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3	AVL List GmbH	AVL	Austria
4	BMT Group Limited	BMT	United Kingdom
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EXECUTIVE SUMMARY

SETRIS D1.3 aims to define a truly integrated long distance transport system. ACARE and ERTRAC roadmaps broadly tend to have a higher focus on passenger aspects while WATERBORNE and ALICE include more aspects related to freight. ERRAC's roadmaps consider both passenger and freight. This document attempts to provide an understanding of the conditions required to achieve a truly integrated long distance passenger transport system. To do so, an overview of the status of the related roadmaps is briefly introduced and assessed, with particular emphasis on cross-modal aspects already taking place between ERTRAC, ERRAC, WATERBORNE and ACARE. This is then put into context with the aspirations of the transport White Paper (original and its midterm review) as well as those included in the EC's transport advisory group (TAG), both of which include visions of what the European transport system should be and do. This assessment shows that there is no clear, specific long distance passenger transport ideal, with perhaps the exception of the following competitive and sustainable transport target: *"[…] an efficient core network for multimodal intercity travel and transport*". Instead a number of interesting and sometimes ambitious priorities for each of the individual modes are largely targeted. It is these single mode priorities that can pose the biggest limitation to achieve a truly integrated passenger long distance transport offer. This shortcoming is also highlighted in the TAG report of 2014.

Instead, for a truly integrated long distance passenger transport system to become a reality connectivity between i) road and rail; ii) road and air; iii) rail and air is critical. This deliverable briefly outlines a small number of targets, potential obstacles and regulatory issues for each of these three aspects where the ETPs with the support of SETRIS can act. While it is possibly naïve to define what a long distance passenger transport system is, a good attempt would be to adopt ACARE's vision to provide 90% of all European long distance travel door-to-door within four hours, always in the context of addressing the three long-distance essential connectivity ingredients described. This also relates to the *ERRAC-ERTRAC-WATERBORNE-ACARE-ECTP Task Force's* vision of an integrate transport systems which is faster, safer and reliable.

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1. INTRODUCTION

SETRIS aims to deliver a cohesive and coordinated approach to research and innovation strategies for all transport modes in Europe. SETRIS vision is to identify synergies between the transport sector European Technology Platforms' (ETPs) strategic and research and innovation agendas (SRIAs) and between these and relevant national platforms. ETPs are industry-led stakeholder forums, recognised by the European Commission as key actors in driving innovation, knowledge transfer and European competitiveness (European Commission, 2013). The five transport sector ETPs, in alphabetical order, are:

1) Advisory Council for Aviation Research Innovation in Europe (ACARE);
2) Alliance for Logistics Innovation through Collaboration in Europe (ALICE);
3) The European Rail Research Advisory Council (ERRAC);
4) European Road Transport research Advisory Council (ERTRAC);
5) Waterborne.

This deliverable D1.3 aims to explore what aspects define a truly integrated long distance passenger transport system, identifying synergies between ETP roadmaps and strategic research implementation agendas (SRIAs) maximising the efficiency and effectiveness of transport.

The document approaches this through structuring the existing research and innovation roadmaps developed by the relevant ETPs with a focus on synergies between modes. The methodology used has been based on a review of relevant roadmaps, assessing their applicability to a multimodal system while contrasting it with the vision and challenges described on two key documents: the transport White Paper (and its mid-term review) and the transport advisory group report of 2014. This methodology is common to both this deliverable D1.3 (long distance passenger travel) and D1.2 (urban mobility). However, while D1.3 focuses on delivering a critical assessment based on the TAG challenges and ETPs documentation, D1.2 attempts to quantify it using a limited sample illustrating the potential of the methodological approach This will continue to be updated with further data from both urban and long distance passenger travel.

The structure of the deliverable is as follows: section 2 summarises how and in what ways roadmaps and other related reports address long distance transport system; section 3 synthesises the main conditions expected to be met by a truly integrated long distance passenger transport system with a structure of cross transport sector ETPs road-mapping/route-mapping activities including targets definition and identification of obstacles and regulations; section 4 provides some conclusions including how the ETPs with the aid of SETRIS can contribute to improve the understanding of a truly integrated long distance passenger transport system.

