European
Commission

TRIMIS

TRANSPORT RESEARCH AND INNOVATION MONITORING AND INFORMATION SYSTEM

OCTOBER 2019

TRIMIS

The Transport Research and Innovation Monitoring and Information System (TRIMIS) is an open-access information system that maps and analyses technology trends, research and innovation (R&I) capacities, and monitors progress in R&I in the European transport sector.

The Sustainable Transport Unit, Directorate for Energy, Transport and Climate at the European Commission's Joint Research Centre manages TRIMIS on behalf of the Directorate General for Mobility and Transport (DG MOVE) and the Directorate General for Research and Innovation (DG RTD).

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Content

Introduction

Transport has a major influence on the daily lives of European citizens and directly employs more than 11 million people in the European Union (EU). Yet the sector is undergoing a number of technological, economic and social transformations at an accelerating pace. Harnessing these changes is essential to deliver a Europe that protects and empowers its citizens.

In May 2017 the Commission adopted a long-term strategy, "Europe on the Move", to turn these challenges into opportunities and deliver smart, socially fair and competitive mobility by 2025. The EU will drive this transition through targeted legislation and supporting measures, including infrastructure investment and research and innovation (R&I). This will ensure that clean, connected and automated mobility solutions, transport equipment and vehicles will be developed, offered and manufactured in Europe.

The Strategic Transport Research and Innovation Agenda (STRIA) outlines future transport R&I priorities to decarbonise the European transport sector.

In coordination with Member States and transport stakeholders, STRIA aims to set out common priorities to support and speed-up the research, innovation and deployment process leading to radical technology changes in transport.

STRIA builds on and integrates seven thematic transport research areas, where public intervention at the European level can create added value in order to overcome socio-economic weaknesses,

increase competitiveness and meet EU energy and transport strategy goals:

- Cooperative, connected and automated transport;
- Transport electrification;
- Vehicle design and manufacturing;
- Low-emission alternative energy for transport;
- Network and traffic management systems;
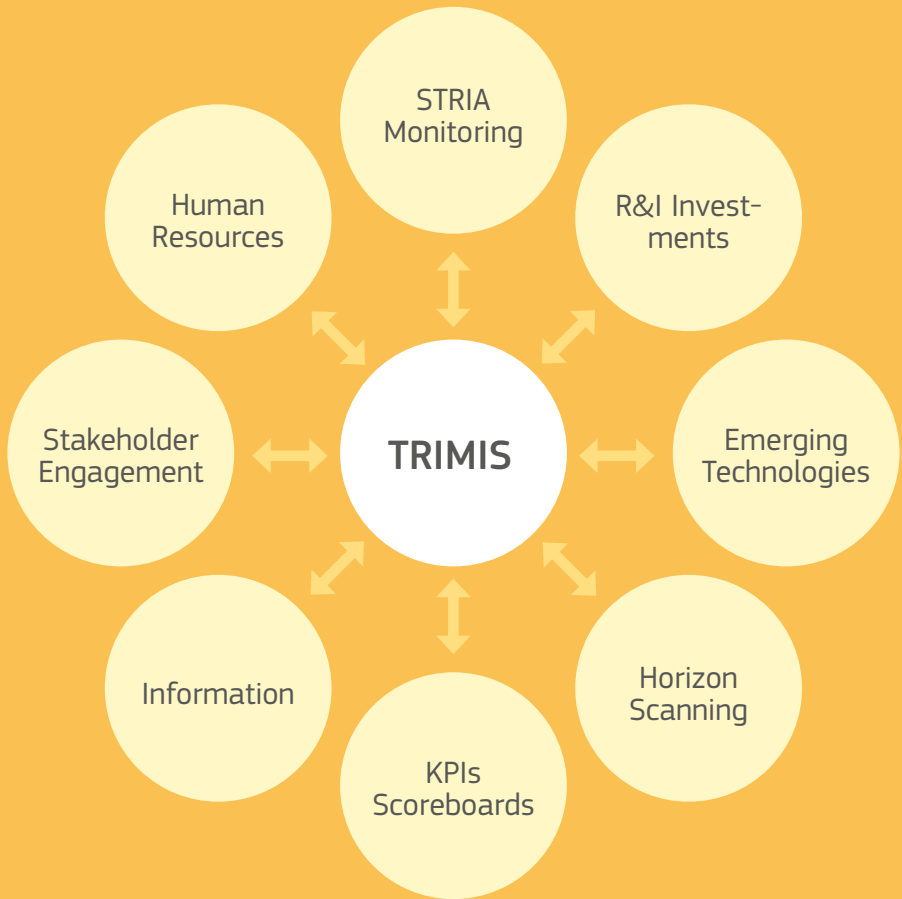- Smart mobility and services;
- Infrastructure.

