

The rail innovation challenges of the coming decades

**Philippe Citroën
Director General, UNIFE**

Round Table “Standardisation and technological challenges”

**The ONCF 50th Anniversary Celebration
Marrakech, 6 March 2014**

- UNIFE represents the European Rail Supply Industry
- Based in Brussels since 1992
- A trusted partner of **European and International institutions** in all matters related to rail transport
- **Full members:**
Over 80 of the largest and medium-sized companies in the rail supply sector
- **Associated members:**
15 National Associations, representing almost 1000 suppliers of railway equipment
- UNIFE members have an **80% market share in Europe** and supply more than **50% of the worldwide production** of rail equipment and services.





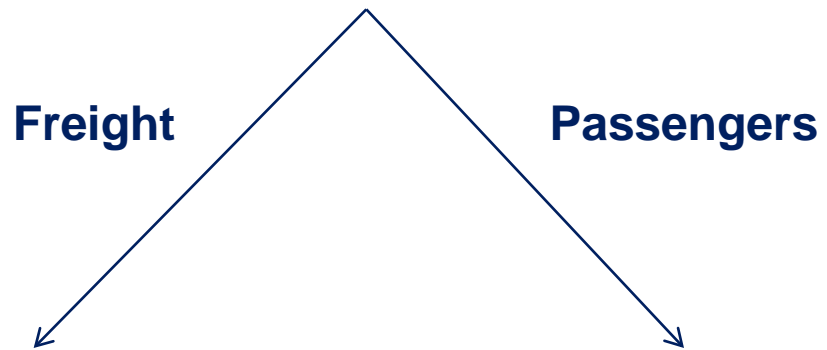
■ 82 Full Members

■ 17 Associate members, incl. 15
National Associations

INCREASING ATTRACTIVENESS



Achieving the ambitious targets set by the European Union in the 2011 White Paper on Transport:



50% of road freight over 300km should shift to rail or waterways by 2050

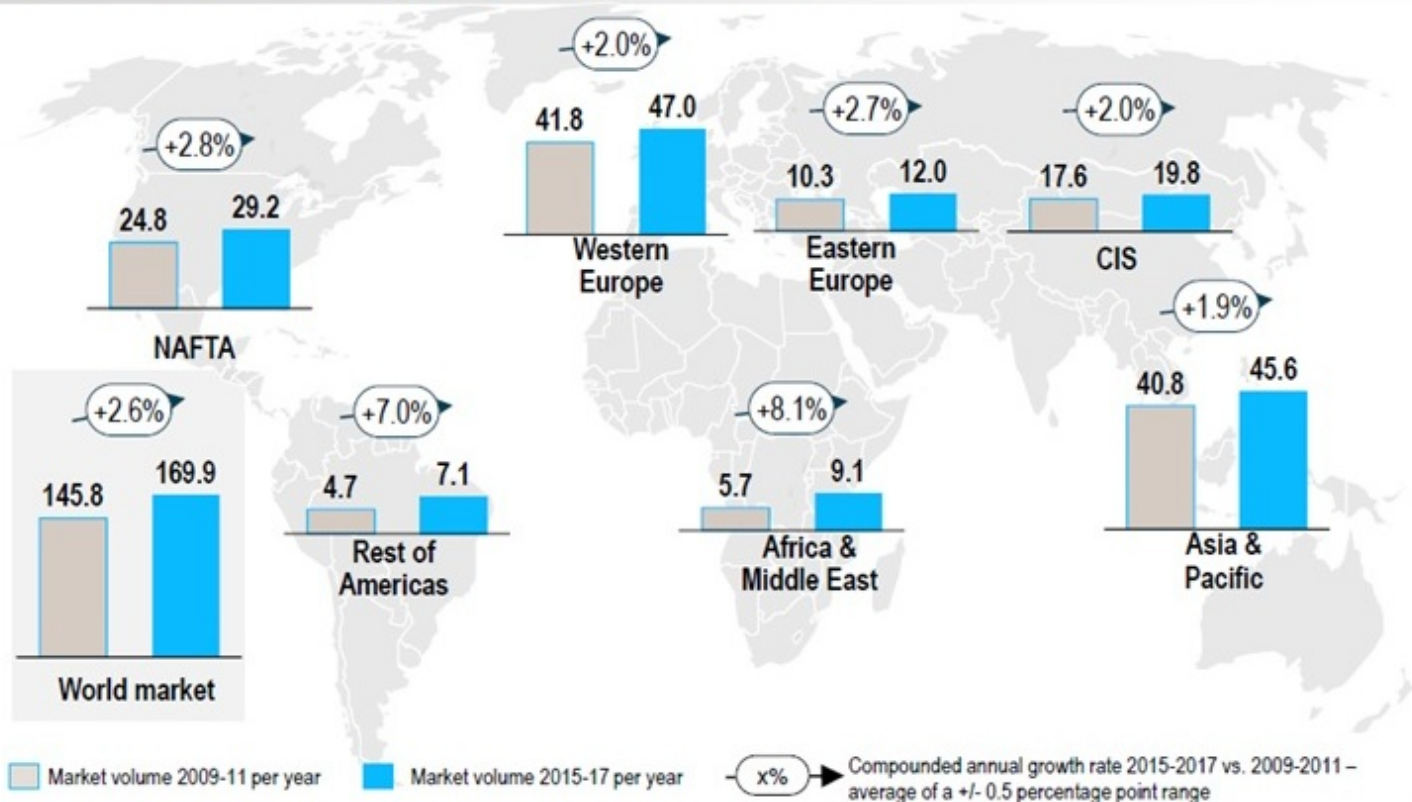
By 2050 the majority of medium distance passenger transport should go by rail

