TRANSPORT CHALLENGE IN HORIZON 2020

ECTRI SUGGESTIONS FOR THE THIRD WORK PROGRAMME (2018-2020)
in the field of
"TRANSPORT ECONOMICS AND POLICY"

October 2016

The European Conference of Transport Research Institutes (ECTRI) is an international non-profit association that was officially founded in April 2003. It is the first attempt to unite the forces of the foremost multimodal transport research centres across Europe and to thereby promote the excellence of European transport research.

Today, it includes 28 major transport research institutes or universities from 21 European countries. Together, they account for more than 4,000 European scientific and research staff in the field of transport. ECTRI as the leading European research association for sustainable and multimodal mobility is committed to provide the scientifically based competence, knowledge and advice to move towards a green, safe, efficient, and inclusive transport for people and goods.

1. Introduction

ECTRI launched its Thematic Groups in September 2007 as a means to facilitate exchanges among its researchers interested in similar research fields and in order to promote joint initiatives and positions. One of the groups is the Thematic Group on Transport Economics and Policy (TG-ECOPOL). The main objectives of this group are to define research topics of interest for supporting EC policies and programmes, to increase successful participation in EU projects and to provide a platform for networking and scientific exchanges. The group consists of 49 experts from 26 Transport Research Institutes and Universities representing 20 European countries. Most of these institutes are working in the field of policy analyses e.g. scenarios, foresights, cost benefit analyses, Public Private Partnership, pricing and externalities. Members are: AIT, BASt, BME, CDV, CENIT, DLR, DTU, Fraunhofer, HIT, IFSTTAR, ITS, KTI, LNEC, POLITO, TØI, TRL, TTI, UL, UNEW, UNIZA, UPM, UVEG, VGTU, VTI, VTT and WVL (RWS).

TG-ECOPOL has identified several research topics that are of general interest to the group and that are seen as highly relevant for the Horizon 2020 programmes. ECTRI thinks that given their importance, these aspects should be identified as research themes in future programme of "Horizon 2020".

2. Suggested research topics

The suggested research topics are reflected in the form of research priorities, aiming to highlight their significance for inclusion in the upcoming calls of Horizon 2020, and in particular to the Challenge aiming to achieve "Smart, Green and Integrated Transport".
TG-ECOPOL is proposing eleven (11) research topics based on the conviction that increased knowledge in those areas will be important for "achieving low carbon mobility", suggested by ECTRI as guiding theme for the third Work programme 2018-2020, in its recent position paper[1]. Link to this, those topics, which are presented in relation to the key areas that are seen as key drivers for accelerating the transition towards this mobility: 1. Systemic approach; 2. Resilience; 3. Human factors; 4. Policy-making.

II. Resilience:
1. Increasing aviation resilience and passengers' well-being through managing disruptions in the air transport system using big data for social and economic efficiency (p. 3)
2. Socio economic optimization of road maintenance programs (p. 13)

III. Human factors:
3. Understanding behavioral and social equity impacts of low carbon technologies (p. 4)
4. Socio-economic evaluation, environmental and behavioral effects of connected and automated transport systems in urban environments (p. 7)
5. Assessing the mobility behavior of tourists in port cities for reorienting transport solutions to boost the blue economy at local and regional levels (p. 9)
6. User preferences for transport system servitisation up to 2020 (p. 12)
7. Social inclusion and new mobility options (p. 15)

IV. Policy making:
8. Promoting decarbonization through efficient and harmonized carbon pricing and taxation schemes (p. 6)
9. Robust monitoring and evaluation schemes for implementing sustainable urban mobility plans (in cities that are culture heritage sites) (p. 11)
10. Integrating roads in their socio-ecological context (p.14)
11. Impact of European and National policies to obtain seamless travel. Enhancement of multimodal trips from the passenger viewpoint in order to decrease the car pressure and reduce GHG emissions. And to combine people travels and freight organization to fulfil society needs (p. 16)

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[1] ECTRI position paper on the third Transport Work programme "Towards low carbon mobility", July 2016