2. ROADMAPS FOR INTEGRATED LONG DISTANCE PASSENGER TRANSPORT

Long distance mobility generally involves the use of at least two separate transport modes at least once. This mobility pattern usually requires a short trip(s) to a major hub for accessing a long distance transport mode provider (e.g. high-speed rail, aircraft) and a further trip(s) to arrive to the final destination (Figure 1).

Figure 1. Long distance passenger transport modal outlook between two nodes

How long 'long distance' is for passenger trip has been documented as generally a distance above 100 km based on past and more recent surveys and its application to the travel demand model for Europe (Axhausen et al., 2003; Frei et al., 2010; Rich and Mabit, 2011). For tours – a trip chain – the distance is above 200 km (Axhausen et al., 2003; Rich and Mabit, 2011). It should be noted that in spite of the guidance for the distance threshold given above, the exact cut-off and type of distance were never harmonised and vary from country to country and survey to survey (Frei et al., 2010). Some issues to note are that it is a rare case that long distance travel is a part of daily mobility. For the purpose of the work in SETRIS the 'tours' definition of over 200km journeys is considered to be the most fitting to represent the multimodality dimension of the long distance passenger trip

Availability, accessibility and connectivity (physical or otherwise) between primary and secondary transport networks become key enablers to deliver a seamless end-to-end journey. This is particularly relevant at key nodes such as major railway stations, airports, coach stations and ports. The importance of connectivity between these hubs is recognised and well-placed in the transport White Paper (2011) targets to transform the transport system (mainly for passenger purpose) into:

1. An established framework for a European multimodal transport information and management system by 2020; and
2. Connected core airport network to the rail network (preferably high-speed) by 2050. Indeed, this approach should be extended to all long-distance transport modes, e.g. section 23: '*They need to be accompanied by the consolidation of large volumes for transfers over long distances. This implies greater use of buses and coaches, rail and air transport for passengers*'

Integrated transport systems is a term commonly used to describe systems providing door-to-door passenger transport services (Janic and Reggiani, 2001). It is based on both horizontal and vertical integration that support each other. For passenger transport, there are three key characteristics of integrated transport that have been defined by the EU:

1. *Intermodality* understood as a transport system that allows at least two different modes to be used in an integrated manner in a 'door-to-door' transport chain;
2. *Interoperability* understood as the use of standardised and compatible infrastructure, technology, facilities, equipment and vehicles dimensions;
3. *Interconnectivity* understood as the horizontal coordination and synchronicity between modes.

These three key terms described were the framework for an optimal integration of different transport systems (modes) to enable their efficient and cost-effective use through seamless, customer-oriented door-to-door services on one side and through favouring competition between transport modes on the other (Janic and Reggiani, 2001).

Deliverable D1.1 used three types of key documents to conclude the four SETRIS dimension challenges outline namely: physical, operational, economic(al) and political. Those three documents are representing different bodies/institutions that influence the way strategic research and innovation development had been established. The first type of document reviewed was Transport Advisory Group (TAG) report that represents independent experts' views over research challenges and needs towards the Horizon 2020 research framework programme and beyond (up to 2050). The second type of documents were the five transport sector's European Technology Platform (ETP)-based initiatives that represent industry voices of research and innovation agendas. The third type of document were cross-ETPs research and innovation roadmaps. This section aims to outline how each type of document addresses 'integrated long distance transport system' for passenger mobility.

2.1. TAG REPORT

The TAG report (2014) recognises a number of integration types: the first one is the *sustainability* context that embraces social, environmental and economics subjects; the second is integration across *physical* 'transportation' dimensions (i.e. modes, traffic, spatial scales, infrastructure and services, etc.); and the third type is a *sectoral* integration across 'business' sectors (i.e. energy, ICT, materials, manufacturing, retailing, provision of public service, etc.). For 'long distance transport system' as particularly emphasised for SETRIS D1.3, the integration demand would certainly need to cover those definitions, so it encompasses physical, political, economical and operational dimensions. The TAG report addressed a high level strategic research agenda. Most of the TAG key challenges are a relevant guide for research activities to achieve a 'truly integrated long distance transport system'.

The TAG report emphasised the importance of a number of key assumptions of transportation research, the first being that 'transport' is a derived demand and so dependent on activities of other sector. The implication is towards interfaces between transport technology, social acceptance and behavioural change; emphasis on integration and the dismantling of the various silos that traditionally existed in transport research; exploitation of the wealth of new data; and broader definition and assessment of transport externalities.