STRIA is also the interface between other relevant sectors such as energy and information and communication technology.

TRIMIS

The Transport Research and Innovation Monitoring and Information System (TRIMIS) supports the implementation and monitoring of STRIA and its seven road maps.

In particular, it covers the following aspects of the transport sector:

- policies;
- data analysis;
- funding information;
- public and private investments;
- capacity and technology mapping;
- horizon scanning;
- news/updates.

TRIMIS main features and functionalities

Moreover, TRIMIS tracks developments in transport R&I, identifies innovative technologies and assesses their potential future impact. This process involves:

- Updating and maintaining a transport R&I database that includes projects and programmes on transport technologies and innovations. This repository provides an input for the assessment of key performance indicators (KPIs) in transport R&I and links to established EU tools and initiatives (e.g. the Strategic Energy Technologies Information System (SETIS) and Innovation Radar). It provides a communication channel between TRIMIS and transport stakeholders, allowing additions and amendments to the database with an automated link to existing EC repositories such as the Community Research and Development Information Service (CORDIS).

- Monitoring transport sector technology performance using a set of KPIs to assess European innovation capacities for each STRIA roadmap. In addition, it monitors the progress of European R&I projects to support the assessment of the transport sector performance and maturity status.

- Identifying new technologies and opportunities that may have an impact on the transport sector through an inventory of scientific developments of new and emerging technologies relevant to the future of the EU transport sector.

- Highlighting mature technologies that are close to market introduction.
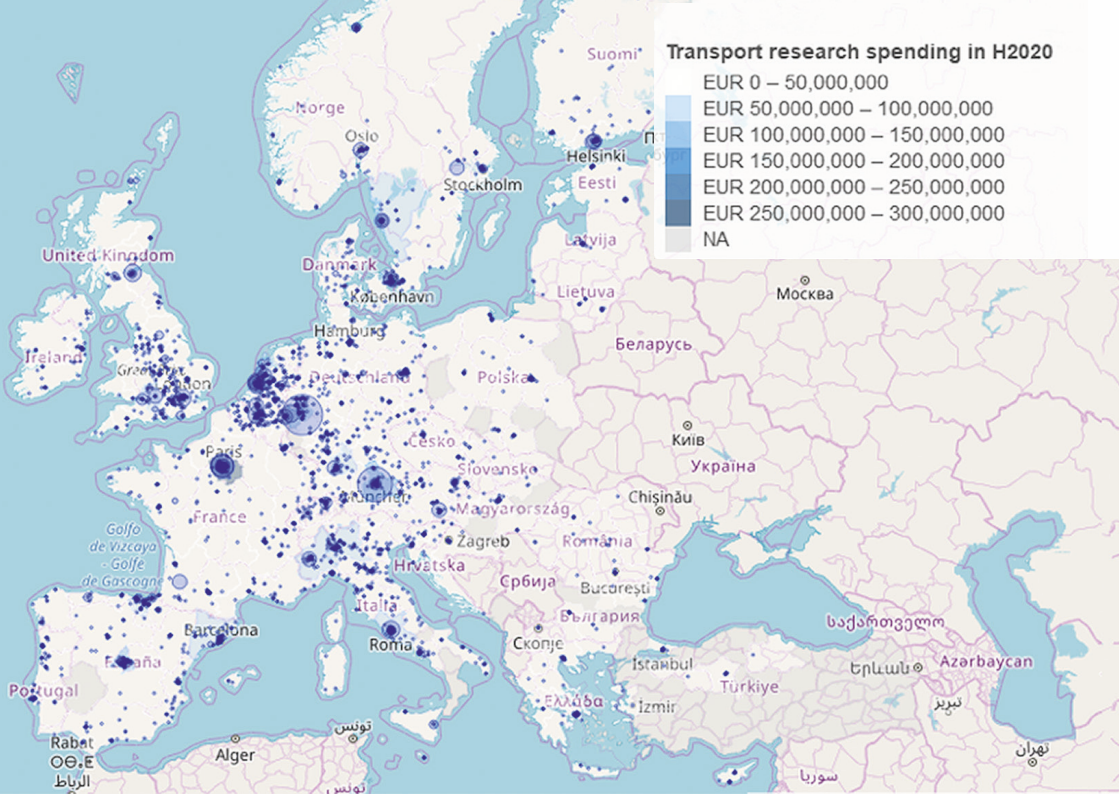
Within the STRIA context, TRIMIS aims to:

- Monitor progress of STRIA and support the development of STRIA roadmaps through the STRIA governance process.

- Prepare and update 'technology mapping' (state-of-the-art, barriers and potential of technologies) following the STRIA road-maps structure.

- Define and update 'capacities mapping' (financial and human resources).

- Assess funded transport research projects (with a focus on the STRIA roadmaps).

- Assist in reporting the progress of the STRIA against defined KPIs and scoreboards.

- Identify opportunities for new STRIA roadmaps or propose modifications to the existing ones.

- Monitor socio-economic developments and assess their influence on transport technology and innovation.

- Facilitate the effective functioning of an extensive network of industry stakeholders, Member State experts and authorities, research organisations, industrial and financial communities, information collection points, etc.

TRIMIS Insights

Horizon 2020 (H2020) is an EU Research and Innovation Framework Programme with nearly €80 billion of funding available over 7 years (2014 to 2020). By coupling research and innovation, H2020 facilitates excellent science and industrial leadership to address societal challenges. The goal is to ensure Europe produces

world-class science, removes barriers to innovation and makes it easier for the public and private sectors to work together in delivering innovation.

The above figure provides an insight into the distribution of H2020 transport research spending across Europe. The scope covers a total of 1,115 H2020 projects, which involve over 4,100 organisations. The spending includes both European funding and the contributions from individual organisations.

The blue dots represent the organisations and the size of the circle is linked to total spending. The spending per region is aggregated to highlight regional differences.

TRIMIS Publications

TRIMIS Newsletter
TRIMIS publishes a monthly newsletter. The Newsletter is divided into four sections: Introduction, Highlights, Projects and Events. The Introduction provides the reader with a short explanation of TRIMIS and the contents of the Newsletter. The Highlights section showcases specific reports or events of interest.

The Projects presents recent research and innovation projects added to the TRIMIS database. Finally, the Event sections lists key upcoming events that address different aspects of EU transport policy, research, technology and innovation.

TRIMIS Digest
The TRIMIS Digest is a bi-monthly publication designed to help stakeholders keep up-to-date with transport innovation. It also enables stakeholders to be aware of the latest developments in transport research both in Europe and internationally. The TRIMIS Digest provides short, concise summaries of the latest scientific publications related to the seven STRIA Roadmaps.

Each issue addresses a particular topic and aims to cover different transport modes. A search of mainly peer-reviewed journal papers published over the last year is undertaken.

Past Digests have addressed the following topics:

- Reducing GHG emissions from transport (November 2017)
- Connected and automated transport (February 2018)
- Smart mobility (April 2018)
- Multimodal transport (July 2018)
- Reducing transport emissions (November 2018)
- Transport infrastructure (February 2019)
- Urban logistics (April 2019)
- Financing transport infrastructure (June 2019)
- Women and transport (September 2019)

November 2018 Issue 12

TRIMIS Newsletter

Dear Reader,

Welcome to the November issue of the Transport Research and Innovation Monitoring and Information System (TRIMIS) Newsletter. TRIMIS is an online platform for researchers to share and discuss innovation in mobility in Europe.

November's TRIMIS highlights include the European Commission's public consultation on how Europe should build trust in connected and automated mobility services and three reports from the EC Joint Research Centre on:

- the evolution of electric vehicles in Europe and whether they have yet reached full commercialisation;
- research and innovation capacity in smart mobility and services, based on an assessment of TRIMIS; and
- existing standards and standards under development that are relevant to electric vehicle battery performance, degradation and lifetime.

