 – 8 Dec 2021.</li> <li>• BE OPEN/TOPOS article to be published in FIRM Magazine, Dec 2021, Issue 18.</li> </ul> |

- ECTRI's promotional activities

Table 7. ECTRI's activities to promote TOPOS.

| ECTRI | Communication levels | When                  | Purpose   | Communication tools  |
|-------|----------------------|-----------------------|---|--|
|       | Level 1              | From M26 (Feb. 2021)  | Raise awareness among stakeholders, both within and outside BEOPEN, about TOPOS and its objectives    | <ul style="list-style-type: none"> <li>• Invite ECTRI Members to participate in TOPOS webinars.</li> <li>• Send regular BEOPEN and TOPOS updates to the ECTRI Members via monthly news email.</li> <li>• Publish regularly BEOPEN and TOPOS news on ECTRI website and social media.</li> </ul>   |
|       | Level 2              | From M28 (April 2021) | Promotion of TOPOS among stakeholders, both within and outside BEOPEN, about TOPOS and its objectives | <ul style="list-style-type: none"> <li>• Promote BE OPEN final event on ECTRI website and social media (several posts).</li> <li>• Invite ECTRI members, ECTRI Thematic Groups and Task Forces to the final BEOPEN event, 9<sup>th</sup> June 2021.</li> <li>• Invite US TRB International Coordinating Council members and friends to the final BEOPEN event, 9<sup>th</sup> June 2021.</li> <li>• Invite ETRA partners (e.g. FERSI as only partner not involved in BEOPEN consortium) to the final BEOPEN event, 9<sup>th</sup> June 2021.</li> <li>• ECTRI Third Parties (CDV, Czech Republic and BME, Hungary) promote the BEOPEN (including final event) and TOPOS news in their websites and social media and to their networks.</li> <li>• Organise a workshop under the framework of ECTRI Spring Assembly (April 28, 2021) to the Assembly representatives and Thematic Group members, presenting and discussing TOPOS and its impact to the transport research community (with Natalia Manola as keynote speaker).</li> <li>• Present TOPOS in ECTRI Thematic Groups meetings.</li> <li>• Disseminate BEOPEN final video on ECTRI media.</li> <li>• Present BE OPEN and TOPOS to the participants (senior and young researchers) of the <a href="#">YRS 2021</a>.</li> </ul> |

- EURNEX's promotional activities

Table 8. EURNEX's activities to promote TOPOS.

| EURNEX | Communication levels | When                  | Purpose   | Communication tools   |
|--------|----------------------|-----------------------|---|---|
|        | Level 1              | From M26 (Feb. 2021)  | Raise awareness among stakeholders, both within and outside BEOPEN, about TOPOS and its objectives    | <ul style="list-style-type: none"> <li>• Invite EURNEX Members to participate in TOPOS webinars.</li> <li>• Send regular BEOPEN and TOPOS updates to the EURNEX Members via newsletter.</li> <li>• Publish regularly BEOPEN and TOPOS news on EURNEX social media.</li> </ul>   |
|        | Level 2              | From M28 (April 2021) | Promotion of TOPOS among stakeholders, both within and outside BEOPEN, about TOPOS and its objectives | <ul style="list-style-type: none"> <li>• Promote BE OPEN final event on EURNEX social media (several posts).</li> <li>• Invite EURNEX and ERRAC members (in collaboration with UITP) to the final BEOPEN event, 9<sup>th</sup> June 2021.</li> <li>• Organise a workshop under the framework of EURNEX member Assembly (June 29, 2021).</li> <li>• TOPOS and BEOPEN has been mentioned in a paper submitted to the journal "TRANSPORT" with the title: "An Overview on Open Science in the European Rail Sector".</li> <li>• Disseminate BEOPEN final video on EURNEX media.</li> </ul> |

- EATEO's promotional activities
  - An email will be sent to all EATEO Members on the topic.
  - A special session will be on the program of the next EATEO conference.
- UITP
  - The BE OPEN final event was mentioned in one of UITP's main newsletters.
  - The final event invite was also forwarded to members of the Research in Mobility Committee, a new UITP forum with participation from research centres, operators, authorities, and industry.
  - The invitation was also disseminated within ERRAC and will be sent to Shift2Rail officers for its dissemination.