In more detail, each key challenge implication towards an integrated long distance transport system assessment can be illustrated with examples as can be seen in Table 1. All of the examples given are supported by the transport policies (i.e. White Papers) and ETP roadmaps for its effectiveness and efficiency. For example: key challenge No 2 on climate change implication for long distance transport system for passenger (Table 1) can be addressed with shifting the balance between modes (modal-shift) policy as part of the key policies for integration of transport in sustainable development as promoted in the 2001 Transport White Paper (European Commission 2001, p.10).

Table 1 Long distance transport system for passenger towards the TAG challenges

No	Key Challenges	Long distance transport system for passenger
1	Urban nexus problems (congestion, pollution, accidents and inaccessibility)	Improving intermodal interfaces between urban and inter-urban: public transport terminal, train station, airport, port
2	Climate change (i.e. GHG, noise)	Modal-shift towards sustainable transport option; improving vehicle technology, electrification, etc.
3	Demographic trends (aging population)	Improving facilities and operations towards the trends, etc.

4	Data management opportunities	Collaboration for multi-modal integrated information services for connectivity
5	Risks (high-impact low probability events)	Improving vehicle technology; passenger data sharing;
6	Resilience (extreme weather)	Communication and data sharing
7	Reducing loss of life	Communication and data sharing, better operations and procedures in place, better qualified human resources, etc.
8	Fossil fuel dependence	Modal-shift towards sustainable transport option; electrification; alternative fuel technology
9	Competitiveness	EU multi-modal transport system as sustainable global transport model
10	Innovative technologies, materials and processes for infrastructure	Cross ETPs collaboration (including the non-transport ones)
11	Maximising resource utilisation	Modal-shift towards sustainable transport option, ETP cooperation (incl. non-transport ones), improvements in Life Cycle Costs (LCC) and reliability, availability and maintainability (RAMs) strategies and optimal consumption and waste, etc.

2.2. TRANSPORT ETPS ROADMAPS

There are five transport sector ETPs which own technology roadmaps to address the challenges set by the European Union since the launch of the transport White Paper (2001). ERRAC[i] (established in 2001) for rail transportation, ACARE[ii] (est. 2001) for air transportation, and ERTRAC[iii] (est. 2003) for road transportation, were established to address European strategic research and innovation (in technology) agendas (SRIAs). Latterly, Waterborne[iv] (est. 2005) and ALICE[v] (est. 2013) were formed to address water and freight transportation technology and beyond. Within this Deliverable (D1.3), each of the ETP roadmaps will be reviewed towards achieving a 'truly integrated long distance transport system'.

ERRAC

ERRAC stakeholders have formulated a number of key strategic research and innovation needs in the form of roadmaps towards 2030 and beyond covering passenger and freight transport. Such key themes, that relate to the long distance transport system, include energy; IT; passenger and freight modal shift and decongesting transport corridors; safety and security; strengthening competitiveness; and Rail Route 2050. One emerging concept for rail sector development has been the formulation of 'customers' driven demand to boost its competitiveness (ERRAC, 2014)[1].

[1] CUSTOMER: Capacity, User, Safe and secure, Technological breakthrough, Optimised design and operations – connectivity - interoperability, Maximised value for money leading to modal shift, Efficient and environmentally sustainable, Reliable and resilient, Skills

ACARE

Given the nature of air travel, ACARE's focus is understandably long distance journeys for both passenger and freight. ACARE has defined in detail roadmaps to encompass a number of strategic research and innovation goal areas related to technology, knowledge, concepts, policy, training and education needs, etc. Two of those goal areas are the key objectives for the ACARE vision:

1) to meet societal and market needs, and
2) to maintain and extend industrial leadership.

The other pillars are concerned with issues such as the environment, energy, safety, security, and prioritising research and education (in line with those of ERRAC for instance). A key target for which ACARE would require close collaboration with the other transport ETPs in order to fulfil it is to offer to 90% of travellers a maximum of 4 hours door-to-door journey (within Europe) by 2050.