1

Suggested title of the research topic	**Increasing aviation resilience and passengers' well-being through managing disruptions in the air transport system using big data for social and economic efficiency**
Programme	Transport
Timing/year Work Programme	2018 - 2020
Indication on "research area"	
Aviation & Socio-economic and behavioural research	
Specific challenge	

The disruptions in the air transport industry have major social and economic impacts in passengers, airlines, airports, ground handlers and many other service suppliers. Disruptions are increasingly frequent, e.g. due to the air travel supply base complexity (increasing number of suppliers with different deliverable reliability, etc.) and occurrence of extreme weather events. If no actions are taken, the disruptions happening in the air transport system can turn this system unsustainable due to the negative impacts on the performance of businesses with increasingly high costs and passenger dissatisfaction. The improvement of the air transport system can be achieved by improving its resilience in its three aspects (absorptive, adaptive and restorative), i.e., making it able to absorb the impact of disruptions, to adjust to undesirable situations and to recover to normal or improved operations. This should be accomplished by managing efficiently the air transport system and, at the same time, improving the passenger satisfaction.

Scope

Proposals under this topic shall address the following resilience properties and aspects:

1) To improve the <u>absorptive capacity</u> of the air transport system, that is the degree to which a system can absorb the impacts of system disruption and minimize consequences such as external and internal social and economic effects; management tools to be developed shall be able to detect disruption patterns (including passenger feedback) and its socioeconomic impacts that can be used to improve the robustness of operational plans.

2) To improve the <u>adaptive capacity</u> of the air transport system, that is the ability of a system to adjust to undesirable situations by undergoing some internal changes; tools to be developed and algorithms need to automatically learn from managing the disruptions and from interaction with humans (from passengers to airline, airport and other air transport operators and systems), so that the air transport system can react better using the knowledge gatherer from the past.

3) To improve the <u>restorative capacity</u> of the air transport system, that is the ability to recover or bounce back from disruptive events and return to normal or improved operations; Development of tools and algorithms that allow the air transport system to select the best actions to take when recovering from a specific disruption; management tools to be developed should have features that allow the passengers to provide feedback and classify solutions. It should also allow interaction with human operators for final decisions (human-in-the-loop).

The systems, tools, algorithms to be developed should integrate the three resilience characteristics mentioned above.

Expected impacts

Proposals under this topic are expected to contribute to:
- Increase the resilience of the air transport system by developing cost-effective tools that are able to reduce significantly the negative impacts of disruptions on businesses and consumers' well-being;
- Use big data for socioeconomic efficiency in the air transport system.

Further suggestions regarding this topic

RIA
One stage

2

Suggested title of the research topic	**Understanding behavioural and social equity impacts of low carbon transport technologies** or Cost-effectiveness and behavioural impacts of low carbon transport technologies (including low carbon and renewable energy sources)
Programme	Transport
Timing/year Work Programme	2018-2020

Indication on "research area"

Urban Mobility & Socio-economic and behavioural research

Specific challenge

The European Commission Transport White Paper "Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system" envisages that the use of conventionally-fuelled vehicles will be totally banned from European cities by 2050 (and halved by 2030). Therefore, one of the challenges is to transform urban mobility through using low carbon transport technologies to reduce Europe's dependence on imported oil and to cut greenhouse gas emission (GHG) from transport by 20% by 2030 and by 70% until 2050 (with respect to 2008 levels).

Boosted by the interest of the automotive industry, multi-stakeholders platforms and other public and private stakeholders from various fields (transport, energy, ICT, etc.), transport related technology tends to develop at a more rapid pace Worldwide than changes in mobility patterns (users' behavioural and attitudinal changes regarding technology choice, mode choice, etc.). These different underlying (societal and industrial) speeds require further investigation in order to prevent possible mismatches between critical social and economic variables that are expected to drive alternative futures and quality of life (e.g. individual versus collective mobility, new mobility services and social inclusion, etc.).