- WEGEMT
  - BE OPEN/TOPOS will be presented at the WEGEMT Executive Board meeting.
  - BEOPEN/TOPOS was presented at the STAB&S2021 (1<sup>st</sup> International Conference on the Stability and Safety of Ships and Ocean Vehicles, 7-11 June 2021, Glasgow) – PPT presentation and published paper in Proceedings.
  
- HUMANIST
  - Presentation of TOPOS at the HUMANIST General Assembly meeting, 19<sup>th</sup> March 2021.
  - Organisation of TOPOS session at HUMANIST General Assembly meeting, 25<sup>th</sup> October 2021.
  - TOPOS will be promoted at the following events:
    - ✓ 7<sup>th</sup> International HUMANIST Conference (Human Factor Challenges of Vehicle Automation and Smart Mobility), 26<sup>th</sup> – 27<sup>th</sup> October 2021, Rhodes, Greece.
    - ✓ HUMANIST Summer School, September 2022.

## 6. Recommendations and Conclusions

This section contains recommendations regarding successful diffusion of the TOPOS Observatory and Forum.

### For implementation before the closure of BEOPEN project

- **TOPOS brand**  
For successful diffusion and broad take up of the tool, the TOPOS logo, TOPOS Gateway and tagline(s) should be developed and broadly communicated to stakeholders.
- **Launch event**  
The launch event for TOPOS Observatory and Forum should take place in conjunction with the BEOPEN's final project event (June 9, 2021). ECTRI is the lead partner for the event. It is essential to invite representatives of the target audience of TOPOS as explained in section 4.2.  
Speakers/panelists should also be selected strategically as this will facilitate the promotion and uptake of TOPOS among stakeholders.
- Further promotion (press release, newsletter, social media, etc) shall continue after the TOPOS launch event.
- Project partners, and especially transport research associations, should actively promote TOPOS to their networks. This can be done through workshops, seminars as well as promoting the launch event.  
Events and activities already carried out and planned are Section 5.2.5.
- Develop a governance and operational model for TOPOS Observatory and Forum.
- Prepare a financial feasibility study that would define funding sources.

### For implementation after BEOPEN project

- The bodies in the governance model that will be adopted should guide the implementation of recommendations mentioned in this section and in section 4 (Communication strategy).
- These bodies should keep a working relationship with BEOPEN partners especially with the transport research associations.
- High-Level Networking at the national and international level e.g., with the European Commission should be pursued.
- Opportunities for further funding of TOPOS within HORIZON EUROPE etc. should be investigated.
- BEOPEN project partners, especially transport research associations, should continue promoting BE OPEN and its results regularly via their websites and social media, via direct email to their members and stakeholders.



- Strategic sessions on open science in transport should be encouraged at international conferences e.g., Transport Research Arena.
- Ensure that TOPOS is active on social media – creation of LinkedIn group, Facebook, Twitter etc.

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## Appendix I – BE OPEN Key Messages