INCREASING COMPETITIVENESS

■ Major market opportunities for European companies!

Rail supply markets are forecast to grow at a rate of 2.6% in the world in the next 6 years

Total market volume by region [EUR bn p.a.]





Which solution?

**PREPARE AND LAUNCH A MAJOR EUROPEAN
PUBLIC-PRIVATE PROGRAMME FOR RAIL
RESEARCH AND INNOVATION!**



- 16 December 2013: Publication by the European Commission of a legislative proposal to launch an ambitious new European **Research & Innovation Programme** that aims to:
 - Increase the **competitiveness** of the EU rail industry to help it retain world leadership
 - increase the **attractiveness** of rail transport.
- A future **public-private Joint Undertaking** under **Horizon 2020**
- Proposed budget of **920 Million Euros** for **2014-2020**, including 450 Million from the EU and 470 Million from the Industry
- Already nearly 3 years of intense work by the rail sector for the **technical preparatory phase** (coordinated by UNIFE)
- A opportunity for numerous rail stakeholders all over Europe, including **industry, operators** (SNCF, DB, FS), **infrastructure managers** (Network Rail, Trafikverket) and numerous **universities** and **research centres!**

“New technologies can do much to help modernise Europe’s railways, while also reducing operational and infrastructure costs and creating new business opportunities for the European rail supply industry”

*Proposal for a Council Regulation establishing the
SHIFT²RAIL Joint Undertaking ,
16 December 2013*





SHIFT²RAIL - Founding organisations





SHIFT²RAIL - other promoters in the preparatory phase





SHIFT²RAIL - other promoters in the preparatory phase





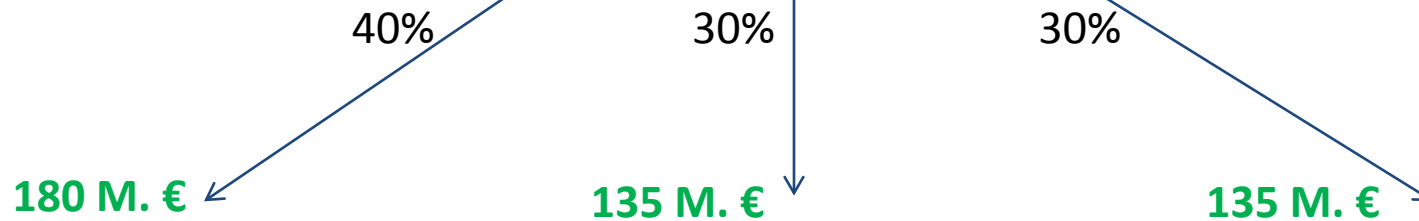
SHIFT²RAIL - other promoters in the preparatory phase