Considering the mix of already available/emergent low carbon transport technologies until 2030 and 2050 (plug-in electric vehicles, hydrogen fuel cell electric vehicles, alternative fuels such as electricity from renewable energy, etc.), the research challenge addressed by this topic will require the integration of transport and technology roadmaps, modelling transitions to decarbonisation and to evaluate *ex ante* the various impacts (socio-economic and behavioural, etc.) that alternative low carbon transport technologies may have.

Scope

Proposals under this topic shall address the following aspects:
- Behavioural experiments exploring the combination of low carbon technologies in at least 3 cities with resident population integrating vulnerable user groups;
- Modelling transitions to low carbon transport futures until 2030 and 2050, considering the update of transport and technology roadmaps, exploring the combination of different technologies in each context;
- Evaluate *ex ante* the socio-economic and behavioural impacts of alternative combinations of low carbon transport technologies, including social equity and accessibility impacts of vulnerable user groups (the elderly, impaired users, etc.);
- Provide cost-effectiveness indicators of low carbon transport technologies;
- Provide recommendations to transport and energy policies such that impacts of transport technologies can be maximised (and social risks accounted for).

Expected impacts

Proposals under this topic are expected to contribute to:
- Understand the socioeconomic and behavioural impacts of technology options aiming at decarbonising transport and urban mobility;
- Maximize the socioeconomic benefits of low carbon transport technologies;
- Balance the (societal and industrial) speeds in order that transitions to low carbon futures are

made in a cost-effective and sustainable way in both perspectives;
- Raise the competitiveness of the European in developing social oriented technological solutions.
- To contribute to a socially responsible World industry.

Further suggestions regarding this topic

Research and Innovation Action

3

Suggested title of the research topic	**Promoting decarbonisation through efficient and harmonized carbon pricing and taxation schemes**
Programme	Transport
Timing/year Work Programme	2018 - 2020

Indication on "research area"
Socioeconomic

Specific challenge
The 2011 EU White Paper sets out policies for reducing the environmental impact of transport systems, with a reduction of Green House Gas (GHG) emissions of 60% against 1990 levels by 2050. This is acknowledged to be an extremely demanding target. One of the ways of contributing to decarbonisation of transport is through setting up the right incentives in the sustainable use of transport systems for all transport modes. The 2011 Transport White Paper acknowledges this point by saying: "Price signals play a crucial role in many decisions that have long-lasting effects on the transport system. Transport charges and taxes must be restructured in the direction of wider application of the 'polluter-pays' and 'user-pays' principle". In spite of all these advantages, the present situation regarding infrastructure charging, financing and taxation within the EU is not optimised to promote decarbonisation. Infrastructure charging approaches are not homogeneous across modes, or between countries. Two main market-based instruments are being used to incentivise carbon reduction —energy taxation and emission trading systems (ETS). Taxation is currently applied to fuels used in land transport (especially the road), while the ETS applies to other energy sources in some transport modes such as aviation sector. In the case of aviation and shipping, which are both international industries, attempts at the introduction of regional market based measures, such as the inclusion of aviation in 2012 in the EU ETS, have been controversial and raised objections within the international community.

Scope
Proposals under this topic shall address the following aspects: 1) Make a cross-country and cross-mode comparison of carbon pricing and taxation approaches in the EU and other relevant countries in the world in order to evaluate the inefficiencies —such as lack of incentives, competition distortion, etc.— stemming from the differences across countries and the lack of harmonization across transport modes. 2) Outline the most suitable carbon pricing and taxation approaches to be applicable to different transport modes on the basis of a set of strategic objectives such as efficiency, harmonization, affordability, etc. 3) Identify barriers (legal, government disagreement, public opposition, etc.) that may hinder the implementation of more rational and harmonized carbon pricing and taxation schemes to different transport modes; and identify the measures to overcome them. 4) Quantify the expected impacts (carbon reduction, modal split change, etc.) in 2050 of implementing more efficient carbon pricing and taxation schemes.

Expected impacts
Proposals under this topic are expected to contribute to reach the following impacts: • Understand the main barriers towards implementing more efficient and harmonized carbon pricing and taxation schemes, and set up means to overcome them. • Quantify the reduction of carbon emission produced by different transport modes either though incentives to use lower carbon modes and vehicles, or through promoting innovation in the development and deployment of low-carbon engines applicable to all transport modes. • Set up measures to guarantee a fairer competition framework across modes and types of vehicles.

