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COMMISSION STAFF WORKING PAPER

Annex to the

COMMUNICATION FROM THE COMMISSION TO THE COUNCIL AND THE EUROPEAN PARLIAMENT

Towards a rail network giving priority to freight

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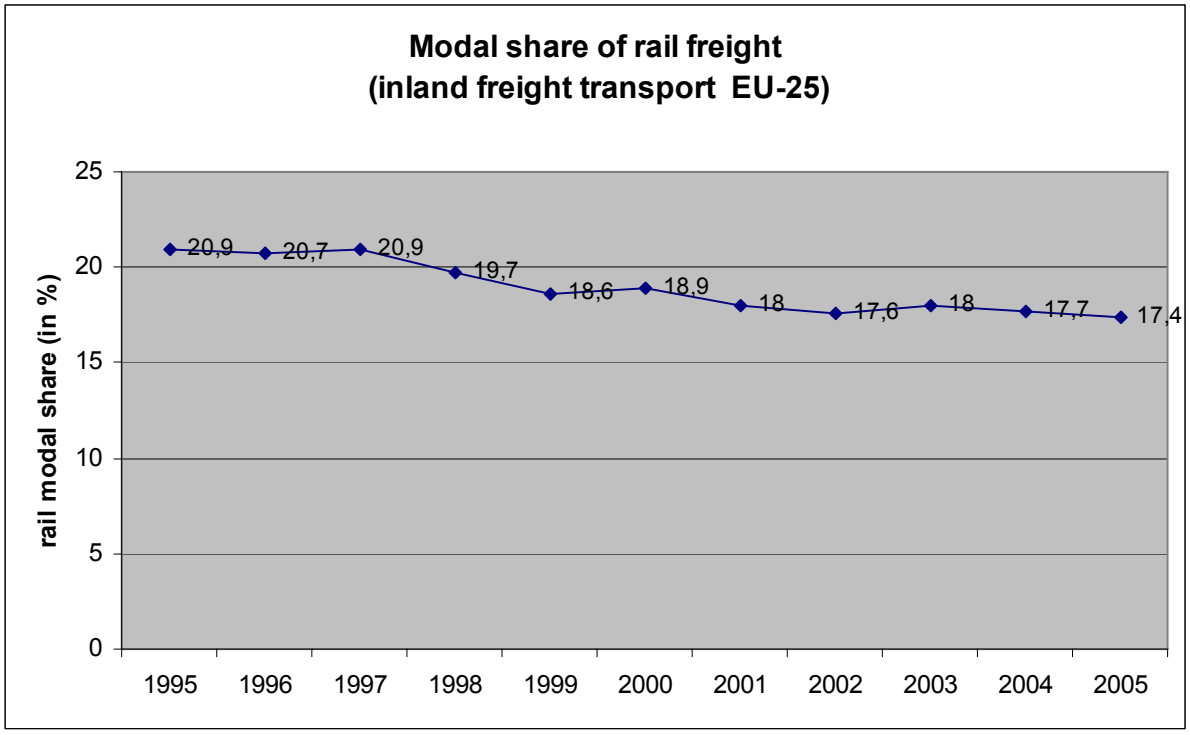
Annex to the Communication "Towards a rail network giving priority to freight"

ANNEX I: THE RAIL FREIGHT MARKET

Rail Freight Market Shares (EU-25)



Source: Eurostat

Principal market segments of rail freight today

Segment	Transported goods	Market share (in volume)	Competitive environment
Block train	Coal, steel, building materials	35%	- competition from inland waterway transport - intra-modal competition - decline of prices and margins
Single wagon load	Chemicals, vehicles and machines	50%	- competition from road - complex production process - can be very profitable; often leads to deficit. - rather closed market
Intermodal	Finished products, containers	15%	- strong competition from road - subsidised in numerous areas - growing market

Punctuality of Combined Transport trains from 1999 to 2006

Year	Trains with less than 30 minutes delay on scheduled time of arrival
1999	60%
2000	48%
2001	43%
2002	48%
2003	57%
2004	64%
2005	60%
2006	53%

Source: UIRR

Freight use along transport corridors

Corridor	Route length (km)	% Freight/total Units of transport (including passengers)
ERTMS corridors		
A Rotterdam-Basle-Genoa	2574	59%
B (Naples)-Bologna-Verona-Munich (extended towards Berlin-Hamburg-Copenhagen-Stockholm)	3467	51%
C Antwerp-Basle/Lyon	1680	67%
D Valencia-Barcelona-Lyon-Turin-Trieste-Ljubljana	2220	47%
E Dresden-Prague-Brno-Vienna-Budapest	1621	75%
F Aachen-Berlin-Warsaw	1934	76%
Others	33814	53%
Total	**47309**	**56%**

Source: ERIM

ANNEX II: STRATEGIC ANALYSIS OF RAIL FREIGHT

OPPORTUNITES

– **Forecasts of increase in demand for freight transport**: the anticipated growth in freight volumes within the Union for the period 2000-2020 is put at between 50% and 80% (according to estimates[1]).