450 M. €
(breakdown of the EU contribution)

EC Proposal



JU Founding members

8 core investors listed
in the EC proposal

Founders' total own
contribution required:

270 M. €

(at least 30 M. €/each)

→ Including 70 M. € of "additional
activities" non eligible for EU funding

JU Associated Members

open call(s) to select individual
entities or consortia
(including of SMEs & research
organisations)

Associates' total own
contribution required:

200 M. €

→ Including 50 M. € of "additional
activities" non eligible for EU funding

Partners

regular open calls
for shorter-term projects
(major role for SMEs and research
organisations)

No financial participation in the
SHIFT²RAIL budget

■ 3 major challenges

✓ **CAPACITY** (*to cope with growing EU demand*)

Up to 100% increase in capacity

✓ **RELIABILITY** (*to better satisfy users*)

Up to 50% increase of reliability

✓ **LIFE CYCLE COSTS** (*for more competitiveness*)

Up to 50% of reduction of Life Cycle Costs

■ Impacting all segments of the rail market!



■ Improving mobility and making daily life easier for millions of European passengers and rail freight actors!

SHIFT²RAIL research priorities



IP1: Cost-efficient and Reliable High Capacity Trains



IP2: Advanced Traffic Management & Control Systems



IP5: Technologies for Sustainable & Attractive European Freight



IP4: IT Solutions for Attractive Railway Services



IP3: Cost-efficient and Reliable High Capacity Infrastructure

Deliver R&D results to the market with a system approach

1. **Development of prototypes in labs with the “Technology Demonstrators” (TDs)**
2. **Integration/demonstration of the TDs through “Integrated Technology Demonstrators” (ITDs)**
2. **and virtual validation at system level through “System Platform Demonstrations” (SPDs) developed for each targeted market segment:**
 - High Speed/Mainline
 - Regional
 - Urban/Metro & Suburban
 - Freight
3. **Implementation of the successful technology break-through with**
 - the industrialisation commitment of the Founders
 - the involvement of the entire rail sector & supply chain actors
 - the key role of the European Railway Agency (ERA)
 - the European Commission in the commitment to create a Single European Railway Area

■ STAKE AT EU LEVEL:

Maintain a competitive European rolling stock supply industry in the worldwide market by developing the future generation of trains.

■ CHALLENGE:

Design trains that will be lighter and more energy efficient, causing less track damage and less impact on the environment, thereby delivering a **lower whole life cost**.

At the same time, **operational reliability** of trains will be increased, ensuring that passengers get to destination on time and delivering a better quality of service



