



INTEND – Identify future Transport rEsearch NeedS

INTEND NEWSLETTER 2

PROJECT IN A NUTSHELL

The INTEND project is a Coordination and Support Action (CSA) funded by the H2020 programme. The main aim of the project is to deliver an elaborated study of research needs and priorities in the transport sector utilizing a systematic data collection method. Megatrends that will be affecting the future transport system will be identified using the Analytical Network Process to ensure validity of the results. Finally, INTEND will develop a transport agenda that would pave the way to an innovative and competitive European Transport sector.

FUTURE TRANSPORT TECHNOLOGIES

The INTEND project has released number of project deliverables during its first 5 months that have been briefly introduced in Newsletter 1. Specifically, Deliverable 2.1 “Transport projects & future technologies synopses handbook” reviewed 388 EU and international funded transport research projects from 2010 to the present that focus on technology development. This includes technological roadmaps from key transport stakeholders to identify technologies that require development or future technologies that will be used by the transport sector within the time horizon of 2020 - 2035, enabling the sector to meet future demand and needs. The technology and project reviews have been carried out across the four modes of transport (road, aviation, rail, waterborne) and have been divided into passenger and freight sectors. A search engine with brief project results and the technologies that each research project has developed, has been introduced in the INTEND project website <https://intend-project.eu/access-to-the-transport-research-data-repository/>. Furthermore, the transport technology orientation of countries like USA, Russia, India, China and Japan have been presented in D 2.1, offering a brief review of which technologies are more important for each of these nations.

POLITICAL IMPERATIVES IN TRANSPORT: A LONG-TERM VISION FOR THE DECISION-MAKING PROCESS

The INTEND project team with Technische Universität Berlin (TUB) as task leader released Deliverable D2.3, in which the results regarding the Political Imperatives (PI), that are influencing the European transport sector, were presented. Besides technological advances, forward-looking projects and future transport concepts, PIs are an important prerequisite for identifying long-term strategies in the transport sector.

In order to approach the term Political Imperative, a practical definition in scope of the INTEND project was first drawn up. PIs can be conceived in two ways. First, a PI can be a demand or claim to take a certain action or realize a certain target state and is usually formulated by politicians (as part of the political debate), NGO's, private entities (e.g. companies) and research institutions, to give an example; secondly, a PI can be a formulated intention to take a certain action or realize a desired target state by politicians or political bodies like governments, ministries etc. The formulated demand or claim can also be seen as a first step in the political discourse to shape actual political action.

**4/9/2018
INTEND Project
Newsletter No.2**

Dear Reader,

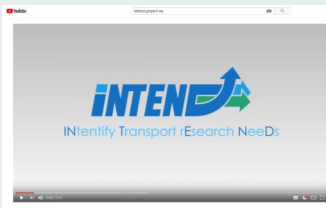
We would like to welcome you to the second INTEND newsletter containing the second update regarding the project



INTEND PROJECT VIDEO

You may check the INTEND project video that is now available on YouTube

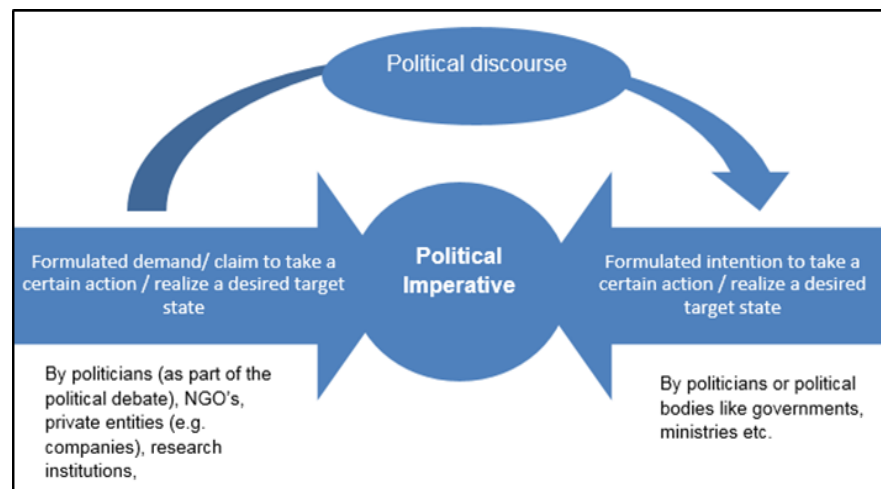
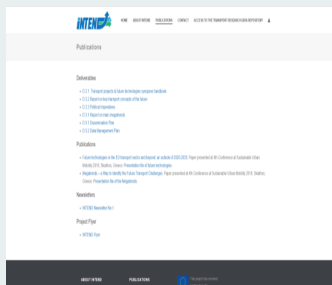
<https://youtu.be/KqvUzytZWus>