Further suggestions regarding this topic
CSA or RIA

4

Suggested title of the research topic	Socio-economic evaluation, environmental and behavioural effects of connected and automated transport systems in urban environments
Programme	Transport
Timing/year Work Programme	2018-2020

Indication on "research area"

Socio-economic and behavioural research & Urban Mobility

Specific challenge

The automation of vehicles and advances in information and communication technologies are expected to shape future mobility and bring several benefits to industry and the economy as a whole. Several EC-funded projects already contributed to advance the field of vehicle automation and available roadmaps from several other European Platforms on automated transport and related issues (C-ITS, iMobility Forum, ERTRAC, EPoSS, etc.) already showed the remaining gaps to be solved. Following the Amsterdam Declaration on "*Cooperation in the field of connected and automated driving*" of 14th April 2016, connected, cooperative and automated (*) driving developments should come together to harvest societal benefits. Since the industrial sector is evolving at a much higher pace towards fully automation whereas people's behaviour and social acceptance seems to be much slower, more research is required to be pursued in Europe (and beyond Europe) to bring down social and behavioural barriers and unlock social risks related to technology deployment.

Scope

Proposals under this topic shall address at least three of the following aspects:
- Understand through behavioural experiments how people perceive and value future use of connected and autonomous vehicles' for specific purposes such as fully automated vehicles to tackle congestion in commuting transport corridors (public transport, shared vehicle schemes with level of service, etc.), adoption of automated taxis (e.g. night-time vehicle schemes), automated platooning for commercial purposes, last mile solutions with automated cyber vehicles, etc.. Options to be explored shall encompass the full market potential and application of these technologies to solve mobility and accessibility problems in cities.
- To assess the expected social and economic benefits of the most valued mobility options by users (passenger and commercial vehicles), considering their range of effects including equity in accessibility, environmental, safety, increased comfort and efficiency (possible decrease in energy consumption, congestion, etc.);
- Understand which factors and measures can better unlock and foster the adoption of connected and autonomous vehicles.
- Using city corridors as test-beds and living labs, the proposal shall assess how connected and automated transport can improve, for example, the access of the elderly and impaired people to city centres (access to health services, leisure activities, etc.);
- How to optimize connectivity (internet of things), data integration and use of autonomous vehicles for new public transport options for vulnerable communities, through small-scale experiments (neighbourhood level).

Expected impacts

Proposals under this topic are expected to contribute to:
- To reduce social and behavioural barriers related to connected and autonomous vehicles and unlock social risks related to technology deployment.
- To reduce uncertainties related to the development and acceptability of fully automated vehicle options for both passenger and commercial purposes and use data to generate value-added services (e.g. seamless door-to-door services for impaired and other vulnerable users such as the elderly).

• To demonstrate the expected social and environmental benefits of future automated options in urban areas and increase peoples' awareness and acceptance.
Further suggestions regarding this topic
Research and Innovation Action

Note:

(*)

Following the Amsterdam Declaration mentioned above, connected includes cooperative driving (communication between vehicles and also with the infrastructure, C-ITS). Automated driving refers to the capability of a vehicle to operate and manoeuvre independently in real traffic situations, using on-board sensors, cameras, associated *software*, and maps in order to detect its surroundings.

5

Suggested title of the research topic	Assessing the mobility behaviour of tourists in port cities for reorienting transport solutions to boost the blue economy at the local and regional levels
Programme	Transport
Timing/year Work Programme	2018-2020

Indication on "research area"
Urban Mobility and/or Socio-economic and behavioural research

Specific challenge
Following the European Commission, around 74% of goods entering or leaving Europe go by sea, making European ports important economic gateways for moving freight transport in the internal market and across the World. European seaport cities are also important nodes of the blue economy in the cities/regions where they are located. Several ports are asked to accommodate increasing maritime passenger traffic (e.g. due to increasing tourism traffic of cruise shipping) which seems to conflict with maritime freight activities. Tourism-related mobility is also considered a challenge for global climate change mitigation. Several measures are aimed to reduce the climate and environmental impacts of port operations and international shipping.