ERTRAC

ERTRAC roadmaps can generally be seen as the most comprehensive set among the ETPs with a significant number of working groups (WGs) established that produce numerous roadmaps for different purposes. Related to the long distance passenger transport system, the following WGs are relevant:

- Long distance freight WG;
- Energy and environment;
- Safety and security;
- Global competitiveness.

One of the key objectives of its latest strategic research and innovation agenda is the ERTRAC vision to increase road transport system efficiency (i.e. reliability of transport schedule) to 50% from 2010, by 2030. It is noticeable across all the roadmaps that one of the main themes addressed by ERTRAC focuses on urban mobility for both passenger and freight.

WATERBORNE

With exceptions such as some inland waterways and short sea shipping (ferry) services, maritime transport for long distance tends to serve the logistics sector. The strategic research and innovation agenda set by the WATERBORNE stakeholders in 2011 seems tailored to match this need in three key pillars: safety, competitiveness and managing growth and changing trade patterns. For long distance (freight) transport, WATERBORNE is collaborating with ALICE to formulate its roadmap as described in the next section. Specific provision for long distance passenger transport is not currently prioritised.

ALICE

ALICE is the technology platform designed to address a truly logistics agenda of the European transport system. ALICE adopted the concept of Physical Internet – a metaphor of treating freight (transport) system as internet – to roadmap its strategic research and innovation agenda. There are five working groups formed, one of which was most relevant to the long distance transport system: corridors, hubs and synchromodality. Being the youngest ETP in the transport sector, ALICE has been benefitting from the exiting ETPs' experience of (technology) roadmapping to contribute to the ALICE strategic research and innovation agenda. Further detail of the particular ALICE WG dedicated for

long distance freight transport system is not discussed in this deliverable but in Work Package 2 (WP2).

2.3. CROSS ETPS ROADMAPS

There are four cross ETPs roadmaps that represent and address a cross-sectoral and cross-modal integration. Two of those cross ETPs collaboration are relevant to the understanding of a truly integrated long distance transport system with only one being relevant for passenger mobility i.e. the cross-modal transport infrastructure innovation cross-ETP roadmap.

Cross-modal transport infrastructure innovation

This particular cross ETPs initiative is involving all modes of transport represented by ERTRAC, ERRAC, WATREBORNE, and ACARE, plus the European Construction Technology Platform (ECTP), a non-transport sector ETP. This cross ETPs collaboration, also known as ERTRAC-ERRAC-Waterborne-ACARE-ECTP Task Force (Joint ETP Task Force, 2013), bears the aspiration of delivering transport innovation that is driven by end user needs (passenger as well as freight). The Task Force defined these transport needs in terms of faster, cheaper, more comfortable, reliable and secure transport from origin to destination (or in more popular terms 'from door-to-door' including the 1st and last mile) which are independent from the modes used.

The Task Force envisages by 2050 a Europe that has an integrated transport infrastructure enabling a single European transport area with reference to the White Paper on Transport (2011) and the Connecting Europe Facility/TENT-T framework (2012). By 2030, the vision is for research and innovation enabling an improvement of 50% in infrastructure performance, and risk and cost decrease against a 2010 baseline, as well as enabling seamless door-to-door services for passenger and freight, via three key pillars/domains:

1) Construction and maintenance;
2) Supporting systems and services; and
3) Governance, management and finance.

3. SYNTHESIS

Deliverable D1.1 *Challenges Outline*, suggests the adoption of ACARE's 4 hour mobility goal i.e. *90% of travellers within Europe to be able to complete their journey, door-to-door within 4 hours. Passengers and freight are able to transfer seamlessly between transport modes to reach the final destination smoothly, predictably and on-time.*

Following the assessment made so far in this D1.3 deliverable, this goal is still seen as the key target that integrates across the entire sector ETPs. Strategic research and innovation developments have been implemented over the past decade via roadmaps .from each ETP. Recently, the cross ETPs initiative to synchronise the roadmaps between ETPs and within the remit of the transport White Paper is a good addition to this process.