INTEND PUBLICATIONS SECTION

All intend project deliverables and articles are available in the project's website under the publications section

<https://intend-project.eu/publications/>



With this underlying definition it was possible to identify relevant stakeholders who are part of the political discourse. Filtering and structuring the worldwide ensemble of existing PIs is a massive task which requires an adequate approach and sound methodology. To do this we defined relevant PIs as being part of the current political discourse or reasonably relevant for the future development of the transport sector.

Transformed into a research question, this means: Which PIs, formulated by and to whom, are at the moment part of the worldwide political discourse or deemed as putatively relevant for the future development of the European transport sector?

The approach that has been developed to answer this question and therein included aspects, is to use Mayring's method of qualitative content analysis. With the help of Atlas.ti, a scientific software for qualitative data analysis, relevant sources by significant identified stakeholders have been searched and formulated PIs were coded. An analysis of stakeholders that are influencing the discourse on transport related PIs – being originators, intensifiers and enunciators of PIs – has to be conducted. These stakeholders can be grouped in categories as follows:

- International non-governmental organizations (INGOs), Non-governmental organizations (NGOs),
- Important companies of the transport industry,
- Research institutions (in form of scientific publications),
- Supranational organizations, intergovernmental organizations,
- Governments/ ministries.

This meta-analysis has assessed altogether 135 different sources by stakeholders with relation to the European and global transport sector. A software supported qualitative content analysis of around 8,000 pages provided the result that altogether 286 political imperatives – 137 demands/ claims formulated to the political sphere and 149 intentions formulated by the political sphere – have been identified.

Imperatives that include goals of reducing Greenhouse Gas emissions, either directly or

indirectly, by supporting modal shift, substituting the source of energy (EV's, alternative fuels) or using existing infrastructure more efficiently make up the majority. Moreover, the aspect of traffic safety received a quite high ranking and imperatives often over proportionally target road transport on both lists. In general, it can be stated that these demands/ claims are focusing the creation/ implementation of clear and reliable frameworks and regulations. On the contrary imperatives pointing to standardization and harmonization of regulations were – with one exception – completely missing in the short-list of the intentions. Here, an important point is especially the harmonization of standards, rules and regulations inside the European Union.

Forward looking imperatives are especially focussed on urban transport and data issues. Here it can be stated that imperatives coming from the European stakeholders were much more forward looking and that topics like intelligent transport systems, MaaS, green logistics have already – although often quite weakly – found entrance into strategy papers.

Nevertheless, there were still demands that might become more relevant in future and have yet not been sufficiently considered. These demands mostly relate to the development of long-term strategies in order to create also a reliable development for the economy. This touches topics like a digitization strategy for the transport sector, a strategy to apply and enforce high working standards also to safeguard a sufficient amount of workforce in the transport sector.

Other demands strongly point to research and development in sharing services and autonomous vehicles which are currently revolutionizing the transport sector. This requires innovative planning strategies and ways to regulate and develop new markets in the "right" direction, which opens-up another topic. Other demands/ claims were formulated suggesting a reform of the research environment itself by taking a new more holistic perspective on mobility and to orient research on societal needs. An interesting imperative that has been identified as a demand and intention was to develop ways to reduce traffic demand and to escape from the

growth- spiral.

Finally, the method chosen has proven to be adequate for delivering an initial snapshot of the current state of imperatives with relation to the transport sector. This result has provided a sufficient and above all structured overview of the most important political imperatives, which has served as a valuable source for further analyses within the INTEND project.

D 2.3 is available at the INTEND homepage [publications section](#)

IDENTIFICATION OF FUTURE TRANSPORT CONCEPTS

Deliverable D 2.2's main objective was to identify the major transport concepts and developments of the future in the literature, within a time horizon of 2020-2035 and beyond. The overall aim was to effectively identify the key transport concepts of the future through a variety of reports and research projects that had already carried out this work. D 2.2 aggregated all the information gathered by the aforementioned literature under one roof, thus compiling the findings of past projects and more recent work that has been published within the last few years.