Given the rapid growth of passenger transport (tourism), several investments need to be advanced to solve existing bottlenecks in ports' hinterlands and tourism space to boost the local and regional economy: these may include to improve port intermodality, enhancement of transport security and additional mobility services for tourists to improve accessibility to city facilities.

Although aggregate tourism statistics exist, few information is available related to the mobility behaviour of tourists in seaport cities. Another challenge in understanding and predicting tourists' mobility movements in time and space is to assess which factors are underneath observed behavioural patterns and to explore use of more energy efficient and low-carbon transport options. Also, it is important to planning to increase seaports resilience to climate change/extreme weather events/other emergency situations, developing new governance port models with improved transport management and evacuation models making use of big data and new technologies.

Scope
Proposals under this topic shall address, at least, three of the following aspects:

- Examination of a set of different seaport case studies and contexts throughout Europe, in order to obtain different seaport (and city) profiles;
- Analysis of behaviour of tourists within the "seaport ecosystem" in time and space; analysis of bottlenecks for an efficient maritime freight and passenger transport; understand the effect of seasonal traffic peaks of tourism in the transport system serving the seaport;
- Development of behavioural choice experiments to assess alternative transport choices and improvement opportunities (examples: to greening transport and provide as quick access to cultural sites in the city); environmental cost-benefit analysis of alternative seaport scenarios (including most valued transport chain options);
- Optimisation of the entire transport chain within the "seaport ecosystem" (including the city) using big data, exploring the use of more efficient and low carbon transport options, including new mobility services for improving access of tourists to city activities and cultural heritage sites;
- Develop new port governance models to increase the "seaport ecosystem" resilience to climate change/extreme weather events/other emergency situations; use of big data and new technologies to improve evacuation models and multi-modal transport management.

Proposal shall engage cities, port authorities and other stakeholders through supporting research networks.

Expected impacts
Proposals under this topic are expected to contribute to:
• Understand the mobility behavioural of tourists in seaports and the effects of seasonal traffic peaks; to improve seaport connectivity and boost tourism industry and the blue economy. • Improve European seaports competitiveness, through optimisation of transport chains and their safe and comfortable transport connectivity to city facilities. • Improve port governance models to increase their resilience to climate change/extreme weather events/etc. for a sustainable integration of urban freight transport and tourism cruise shipping.
Further suggestions regarding this topic
Research and Innovation Action

6

Suggested title of the research topic	Robust monitoring and evaluation schemes for implementing sustainable urban mobility plans (in cities that are culture heritage sites)
Programme	Transport
Timing/year Work Programme	2018-2020
Indication on "research area"	
Urban Mobility and/or Socio-economic and behavioural research	
Specific challenge	
The EC Transport White Paper (EC, 2011) referred the need to examine the possibility of a mandatory approach for Sustainable Urban Mobility Plans (SUMPs) for cities of a certain size. Although some cities in Europe already developed their SUMPs, many others have not yet started the process. Therefore, it's opportune to form a multi-stakeholder platform comprising cities at different development stages of the SUMP process (advanced cities in Europe and outside Europe, learning/starting, etc.) supported by research networks. Specific European cities such as those that have historic enters or are cultural heritage sites require that SUMPs would encompass robust/effective tools for monitoring and evaluation. Use of smart (specific, measurable, achievable, relevant, time-bound) targets deserve special attention as SUMPs are holistic and dynamic. For this purpose, the platform is expected to be an effective means to share experiences across the network of cities, including good practices on making use of big data and new technologies for a more efficient SUMP development.	
Scope	
Proposals under this topic shall address the following aspects: • Establish a multi-stakeholder platform with robust research networks supported by cities (as living labs at different stages in the SUMP development) in Europe and outside Europe (with completed SUMPs, ongoing SUMPs, not yet started SUMPs, etc.); especial attention shall be given to capital cities with historical centres of high economic and social value or other cities that are cultural heritage sites; the network shall include, at least, 6 cities from Southern European countries. • Build a catalogue of experiences (good practices) to be shared through the platform, focusing on use of smart targets, effective tools for monitoring and evaluation and cost-effectiveness indicators, use of big data, ICT and other technologies for SUMP development. Engaging cities from outside Europe with historical centres to share experiences with those in Europe will be a value-added.	
Expected impacts	
Proposals under this topic are expected to contribute to: • Identify good practice databases and opportunities for developing new methods or processes, focusing on SUMP monitoring and evaluation aspects, including the use of smart targets and indicators of cost-effectiveness of measures. • Integration of transport (multimodal) and land use; to promote walking and cycling and innovative low carbon modes and new services to meet mobility needs of the most vulnerable users living or visiting cities with historic centres/cultural goods. • Increase the social and economic value of cities with cultural heritage.	
Further suggestions regarding this topic	
Coordination and Support Action	