| Users          | BE OPEN  | TOPOS gateway   | TOPOS for organisation   | TOPOS for individuals   | TOPOS forum  |
|----------------|--|---|--|---|--|
| <b>General</b> | <p>To support the implementation of Open Science in the transport domain, the European BE OPEN project was launched.</p> <p>—</p> <p>Standardizing OS in transport research.</p> <p>—</p> <p>Creating a favorable context for OS deployment in transport research.</p> <p>—</p> <p>Upscaling and deploying OS in transport research.</p> <p>—</p> <p>Supporting the transition to an OS future for transport research.</p> <p>—</p> <p>Promoting, regulating and standardising Open Science in Transport</p> | <p>TOPOS gateway is a single-entry point to explore, share and discuss research knowledge, data, publications, software and other information relevant to transport and mobility research. It is completely customized for transport research organisations on the one hand, and individuals on the other hand.</p> <p>Offering different services depending on the user.</p> <p>—</p> <p>TOPOS Observatory &amp; Forum are setting up a community of transport research organizations and individual researchers that are willing to work together and exchange knowledge, data, publications, software and other relevant information about transport research.</p> <p>—</p> <p>TOPOS Observatory &amp; Forum will contribute to creating a solid knowledge base on the implementation of Open Science approach in transport research.</p> <p>—</p> <p>By increasing interdisciplinarity of transport research, TOPOS</p> | <p>TOPOS Observatory aims to showcase the status and progress of open science uptake in transport research. It focuses on promoting territorial and cross border cooperation and contributing in the optimization of open science in transport research.</p> <p>—</p> <p>TOPOS Observatory for organisations provides companies, universities and research centers access to a vast number of research outputs related to transport research, which all follow open science guidelines and best practices by design.</p> <p>—</p> <p>Gathers all research outputs related to transport research.</p> <p>—</p> <p>Follows open science guidelines and best practices by design.</p> <p>—</p> <p>Links to open science resources (EOSC).</p> <p>—</p> <p>Monitors open science progress in transport research.</p> | <p>TOPOS Observatory aims to showcase the status and progress of open science uptake in transport research. It focuses on promoting territorial and cross border cooperation and contributing in the optimization of open science in transport research.</p> <p>—</p> <p>The TOPOS Observatory for individuals offers an open professional network where professors, students, researchers and experts in science and technology can share and access knowledge and their scientific work.</p> <p>—</p> <p>Search and discover research products of any type in the field of transport research.</p> <p>—</p> <p>Online collaborative tools to improve contents and to insert supplementary material such as video, datasets, models and more.</p> <p>—</p> | <p>TOPOS platform provides a Forum, to exchange ideas and share best practices for operationalising Open Science principles in transport research.</p> <p>—</p> <p>TOPOS Forum for national and European stakeholders – public and private - aims to exchange ideas and share best practices for operationalizing Open Science principles in transport research.</p> |





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|                        |               | <p>Observatory &amp; Forum will speed up the path from research to innovation and promote citizen's engagement in the scientific process.</p> <p>—</p> <p>TOPOS Observatory &amp; Forum will foster an evidence-based discussion and cross-fertilization of ideas amongst transport researchers on the national, European, and global scene.</p> |  | <p>Share results and work at any stage of the research cycle</p> <p>—</p> <p>Build an active community of contributors.</p> <p>—</p> <p>Work collaboratively in research reports and open discussion forums about them.</p> |  |
| Research organisations | (see general) | (see general and TOPOS for org.)   | <p>Promote the collaboration of public and private organisations</p> <p>—</p> <p>The platform is linked to the European Open Science Cloud (EOSC) and connected to the services of OpenAIRE.</p> <p>—</p> <p>TOPOS Observatory will provide research organisations with</p> <ul style="list-style-type: none"> <li>- the possibility to make their research efforts and results visible and comparable throughout Europe and beyond.</li> <li>- the possibility of finding new research collaborations in upcoming projects and new opportunities to use those data.</li> </ul> <p>—</p> | <p>Support for profiles of institutions, communities or research projects.</p>  | <p>TOPOS Forum for national and European stakeholders – public and private - aims to exchange ideas and share best practices for operationalizing Open Science principles in transport research.</p> |



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|  |               |  | Content based on the OpenAIRE Research Graph, a key asset of the European Open Science Cloud (EOSC)   |                       |   |
| <b>Private companies (Industries, inc. ETPs)</b> | (see general) | TOPOS will help the business sector: <ul style="list-style-type: none"> <li>- find experts and specialists in specific areas needed for their further business development and data science.</li> <li>- enter new collaborations with experts as e.g., in research projects to complement their portfolio with innovative solutions</li> </ul> | TOPOS Observatory will provide the possibility to make research results visible and comparable throughout Europe. <ul style="list-style-type: none"> <li>— The platform is linked to the European Open Science Cloud (EOSC) and connected to the services of OpenAIRE.</li> <li>— Promote the collaboration of public and private organisations</li> </ul>  |                       | TOPOS Forum for national and European stakeholders – public and private - aims to exchange ideas and share best practices for operationalizing Open Science principles in transport research. |
| <b>Public authorities</b>                        | (see general) | Open Science in transport research is the answer to a fragmented research ecosystem in Europe<br>TOPOS provides the environment to work on the big challenges in transport in the light of climate change, left behind areas, crowded cities, etc  | As content consumer: publicly available data can be shared and linked to other gathered information. Together a wider range of usability of those combined data is feasible. <ul style="list-style-type: none"> <li>— As content provider: interface with Open Government Data appreciated</li> <li>— EC project managers benefit from the direct integration with the EC SyGMA portal</li> </ul> |                       | TOPOS Forum for national and European stakeholders – public and private - aims to exchange ideas and share best practices for operationalizing Open Science principles in transport research. |