The approach taken involved a literature review for the purpose of identifying a distinct definition of the term “transport concept”, followed by an extended literature review-based methodology and search on the aforementioned term for the capturing of the key future transport concepts applicable to passenger and freight transportation sectors. The former review resulted in a literature gap of a precise definition of the term “transport concept”, thus the term was defined as a concept or idea that presents how mobility takes place between two places, referring to movement of passengers or freight. The term may also describe the vehicle and the way that transportation or mobility takes place.

For the implementation of the current Deliverable, particular emphasis was placed on EU FP7 and H2020 funded research projects, namely MOBILITY4EU, FUTRE, RACE2050, OPTIMISM, METRIC and IKNOW. Additionally, future transport-related websites, technology-oriented websites and several forward-looking industry reports also provided input and further supported the attempted identification of the major future transport concepts of the future.

The various transport concepts captured by

the literature review, pertained either to one particular transport mode (road, aviation, rail, maritime) or to different combinations of the aforementioned modes. Similarly, certain transport concepts were sector specific i.e. passenger or freight, while others could be applied to both. The identified transport concepts were not categorised by transport mode. On the contrary, they were grouped according to the transport sector that they were/could be applicable to (passenger or/and freight transport). The identified concepts with a potential application to both passenger and freight transportation sectors, were included to both of the aforementioned categories.

After a thorough review of the pertinent literature, matrices listing future transport concepts over sources were prepared. The overall aim was to determine concepts that are researched, discussed or proposed in the majority of the literature sources, thus to indicate a certain level of consensus to those that are more likely to shape the future transport landscape. A cut-off criterion for reaching a consensus was defined, for the purpose of identifying the dominant concepts of the future on the basis of high frequency of occurrence in the literature reviewed.

UPCOMING DELIVERABLES

The INTEND project will soon be reaching its completion and releasing the three final deliverables that are currently work in progress.

- **D4.1 Sketch of the future transport system.** A deliverable that presents the key future trends in mobility and transport. Based on expert interviews and desk research the deliverable will present technological innovations that are about to be developed or implemented that are expected to have a big potential to serve as future game changers.
- **D 3.2 Megatrends validation and impact assessment.** This deliverable will present the outcomes of the validation and impact assessment of technological advances, megatrends, political imperatives on selected key transport concepts of the future from various perspectives based on a Analytical Network Process survey that has been conducted with various experts
- **D 4.3 Transport research agenda: blueprint on transport research needs, priorities and opportunities.** This will be INTEND project's key outcome which will present that future transport research agenda based on the work that has been carried out



The seven top-cited concepts for passenger and freight transport, were agreed to form the dominant transport concepts of the future. The results are presented in the table below.

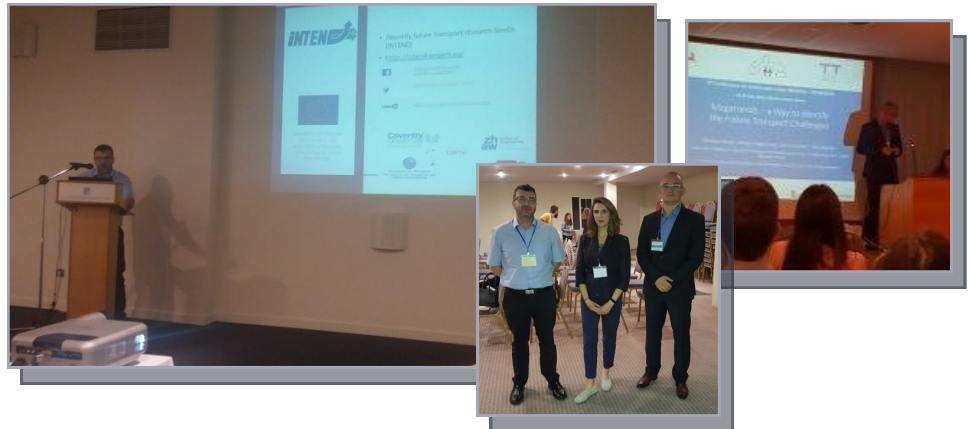
Dominant transport-applicable concepts of the future	
Passenger concepts	Freight concepts
Automation – passenger transport	Shared mobility, on-demand mobility, MaaS, FaaS, LaaS
Shared mobility, on-demand mobility, MaaS	Seamless transport chains – multimodality, intermodality
Electrification – passenger transport	Automation – freight transport
Seamless transport chains – multimodality, intermodality	Electrification – freight transport
Personal air transportation, “flying cars”, “flying taxis”	Delivery drones
Smart use of travel time	Superfast ground and underground transportation (cargo tubes, underground freight pipelines)
High-speed rail	Freight consolidation hubs, freight distribution centres
Superfast ground and underground transportation (hyperloops)	