7

Suggested title of the research topic	User preferences for transport system servitisation up to 2020
Programme	Transport
Timing/year Work Programme	2018 - 2020
Indication on "research area"	
Urban mobility & Socio-economic and behavioural (new transport paradigms; digital economy; new transport services; business models for servitisation)	
Specific challenge	
A whole new type of services and operational practices based on technological and other innovations for traffic, mobility, their control and management are being established. This development focuses on the servitisation of transport in line with the MaaS (Mobility as a Service) approach. These new, often digital services aim at enhancing the productivity and effectiveness of the transport system as well as promoting more environmentally friendly, customer oriented and safer transport, while creating new international business opportunities. The challenge is, however, to understand what are the true mobility preferences of the late 2010's travellers. In other words, how would contemporary people really like to move from one place to another and use (or not) the proposed new services? Have the preferences changed during the past ten years due to digitalisation? Are the currently used models for travelling and mobility behaviour out-dated?	
Scope	
The current models and studies related to travel behaviour and environmental impacts of travelling are mainly based on trips and vehicle kms that have been made. They do not take into account the numerous new digital service choices urban traveller currently has before the trip and how they might affect his/her selection of mode of travel and trip length. The scope of future research should be on new approaches/survey- and other methodologies to identify the unstated mobility preferences of transport system users as the basis for transport strategies and environmental and economic assessments of new services. The new approaches would complement the old methodologies like National Transport Surveys.	
Expected impacts	
New knowledge on the future mobility needs of the people for the basis of national and European transport policies and strategic plans.	
Further suggestions regarding this topic	
RIA	

8

Proposal for programming a H2020 research topic	
Suggested title of the research topic	**Socio-economic optimisation of road maintenance programs**
Programme	Transport
Timing/year Work Programme	2018 - 2020
Indication on "research area"	
Infrastructure / Smarter design, construction and maintenance	
Specific challenge	
- Road condition is associated with economic development. - Resources devoted to the upkeep of road infrastructures decrease (i.e. tighter fiscal policies). - How would maintenance programs be optimised? - Cost-benefit analysis of road maintenance.	
Scope	
- Optimal maintenance programs of road infrastructure given the various socio-economic characteristics of the considered territory (people needs, ecological, economic and social environment). - Spatial analysis of road maintenance programs.	
Expected impacts	
- Cost-benefit analysis of road maintenance is a key political issue. - Adapting road maintenance program to its local context.	

9

Suggested title of the research topic	Integrating roads in its socio-ecological context
Programme	Transport
Timing/year Work Programme	2018 - 2020
Indication on "research area"	
Infrastructure / Smarter design, construction and maintenance	
Specific challenge	
- Adapting transport networks to the socio-ecological conditions of the surrounding landscape. - Greening existing and future road infrastructures.	
Scope	
- Relationships between landscapes, ecosystems and infrastructures. - Mitigation hierarchy (avoid, minimize and offset ecological impacts) and cost-benefit analysis.	
Expected impacts	
- Integrating road transport infrastructures in its local (socio-ecological) context. - Developing technical and critical tool for project developers and public policies. - Strengthening the linkages between transportation economist and practitionners and scientists working on ecology.	