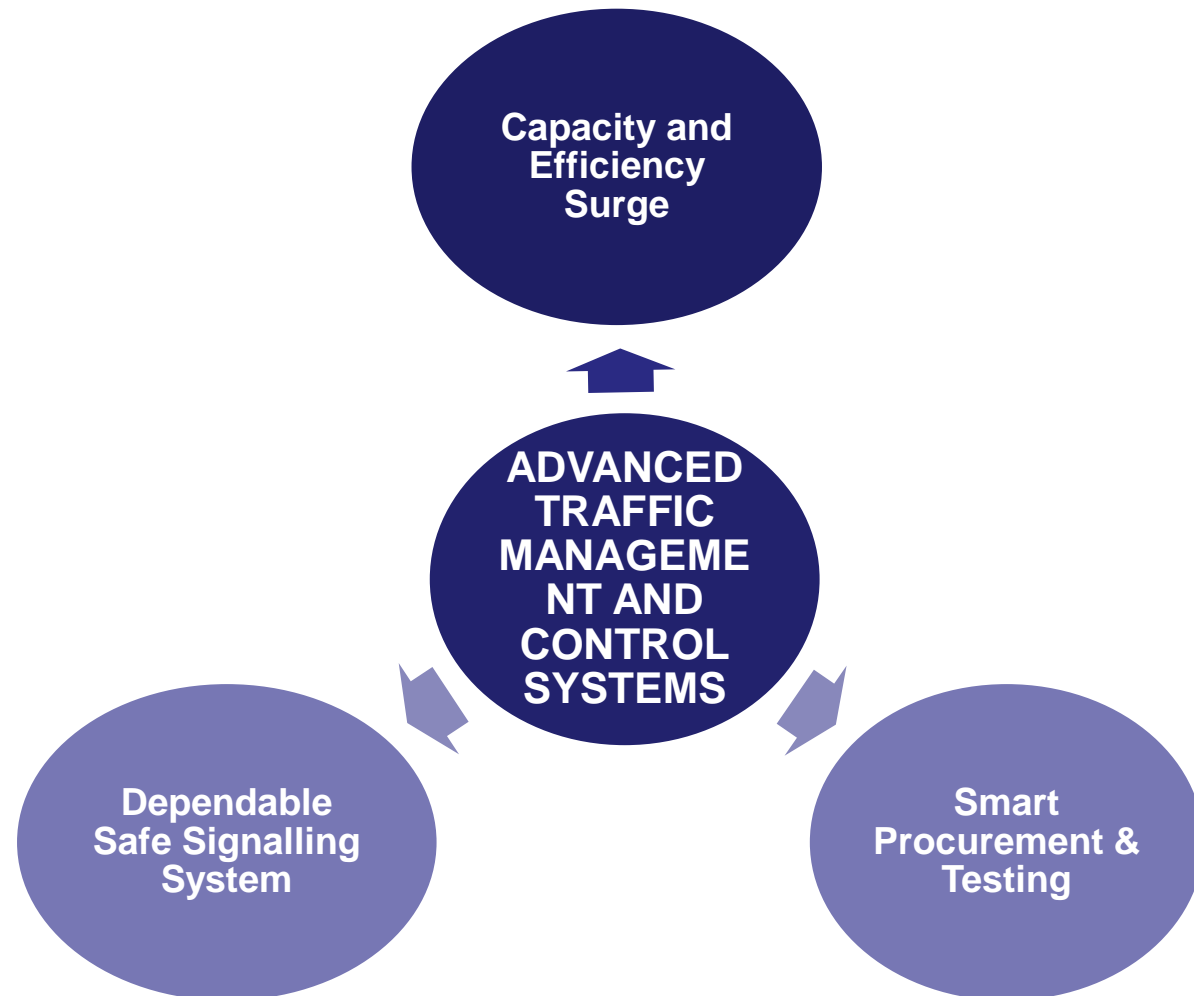
Innovation Programme 2 – ADVANCED TRAFFIC MANAGEMENT AND CONTROL SYSTEMS

■ STAKE AT EU LEVEL:

Maintaining the dominance of ERTMS as a solution for railway signalling and control systems across the world, while extending synergies and interoperability with the urban and mass transit railway sectors and speeding up the time to market.

■ CHALLENGE:

Develop a new generation of signalling and control systems, building on current ERTMS, to enable intelligent traffic management with automatically driven trains and optimise capacity, reliability and minimise Life Cycle Costs.