The transport White Paper (European Commission, 2011) highlighted the importance of a truly integrated long distance transport system with two statements on its vision dedicated especially to the cause to achieve a competitive and sustainable transport system:

1) An efficient core network for multimodal intercity travel (passenger) via (European Commission 2011, p.6):

   - Consolidation of large volumes of transfers over long distances, that implies greater use of buses, coaches, rail and air transport for passenger and, for freight with multimodal solutions relying on waterborne and rail modes for long-hauls;
   - Better modal choices through greater integration of the modal networks with support of IT (i.e. integrated online information, electronic booking and payment system) to facilitate multimodal travel;

2) A global level-playing field for long-distance travel via (European Commission 2011, p.7):

   - Optimising airport capacity and absorbing medium distance traffic with (high-speed) rail;

Recent analysis of the public consultation on midterm review of the above White Paper (European Commission, 2015) demonstrates that its objectives) are still valid, although it highlights that the right initiatives are still not optimal and lacking in some cases. The midterm review, furthermore, draws messages from across different transport sector stakeholders representing different modes that can be summarised as follows (European Commission 2015b, p.24):

1) *Road:* strongly in favour of equal treatment of modes with priority of co-modality agenda over modal shift (more than 50% of road freight moving over 300 km to shift to other modes such as rail or waterborne transport), and technological innovation over penalization of externalities;
2) *Rail:* asks for more resources from investments and better internalization of external costs in other modes;
3) *Air:* complains about particular (air related) overregulation and burdens by the legislation;
4) *Maritime*: low progress on regulatory and technical burdens especially on short-sea shipping;
5) *Inland waterways*: asks for more attention and consideration of the benefits of the mode.

Beyond the cross-modes preferences as described above, the midterm review also demonstrated different preferences and priorities for EU transport sector challenges from across different industry sectors which can be summarised as (European Commission 2015b, p.5):

1) Industry associations prioritise addressing infrastructure, oil and energy prices, and administrative and regulatory burden;
2) National administration (central/local) and public authorities prioritise addressing GHG emissions, financing of infrastructure, and air and water pollution;
3) Private companies prioritise addressing innovation, oil and energy prices, air and water pollution, and technology change; and
4) Workers organisations/ trade unions prioritise addressing working conditions, safety and social responsibility.

The document does not raise any particular issues with regards to the agenda of a truly integrated long distance transport system reported within the midterm review. However, the mid-term review, as well as the cross-modal review carried out in this deliverable, shows that the different priorities

from each mode can potentially be the biggest challenge for integration. This shortcoming is well described in the TAG report that acknowledges lacking of coordination of modes caused by 'silo' management of each mode and a platform for integrated multi-modal information (McKinnon et al. 2014, p.6).

The TAG report (2014) positions itself to provide advice on both the structuring and delivery of the Horizon 2020 research programme 2016-2018 call. It defines a three-dimensional framework in addressing research and innovation challenges where the transport system *integration* for efficiency, sustainability, competitiveness, resilience, safety, accessibility and inclusiveness, is at the front side of the block (Figure 2) with detailed description of elements for the integration needed. The other two dimensions are developments/interventions (through dissemination, commercialization and implementation) which can help to meet the challenges, and innovation chains through which ideas emerging to meet the various challenges must pass as they proceed from inception to implementation.