10

Suggested title of the research topic	Social inclusion and new mobility options
Programme	Transport
Timing/year Work Programme	2018 - 2020

Indication on "research area"
Socio-economic and behavioural research
(or Urban Mobility)

Specific challenge
Digitalisation leads to various new mobility solutions, i.e. by changing the way existing modes can be accessed, shared or connected. As an example, shared individual mobility has been expanded in the last years with a great variety of different modes and concepts resulting, such as flexible or station based car- and bike sharing offered by private companies, but also private people lending their vehicles on a flexible per-time basis. Most of these new modes operate in public space and contend with public transport services, mostly without paying fees to authorities for doing so or further regulation or obligation to contract all users willing.
However not everyone benefits from these developments: limited payment options can exclude lower income people, digitalisation can be challenging to handle for elderly or modes may not be suitably accessible to physically handicapped people. Hence there is need to define which modes are regarded as public modes in the future, and how social inclusion can be achieved for new modes.

Scope
• Analysing existing new modes (i.e. with respect to user groups) with special attention to cover a broad variety of social groups, in selected representative case studies;
• Define the border between private and public modes (i.e. based on theories derived from public or institutional economics);
• Develop a methodology to estimate the capabilities in using new modes for various social groups, considering their financial, cognitive or physical capabilities;
• Calculate distribution effects of which person groups can use new modes that are being create because of advancing digitalisation.

Expected impacts
• Understanding of possibilities, barriers and limitations regarding new mobility options;
• Economic assessment (regressive or progressive distribution) of beneficiaries and deprived persons for selected cases;
• Enabling policy makers to better assess the social effects of new modes.

Further suggestions regarding this topic
RIA
Two-stage
European Disability Strategy (2010-2020)

11

Suggested title of the research topic	Impact of EU and national policies to obtain seamless travels. Enhancement of multimodal trips from the passenger viewpoint in order to decrease the car pressure and reduce GHG emissions. And to combine people travels and freight organisation to fulfil society needs.
Programme	Transport (Urban Mobility, Logistics and Socio-Economic and Behavioural Research)
Timing/year Work Programme	2018 - 2020

Indication on "research area"
Passenger and freight transport; Urban mobility: impact of European and national policies

Specific challenge
EU and national policies are intending to promote sustainable mobility. The need to combine people and freight mobility is becoming more and more important to fulfil society needs. 1. Combination of transport modes to increase the use of collective transport forms (urban public transport, sharing of transport modes such as car-sharing and car-pooling) The challenge is to reduce the use of private cars as "solo-users" by offering different solutions of combining transport modes including the use of cars during intermodal trips. There is a need to understand of how this could decrease the GHG emissions, reduce traffic jams and bottlenecks on the TEN-T networks. (What quantity of energy or emissions are avoided if there is a certain decrease of private car use with only the driver on-board. Is there a possibility to combine different usages of transport modes and for what kind of intermodal trips? What kind of economy realised (less investments in roads transport infrastructures)? 2. Organisation of freight delivery in urban areas. The challenge is to understand how to combine freight and urban delivery and people strategy to find goods they need; With the development of e-commerce how to organise the reception of parcels. How determining the best way to reduce environment impacts. Do people have to fetch their orders in freight hubs or does the merchandise be delivered directly at their home? Research must be made on the quantification of these actions (to determine) on the GHG emission and the decrease of energy consumption. 3. What kind of solutions in cities and in less populated areas? The challenge is to understand if solutions performed at urban and large cities areas are fitted for less populated areas. Are they inducing more trips or less? What kind of impacts on environment? What result on social organisation? What impact of rules and transport policies at EU level and national levels for reaching these objectives?

Scope
To apply the findings of previous EU funded research (NODES, City-HUB, etc…) and test their results in terms of GHG emissions and energy consumption reductions. Favour responsible mobility of people and goods and enhance society needs.

Expected impacts
Reduction of environmental impacts. Fulfil population needs in term of social inclusion, mobility and consumption by lowering their impacts on GHG emissions and energy consumption.

Further suggestions regarding this topic
RIA

Contact

17

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