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| <b>Policy makers</b>     | (see general) | Open Science in transport research is the answer to a fragmented research ecosystem in Europe. TOPOS provides the environment to work on the big challenges in transport in the light of climate change, left behind areas, crowded cities, etc.<br>—<br>Making transportation researchers share-reuse-reproduce science and in bringing such a critical sector closer to the society enables open innovation and citizen science. | The TOPOS Observatory for Organisations supports openness and the facilitation of innovative ways to communicate and monitor research. |   | TOPOS Forum for national and European stakeholders – public and private - aims to exchange ideas and share best practices for operationalizing Open Science principles in transport research. |
| <b>Publishers</b>        | (see general) | Publishers can connect to the European Transport Research Community to monitor trends and developments as well as to exchange potentials and challenges on Open Access/Open Data in Transport Research with researchers.   | Publishers can run tests/trials for innovative media formats to validate them.   |   | Provision and exchange of information on trends in transport research to evaluate future relevant areas for Open Access publications.   |
| <b>Transport experts</b> | (see general) | Active participation in and contribution to the TOPOS Observatory will help in:<br>- getting a platform to discuss research results with a bigger community which will also ensure higher quality of data and therefore contribute to data integrity.<br>- finding new collaborations  |  | TOPOS for individuals is an open professional network to share and access knowledge, expertise and the outcome of their work. | TOPOS Forum for national and European stakeholders – public and private - aims to exchange ideas and share best practices for operationalizing Open Science principles in transport research. |
| <b>Professors</b>        | (see general) | Active participation in and contribution to the TOPOS Observatory will help in:  |  | TOPOS for individuals is an open professional network to share and access knowledge,  | TOPOS platform provides a Forum, to exchange ideas and share best practices for   |



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|                            |               | <ul style="list-style-type: none"> <li>- getting academic visibility and attention.</li> <li>- getting a platform to discuss research results with a bigger community which will also ensure higher quality of data and therefore contribute to data integrity.</li> <li>- creating new ideas for new research areas/future projects</li> </ul>  |                        | expertise and the outcome of their work.   | operationalising Open Science principles in transport research.   |
| Researchers/<br>Scientists | (see general) | <p>Active participation in and contribution to the TOPOS Observatory will help in:</p> <ul style="list-style-type: none"> <li>- getting academic visibility and attention.</li> <li>- getting a platform to discuss research results with a bigger community which will also ensure higher quality of data and therefore contribute to data integrity.</li> <li>- getting available data for research purposes</li> <li>- getting more quotes for scientific work.</li> <li>- finding new scientific collaborations.</li> <li>- creating new ideas for new research areas/future projects</li> </ul> |                        | TOPOS for individuals is an open professional network to share and access knowledge, expertise and the outcome of their work.      | TOPOS platform provides a Forum, to exchange ideas and share best practices for operationalising Open Science principles in transport research. |
| Students                   | (see general) | <p>Active participation in and contribution to the TOPOS Observatory will help in:</p> <ul style="list-style-type: none"> <li>- getting academic visibility and attention.</li> </ul>  |                        | TOPOS for individuals is an open professional network to share and access knowledge, expertise and the outcome of their work.<br>— | TOPOS platform provides a Forum, to exchange ideas and share best practices for operationalising Open Science principles in transport research. |



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|----------|--|--|------------------------|--|---|
|          |  | <ul style="list-style-type: none"> <li>- getting a platform to discuss research results with a bigger community which will also ensure</li> <li>- finding new scientific collaborations.</li> <li>- creating new ideas for future projects.</li> </ul> |                        | Using TOPOS for desk research will help to facilitate state of the art research in transport and therewith also avoiding duplication of research efforts and potential plagiarism. |   |
| Citizens | Open Science is a new approach to practice science. It increases openness, integrity and reproducibility of research. By doing so, it helps making scientific results and processes more transparent, and accessible to everyone, at all levels. To support the implementation of Open Science in the transport domain, the European BE OPEN project was launched. | BE OPEN created the TOPOS gateway, a single-entry point for open and collaborative research in transport   |                        | The platform is open to citizens who are interested in learning more about transport research.   | TOPOS forum could be a community of transport research experts bringing the gap between science and daily transport activities to empower citizens. |