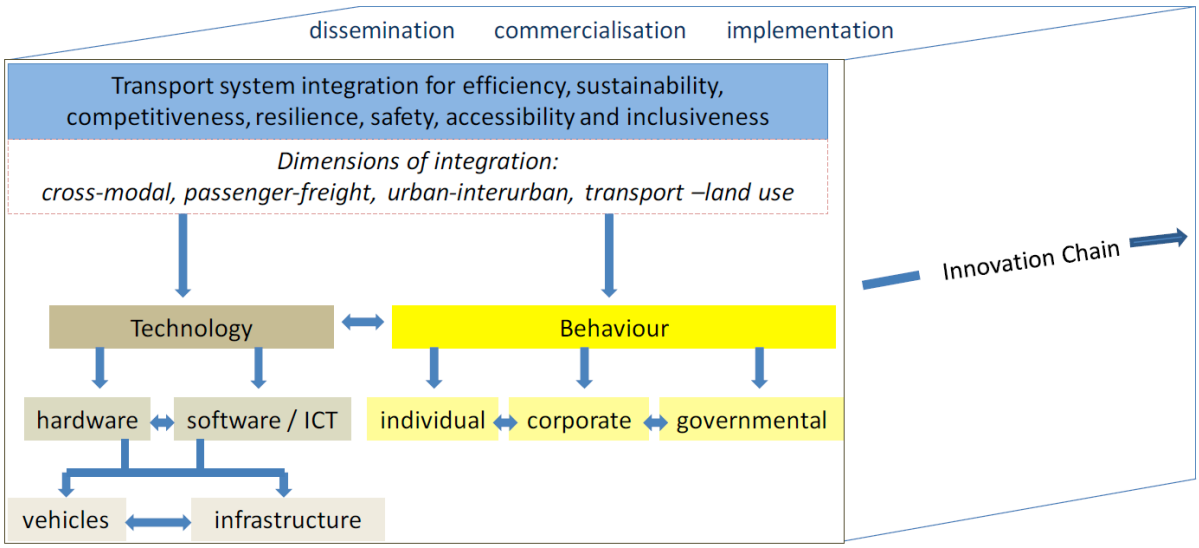

Figure 2 TAG Challenges three-dimensional framework (source: McKinnon et al. 2014*)*

The assessment carried out in this deliverable suggests that for materialising an integrated transport system, ETPs have to work hand-in-hand to agreeing on terms and vision. It seems obvious that when a particular mode is dominating a certain market (i.e. air, land, sea) then it should become easier to identify where the overlap between modes potentially bearing competition occurs leading to a need for solutions to be found. Recent development of cross ETPs roadmaps demonstrates on-going efforts across different (transport) stakeholders to agree on those terms and vision.

For a truly integrated long distance passenger transport system, connectivity between road and rail, road and air, and rail and air are critical focus areas where efforts can be explored in understanding key issues as discussed below.

Road and rail

Collaboration between ERRAC and ERTRAC within the context of urban mobility (mainly short-distance passenger based) has already been identified as described in D1.1 and D1.2. Long distance freight is well covered within ALICE working group 'corridors hubs and synchro-modality' and is subject to further work in SETRIS WP2. However collaboration regarding to long distance passenger between ERRAC and ERTRAC is low and this is where SETRIS can positively contribute to enhance.

Road and air

Collaboration between ERTRAC and ACARE has been evident in the context of infrastructure innovation development as described in section 2.3. Within the Joint Roadmap (2013), the corresponding priorities between the ERTRAC and ACARE were considered strong on:

1. Construction and maintenance on multi-modal transport nodes and corridors via:
    a. Optimal location, operation and accessibility to and within terminals, hubs and gateways in the form of:
        i. New concepts, processes and systems for passenger and freight activities;
        ii. Design and operation of terminals;
        iii. Consideration of LCA tools for environmental effects.
    b. Seamless interchange of freight and passengers in the form of:
        i. Transhipment process, systems and technology (full automation of handling, e-freight extension); and
        ii. Concepts for smooth interchange between sub-urban high-speed passenger rail and airports and urban rail/road transport system (moving platform concept).
    c. Synchro-modality over key transport corridors.
2. Supporting systems and services on integrated transport infrastructure data/information systems via:
    a. Active infrastructure in the form of:
        i. Future proofing of ICT, using standards for information exchange to reduce obsolescence;
        ii. Interoperability through open standards for sensory systems and components;
        iii. Driver/passenger/controller information systems using personal mobile device technologies;
        iv. Advanced automatic real-time condition monitoring; and
        v. Low energy systems.
    b. Meta (common data) information architecture to provide real time, cross modal support to both the infrastructure user and the infrastructure operator;
    c. Data/information sharing – realising the meta-information layer to include transport operator data so enabling seamless door-to-door travel and transport choices for passenger and freight; and
    d. Data/information security.
3. Supporting systems and services on user information management via:
    a. Transport user expectations and acceptance factors;
    b. Market opportunities and acceptance factors;
    c. Coordinated travel process management; and
    d. Disruption and recovery management.
4. Governance, management and finance on resilient transport infrastructure operations across Europe via:

a. Intelligent traffic management strategies to accommodate growth in demand for transport capacity and performance, in particular where this is concerned with the trend towards 'self-management';
b. Advanced capacity planning to determine future investment requirements, particularly towards TEN-T network, including the secondary networks in the key economics and urban areas; and
c. Climate resilient infrastructure network.