D 2.2 is available at the INTEND homepage [publications section](#)

D 2.2 is available at the following link https://intend-project.eu/wp-content/uploads/2018/06/intend_d2.2-report-on-key-transport-concepts-of-the-future.pdf

INTEND AT 4TH CONFERENCE ON SUSTAINABLE MOBILITY 2018 SKIATHOS, GREECE

INTEND consortium members from CUE, FTTE and CERTH participated in the 4th Conference on Sustainable Mobility (<http://csum.civ.uth.gr/>) that was held in Skiathos, Greece during 24-25 May 2018. Two papers were presented covering results from the project about future transport technologies and megatrends. Both papers and presentations are available in the [Publications](#) section.



INTEND PROJECT 3RD MEETING IN THESSALONIKI, GREECE 21-22 JUNE 2018

The third INTEND project meeting took place in Thessaloniki, Greece between 21st and 22nd June 2018 and was hosted by Centre for Research and Technology Hellas (CERTH) at the Hellenic Institute of Transport facilities.

The meeting's main objective was to demonstrate the progress made since the previous meeting in February and present the remaining research topics before the project's completion in September.

Specifically, the survey methodology for WP3 (Identification of future challenges) was presented and the procedures for the second INTEND survey were demonstrated. These surveys are conducted within the framework of D 3.2 "Report on Megatrends validation and impact assessment". The first survey was used to identify the interactions between megatrends, technological advances and political imperatives. The online LimeSurvey questionnaire to select the above elements as well as corresponding relationships between them in the clusters was presented as well. In addition the second survey will enable estimation of the relationships (weights) between all selected key elements (technological advances, political imperatives and megatrends) from the perspective of their potential impact on development of the key transport concepts of the future (automation; shared mobility, on-demand



mobility, MaaS; Electrification; Seamless transport chains – multimodality, intermodality, etc.).

Preliminary results from WP4 – Paving the way to the future: guidelines for a forward looking transport sector were presented, divided into passenger and freight transport across the four modes.

CERTH, that is the WP5 Leader, presented the progress of the work package. The progress of the social media postings was shown in detail, as well as the dissemination activity for each partner.

INTEND PROJECT FINAL CONFERENCE

The INTEND project is reaching its completion and is organizing its final event which will be held as a parallel session at the **International Conferences on Traffic and Transport Engineering** that will take place in **Belgrade, Serbia**, on the **27th and 28th September 2018**.

The INTEND consortium will present its key project findings, while the session will host invited guest speakers and a selection of paper presentations on the future of transport from fellow conference researchers.

For further information please visit the ICTTE's conference page http://ijtte.com/article/102/ICTTE_Belgrade_2018.html



INTEND PROJECT

Project Coordinator
Coventry University
Enterprises Ltd
Mrs. Eleni Anoyrkati
e.anoyrkati@coventry.ac.uk



WEBSITE INFORMATION

For further information on the INTEND project, visit the website and subscribe to our newsletter to stay up to date <https://intend-project.eu/>

JOIN US ON SOCIAL MEDIA



<https://www.facebook.com/IntendEuropeanProject/>



https://twitter.com/intend_project



<https://www.linkedin.com/groups/12076570>



Funded by the Horizon 2020 research and innovation programme of the European Union (GA 769638)



Zürich University
of Applied Sciences



UNIVERSITY OF BELGRADE
THE FACULTY OF TRANSPORT AND
TRAFFIC ENGINEERING



CERTH
CENTRE FOR
RESEARCH & TECHNOLOGY
HELLAS