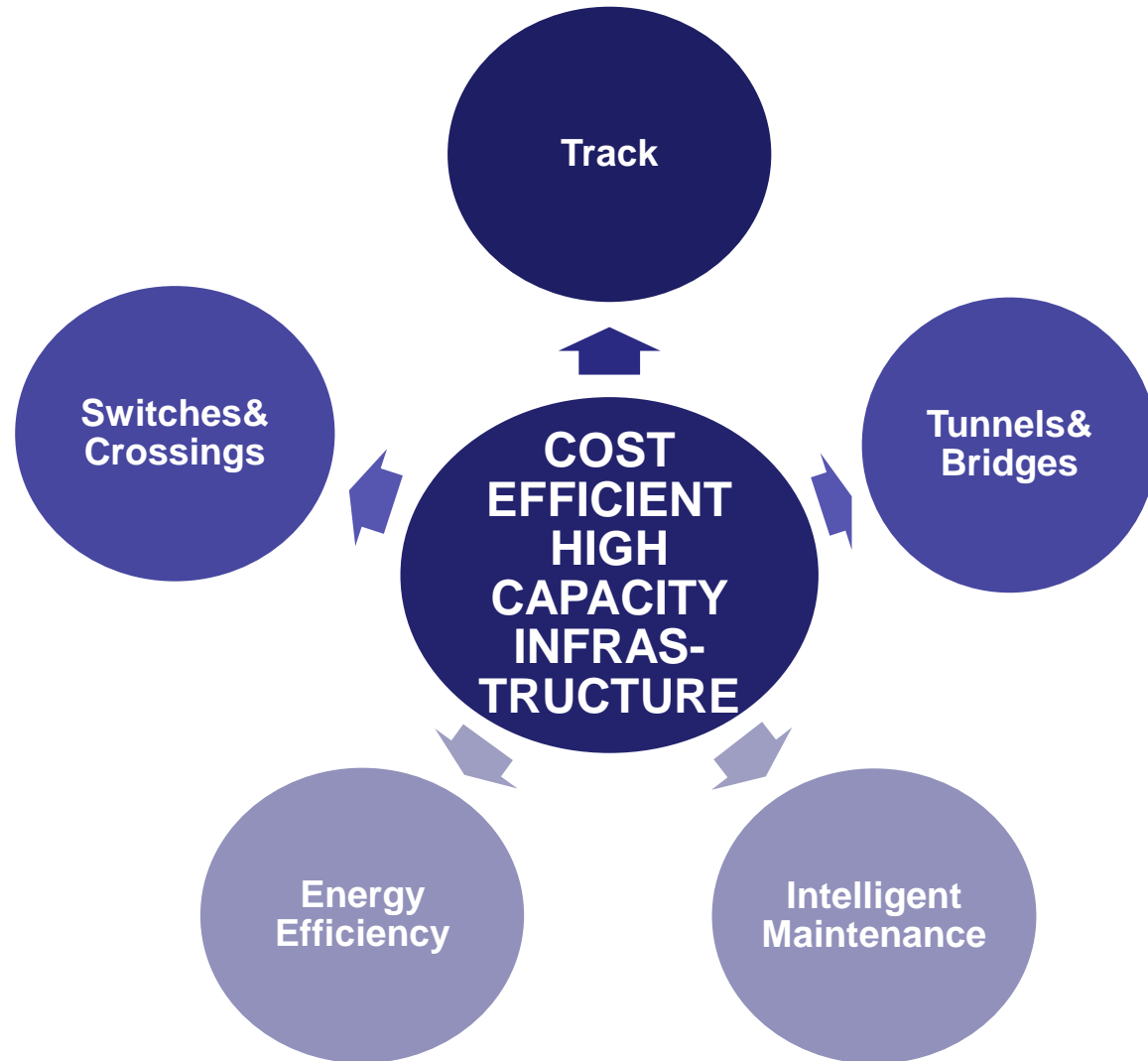
Innovation Programme 3 – COST EFFICIENT HIGH CAPACITY INFRASTRUCTURE

■ STAKE AT EU LEVEL:

Develop the pan European railway infrastructure into a high availability, low cost transport carrier to attract a shift from less sustainable and safe modes of transport. in doing so we can delivering an energy efficient, sustainable transport system for the union..

■ CHALLENGE:

Deliver a new railway infrastructure system (including both infrastructure and energy subsystems) with a breakthrough that will radically improve capacity and performance and reduce costs.



Innovation Programme 4 – SEAMLESS ATTRACTIVE RAILWAY

■ STAKE AT EU LEVEL:

Reduce the fragmentation of the pan-European transport landscape and foster a more seamless and end-user friendly approach for travel shopping, ticketing, travel companion and real time re-adaptation addressing multi-modal travel (air, rail and urban)

■ CHALLENGE:

By 2020, establish the framework for a European multimodal transport information, management and payment system (Goal # 8 of the Transport White paper 2011).