In addition, the Newsletter features a selection of forthcoming events and projects from the TRIMIS database.

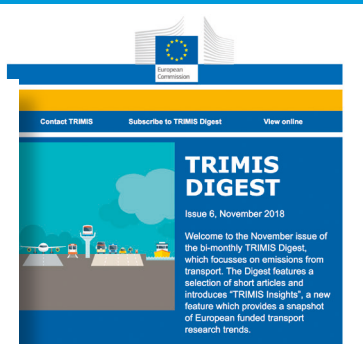Please visit the TRIMIS website to find more information on European transport research and innovation.

Kind regards,
The TRIMIS team
Contact us

Highlights

Electric vehicles in Europe from 2010 to 2017: is full-scale commercialisation beginning?

Research and innovation capacity in smart mobility and services

Open Public Consultation on Connected and Automated Mobility (CAM)

Standards for the performance and durability assessment of electric vehicle batteries

Projects

TRIMIS DIGEST

Issue 6, November 2018

Welcome to the November issue of the bi-monthly TRIMIS Digest, which focusses on emissions from transport. The Digest features a selection of short articles and introduces "TRIMIS Insights", a new feature which provides a snapshot of European funded transport research trends.

Co-benefits of transport fleet and fuel policies in reducing transport emissions

This study addresses the co-benefits of climate change mitigation policies to reduce air pollution, such as particulate matter ($PM_{2.5}$), and climate change impacts of passenger cars. Using a scenario-based approach in Ireland, it provides detailed disaggregation of non-exhaust $PM_{2.5}$ by brake, tyre wear and road abrasion, and carbon dioxide (CO_2) by car technologies not yet considered. The study found that non-exhaust $PM_{2.5}$ represents a large part of pollutant emissions in 2035 when, it is estimated, there will be a high number of passenger cars with alternative technologies.

READ MORE

Impact of cruise ship emissions on air quality

Ship emissions not only contribute to greenhouse gas (GHG) emissions, but also have an impact on local air quality of port cities. This study calculates the emissions of nitrogen oxides and sulphur oxides (NO_X and SO_X) from cruise ships in the Italian port of Naples. It assesses the contribution of cruise ship emissions to air quality by comparing measured concentrations from fixed monitoring stations with modelled emissions. It makes a number of recommendations to improve knowledge of the impact of ship emissions on air quality.

READ MORE

The emission benefits of switching from aviation to high speed rail

The continuous growth in passenger air transport has consequences for greenhouse gas (GHG) emissions. This study assessed the environmental impact of travelling by high speed rail (HSR) rather than flying. Comparing six

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TRIMIS Reports

A number of technical and science for policy reports have been produced. These outline the TRIMIS methodological framework and provide assessments of European transport R&I.

2019

Research and innovation in low emission alternative energy for transport

Ortega Hortelano, A., van Balen, M., Gkoumas, K., Haq, G., Tsakalidis, A., Grosso, M., and Pekar, F.

Provides a comprehensive analysis of research and innovation in alternative fuels in selected EU funded projects from 2007 onwards. It identifies relevant researched technologies by fuel type and their phase of development.

2019

Research and innovation in transport infrastructure in Europe

Gkoumas, K., van Balen, M., Ortega Hortelano, A., Tsakalidis, A., Grosso, M., Haq, G., and Pekar, F.

Provides a comprehensive analysis of R&I in transport infrastructure using the TRIMIS methodology. It critically addresses research by thematic area and technologies, highlighting recent developments and future needs.

2019

Women in European transport with a focus on Research and Innovation

Ortega Hortelano, A., Grosso, M., Haq, G., Tsakalidis, A., Gkoumas, K., van Balen, M. and Pekar, F.

Examines the status and evolution of European research in tackling women's issues in transport and analyses women's participation in transport research and innovation activities. It assesses the progress to date and identifies challenges and opportunities concerning women and mobility.

2019

EU Transport Research & Innovation status assessment report

van Balen, M., Ortega Hortelano, A., Grosso, M., Tsakalidis, A., Gkoumas, K., Haq, G. and Pekar, F.