Rail and air

The existing collaboration between ERRAC and ACARE has been in the same context as ERTRAC and ACARE as discussed above. The Joint Roadmap (2013) demonstrates the same agenda for ACARE towards ERRAC and ERTRAC equally and therefore uses exactly the same strong priorities for research and innovation as described in the 'road and rail' section above. The nature of long distance modes for rail and air can potentially open opportunities for cross review between the technology platforms in terms of the vehicle technology development.

As a result of this assessment the following table summarises a number of suggested targets, obstacles and regulatory issues that can affect each of the three key modal connections i.e. road-rail, road-air and rail-air.

	Road and Rail	Road and Air	Rail and Air
Targets	Opening dialogue between ERRAC and ERTRAC to formulate synergy co-roadmap addressing long distance passenger transport services, especially with regards to EU core-network priority framework	Maintaining the collaboration towards a truly integrated transport system	Maintaining the collaboration towards a truly integrated passenger transport system
	Joint WG ERRAC and ERTRAC to improve all aspects for a truly integrated long distance passenger transport services	Opening discussion to combine other surface transport modes on the table rather than keep separating it	Improving understanding of the importance of integrated transport system towards the adoption of the Core Network Transport policy framework
		Focus on the Transport Core Network policy framework to implement strategic research priorities and innovations	
Obstacles	Market competition between modes	Limiting road market for long distance transport service whilst other transport service (i.e. rail) is slow to response demand	Understanding the market for long distance passenger transport for rail and air with regards to the changing demographic trends
	The size of the market for different modes (e.g. road has a bigger market employing more people);	Mapping the demand for long distance passenger transport market	Is long distance passenger transport market between rail and air complimentary or competition?
	Sectoral issues (e.g. rail has been traditionally state managed and prone to inefficiency compared to road's non-public nature).		
Regulatory issues	Transport Core Network policy framework has been put in place, recently so the impact is still too early to be discussed;	Promoting the Core Network Transport Policy framework towards strategic research priorities and innovations agenda	Establishing a framework for the scale of long distance transport systems (i.e. how long is long suitable for air or rail?)
	Technology transfer and cooperation for clean vehicles		

Table 2. Summary of some key aspects related to cross-modal connectivity

4. CONCLUSION

D1.3 aims to define a truly integrated long distance transport system. ACARE and ERTRAC roadmaps and activities broadly tend to have a higher focus on passenger aspects while WATERBORNE and ALICE include more aspects related to freight. ERRAC's roadmaps consider both passenger and freight. Cross ETPs initiatives targeting the integration of long distance travel suggest the development of research and innovation priorities addressing the EU transport agenda.

This document has attempted to provide an understanding of the conditions required to achieve a truly integrated long distance passenger transport system. To do so, an overview of the status of the related roadmaps has been briefly introduced and assessed, with particular emphasis on cross-modal aspects already taking place between ERTRAC, ERRAC, WATERBORNE and ACARE putting it into context using key documents. Specifically, the aspirations of the transport White Paper (original and its midterm review) as well as those included in the EC's transport advisory group (TAG), both of which include visions of what the European transport system should be and do. This assessment shows that there is no clear, dedicated long distance passenger transport ideal, with perhaps the exception of the following competitive and sustainable transport target: *"[…] an efficient core network for multimodal intercity travel and transport*". Instead a number of interesting and sometimes ambitious priorities for each of the individual modes are largely targeted. It is these single mode priorities that can pose the biggest limitation to achieve a truly integrated passenger long distance transport offer. This shortcoming is also highlighted in the TAG report of 2014.

Instead, for a truly integrated long distance passenger transport system to become a reality connectivity between i) road and rail; ii) road and air; iii) rail and air is critical. A number of targets, potential obstacles and regulatory issues for each of these three aspects are summarised in table 2 where the ETPs with the support of SETRIS can act. While it is possibly naïve to define what a long distance passenger transport system is, a good attempt would be to adopt ACARE's vision to provide 90% of all European long distance travel door-to-door within four hours, always in the context of addressing the three essential connectivity ingredients described. It includes short distance transport modes This also relates to the *ERRAC-ERTRAC-WATERBORNE-ACARE-ECTP Task Force's* vision of an integrate transport systems which is faster, safer and reliable.

A similar approach initiated by the TAG to illustrate the inter-relationship and scopes of urban nexus (see SETRIS D1.2 for further details) can be used to define a truly integrated long distance transport system and to test it by collecting data from stakeholders.

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