– **Increase in container transport**: the rapid increase in world trade encourages maritime transport and container transport in particular (annual growth of 8.5% between 1980 and 2002; estimated at 7.5% between 2002 and 2010[2]).

– **Development of the European single market should lead to longer haulage routes**: over the period 2000-2020, trade between the EU-15 and the UE-12 should grow by 50%. The European single market will develop and consolidate, which should lead to longer freight journeys.

– **Road congestion**: this is constantly on the increase, and will be increasingly expensive for Europe's economy. Some analysts put the cost at between 1% and 2% of the Union's GDP.[3]

– **Increase in certain road costs**: the costs relating to fuel and to road infrastructure use are likely to continue to increase in the coming years.

– **Development of environmental concern**: to the extent that climate change and pollution-related risks in general are key issues at European public opinion level and among the political decision-makers of the Union.

– **Energy efficiency**: given its strong dependence on third-country markets for energy supply, the Union has made energy efficiency one of its priorities. For the same transport load, rail consumes approximately two thirds less energy than road transport.

– **Competition and the emergence of new operators**: full market opening of the European rail freight since 1 January 2007 should help to revitalise the sector and lead to the arrival of new investors.

– **Additional capacity released on certain major axes due to new operational high-speed lines:** in 2007, new high-speed lines will be operational in the Netherlands, in France, in Italy, in Spain and in Germany.

THREATS

– **Harmful effects of rail**: increased sensitivity to any form of pollution is not helped by rail, which can be a major source of noise.

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1 ASSESS and TEN-STAC studies
2 Atkins, Impact study
3 Atkins, Impact study; UNIT

– **Splitting consignments and bulk reduction**: this continues to migrate towards models where road is the most competitive.

– **Scant financial resources channelled into infrastructure maintenance and development**: the European network is very developed but insufficiently maintained. According to information collected by the Commission from the Member States, €17.5 billion was spent in 2004 on the maintenance, renewal and construction of rail track. In addition, infrastructure managers collected €7.5 billion of income from infrastructure charges. It should be noted, however, that these fees to cover infrastructure costs still vary considerably between Member States (from 10% in the Netherlands to 100% in the Baltic States). Moreover, the financial contribution from the state is often defined year on year, which limits the programming capacities of network maintenance expenditure.

– **The financial situation of numerous historical operators remains fragile**: the majority of rail freight operators have been carrying financial deficits for several years and some of them do not have sufficient aquity capital.

– **Delay in the definition and implementation of internalisation of external costs**.

– **The potential margins for reduction of road transport costs:** road would be in a position to reduce its costs from 10 to 20% within the short to medium term. This threat would be even more real if the project to introduce 60-tonne megatrucks were implemented.[4]

– **Shortage of skilled labour**: rail companies sometimes have problems recruiting staff, in particular train drivers. This problem could worsen in the short term due to the population pyramid of certain companies and to the impact of time and training costs.

STRONG POINTS

– **Faster and less expensive over long distance for large freight quantities**: rail scores most over road over long distances: 25% of the tonnage transported within the Member States covers more than 150 km. Rail transports 2% of the tonnage travelling less than 50 km, but 19% of the tonnage travelling more than 500 km.

– **Far less harmful to the environment, at emissions level, compared with road**: the environmental reporting of both methods leans distinctly in favour of rail (rail pollutes the air more than four times less than road; the proportion is more or less the same for all external costs[5]).

– **Transport in full safety**: rail remains one of the safest modes of transport.

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4 CER/McKinsey, The future of rail freight in Europe

5 Railpag. Air pollution by heavy goods vehicles: 38.3 €/1000 t.km; by trains: 8.3 €/1000 tkm.

WEAKNESSES

- **Infrastructure sharing with passengers**: rail freight seldom takes priority over passenger transport, which harms its performance.

- **Low productivity and significant capital needs**.

- **Rigidity caused by infrastructure and the problem of door-to-door transport**: rail is held back by structural constraints, such as the lack of flexibility due to the fixed layout and the lack of extended infrastructure to reach the final customer.

- **Too weak a customer culture**: a change of culture is needed in this area.