Provides the second overview of the TRIMIS database, assessing the status of transport R&I in seven thematic areas as defined by the European Commission's Strategic Transport Research and Innovation Agenda.

2019

Innovation capacity of the European transport sector

Grosso, M., van Balen, M., Ortega Hortelano, A., Haq, G., Gkoumas, K., Tsakalidis, A. and Pekar, F.

Provides a macro-level assessment of innovation capacity in the European transport sector. It does so by identifying and assessing the most relevant indicators on private and public funding, R&D personnel and researchers, engagement in innovation and on the types of innovation activities at the EU and Member State level.

2019

TRIMIS as a support tool for transport research and innovation horizon scanning

Tsakalidis, A., Gkoumas, K., van Balen, M., Haq, G., Ortega Hortelano, A., Grosso, M. and Pekar, F.

Provides an overview of the TRIMIS horizon scanning methodology to support the establishment of an anticipatory and adaptive culture in the field of European transport research and innovation.

2019

Research and innovation capacity in transport infrastructure

van Balen, M., Grosso, M., Gkoumas, K., Tsakalidis, A., Haq, G., Ortega Hortelano, A. and Pekar, F.

Maps infrastructure research and innovation capacity focusing on the geographical and organisational distribution of funds, as well as investments by Member State and mode of transport. It identifies interventions beneficial for policy.

2019

Research and innovation in bridge maintenance, inspection and monitoring

Gkoumas, K., Marques Dos Santos, F. L., van Balen, M., Tsakalidis, A., Ortega Hortelano, A., Grosso, M., Haq, G. and Pekar, F.

Following a methodology developed by TRIMIS, it critically addresses issues and techniques in European bridge maintenance, inspection and monitoring highlighting new technological developments and future oriented approaches.

2018

Research and innovation capacity in smart mobility and services

van Balen, M., Grosso, M., Tsakalidis, A., Gkoumas, K., Haq, G., Ortega Hortelano, A., and Pekar, F.

Maps research and innovation capacity in smart mobility and services. It focuses on EC framework research programmes, the geographical and organisational distribution of funds, as well as investments by Member State and transport mode.

2018

Electric vehicles in Europe from 2010 to 2017: is full-scale commercialisation beginning?

Tsakalidis, A. and Thiel, C.

Analyses electric vehicle (EV) deployment in Europe from 2010 to 2017. Recent development in the EV sector has seen an increase in market share and available recharging infrastructures but have EVs reached full-scale commercialisation?

2018

Inventory, modelling and assessment of New and Emerging Technologies and Trends (NETT) in the transport sector

Gkoumas, K., Tsakalidis, A., van Balen, M., Grosso, M., Haq, G., Ortega Hortelano, A., and Pekar, F.

Provides the methodological framework for the inventory, modelling and assessment of New and Emerging Technologies and Trends (NETT) in the European transport sector.

2018

Assessing innovation capacity in the European transport sector

Grosso, M., van Balen, M., Tsakalidis, A., Ortega Hortelano, A., Haq, G., Gkoumas, K., and Pekar, F.

Provides the methodological framework for a macro-level analysis of EU transport R&D capacity from a financial and socio-economic perspective.

2018

Research and innovation capacity in cooperative, connected and automated transport

van Balen, M., Grosso, M., Tsakalidis, A., Gkoumas, K., Haq, G. and Pekar, F.

Maps connected and automated transport research and innovation capacity, focusing on EC framework research programmes, geographical and organisational distribution of funds and Member State investment by transport mode.

2018

Towards an integrated monitoring and assessment framework for the Strategic Transport Research and Innovation Agenda

Tsakalidis, A., van Balen, M., Gkoumas, K., Grosso, M., Haq, G. and Pekar, F.

Provides an overall methodological framework formulated for the assessment and monitoring of the implementation of STRIA.

2018

EU Transport Research & Innovation Status Assessment Report 2017

Tsakalidis, A., Gkoumas, K., Pekar, F., Grosso, M., Haq, G. and Marelli, L.

Presents a preliminary overview and analysis of the TRIMIS database and iden-tifies areas for further research.

→ **All TRIMIS reports are available online at: https://trimis.ec.europa.eu/**