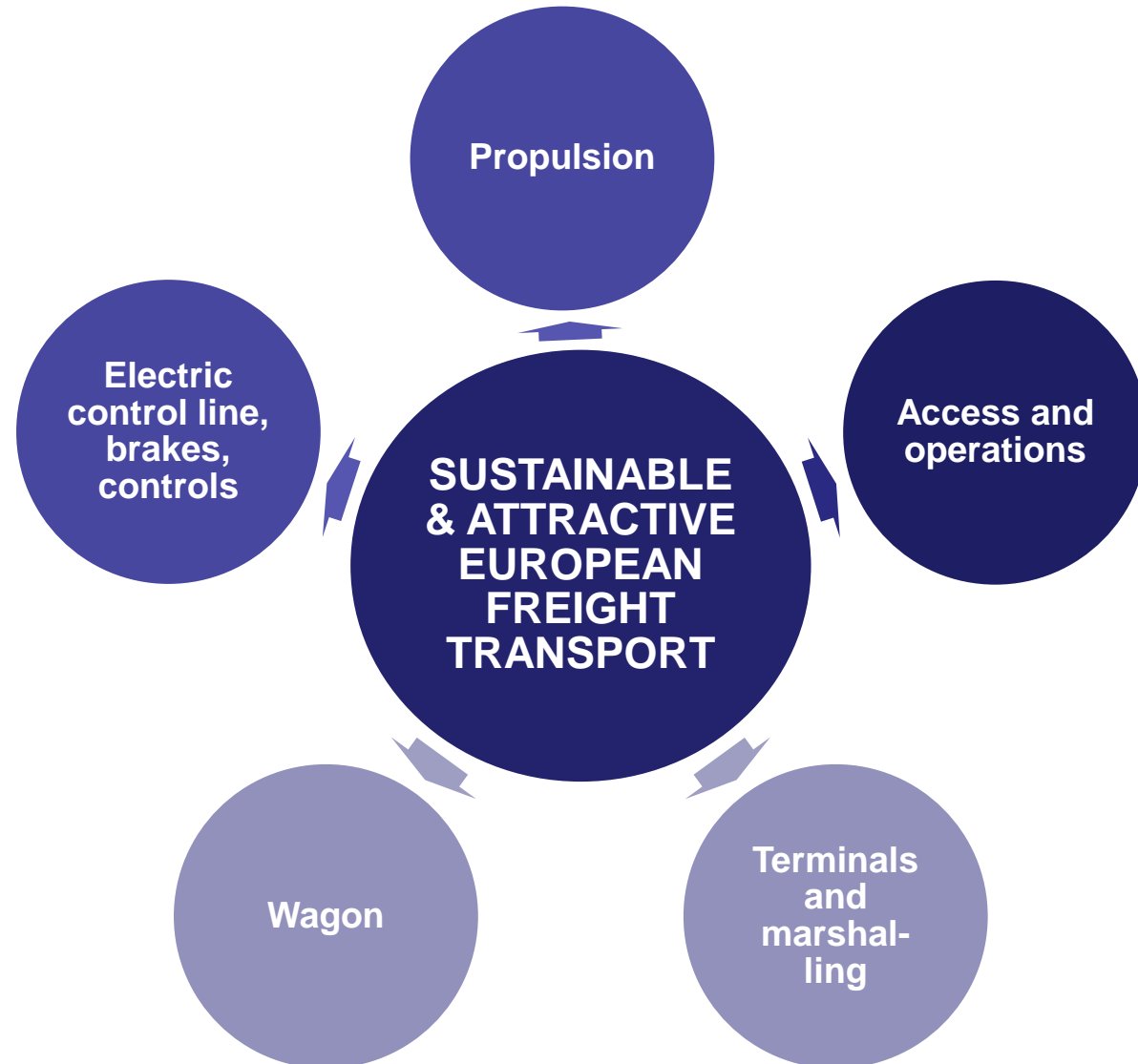


STAKES AT EU LEVEL:

- Improve the productivity of rail freight transport in Europe.
- Provide an attractive, energy efficient, low carbon and competitive rail freight service as mentioned in the Transport White Paper.

CHALLENGE:

- Provide technological and logistics breakthroughs
- Solutions must have good ROI for the actors
- Provide EU common values in growth, competitiveness, efficiency, decongestion, low carbon and less fossil fuel dependence



- **The Transport Council of the EU will officially give its approval**
→ *SHIFT²RAIL promoters are grateful towards the future Greek Presidency that has accepted to put SHIFT²RAIL on its Agenda (final approval foreseen on 5 June)*
- **After several months required to set up the Joint Undertaking, the JU will finally be operational and will begin R&I activities (Objective: early 2015)**
- **UNIFE would be happy to present more detail on SHIFT²RAIL to Moroccan officials at the ONCF once the initiative has been approved by the EU Council of Transport Ministers**



Thank you for your active support

www.shift2rail.org