- **Insufficient technical and administrative interoperability**: the coexistence of numerous different and sometimes incompatible systems slows down the development of international rail services. Heritage of the national approach means that technical interoperability problems include various track widths (4 standards on the principal network), and various signalling and electrification systems (5 different standards).

- **Lack of integration in the logistical chain**: this explains the insufficiency of terminals in the areas of demand generation and/or their reduced capacity. The links between rail operators and freight organisers (consignors) are too weak.

ANNEX III: COMMUNITY POLICIES

Extracts from the White Paper on the European transport policy for 2010

The White Paper on the European transport policy for 2010 envisages the creation of "multimodal corridors giving priority to freight ". It states that *"....Though it will not be possible in the immediate future to establish a complete rail network reserved for freight, investment must encourage the gradual development of trans-European corridors for priority or even exclusive use by freight trains. These will consist mainly of existing lines used primarily or even exclusively by freight trains. [...] in other areas, the gradual establishment of corridors giving priority to freight will be achieved through improvements in capacity, [...] or through the development of traffic management systems (programme, control and signalling) capable of separating trains more efficiently.* It adds that "*rail access to ports provides an essential link in multimodal corridors giving priority to freight [...]. The terminals through which goods are routed to their final destinations or at which trains are made up again constitute major bottlenecks."*

Extracts from the mid-term review of the European Commission's 2001 Transport White Paper: *"Keep Europe moving: Sustainable mobility for our continent"*

***Co-modality**, i.e. the efficient use of different modes on their own and in combination, will result in an optimal and sustainable utilisation of resources. This approach offers the best guarantees to reach at the same time a high level of both mobility and of environmental protection.*

The Commission will examine a possible programme to promote a rail freight oriented network within the broader context of a new freight transport logistics policy. Unlocking these opportunities will require the adaptation of freight services and infrastructure management in terms of quality, reliability, flexibility and customer orientation.

Inland transport: - Action: examine a possible programme to promote a rail freight oriented network within a broader transport logistics policy.

ANNEX IV: EXAMPLES OF ACHIEVEMENTS

IV.1 CORRIDORS

Corridor A: Rotterdam-Genoa

The objectives along the Rotterdam-Genoa corridor are to double the volume transported between now and 2020, with an increase in reliability of 26% and a reduction in transport time of 20%. In absolute terms, these measures will allow 28 billion freight tonnes-km each year to be transported by rail rather than by road: this means, at each point along this 1300km corridor, one lorry with 26 tonnes of freight passing by every 37 seconds, 24 hours a day, all year round.

Corridor C: Antwerp-Lyons/Basle

On the Antwerp-Lyon/Basle corridor, the objectives are to increase the volume transported by 55% between now and 2020, with a reduction in transport time of 15%, and a four-fold reduction in the number of late trains on the Antwerp-Lyon line and a two-fold reduction on the Antwerp-Basle line. On these very dense axes where rail can have a competitive edge, this would mean that approximately 7 billion freight tonnes-km use rail rather than road.

IV.2 RAIL NET EUROPE (RNE)

Infrastructure managers have been cooperating since 2001 within RailNetEurope (RNE). This association brings together, inter alia, the infrastructure managers and paths management bodies of 22 Member States. RNE tries to harmonise and develop the processes and tools used by the infrastructure managers in an effort to increase the effectiveness of international rail traffic. Measures undertaken by RNE include: a one-stop-shop network, the designation of 10 corridor managers, a common deadline for international path requests, a handbook on the international processes of path management, a common form of path request, and a common format of network code document. RNE is currently developing a strategy around information technology designed to support the processes relating to international rail traffic. *Pathfinder*, a communication system for the optimisation of international capacity allocation, and *EICIS*, an information system on infrastructure charges, have both been set up by RNE. Potential customers seem not to know what RNE has done and sometimes seem reluctant to use the procedures put in place. Historical operators make little use of these new tools. Another problem for RNE is the lack of power to force its members to use the procedures and tools put in place and also differences in national law. RNE has experience with cooperation and with the problems encountered. Questions concerning the way in which the transparency of the processes put in place can be ensured remain open, however.

IV.3 TECHNOLOGICAL DEVELOPMENTS

EUROPTIRAILS

One of the Commission's initiatives in the field of new technologies worthy of mention is Europtirails, a Real-Time Traffic Management System for International Trains on the main trans-European rail corridors. This system, which is currently operational on the Rotterdam-Milan corridor and on the new Paris-Frankfurt high-speed line, provides transhippers with real-time data on national traffic journeys, which increases their potential in international rail services management allows data collection for this type of service. The recent adoption of Europtirails by RailNetEurope (RNE) as an operational reference system should make it possible to accelerate and extend its deployment to other regions of the Community.

TAF TSI

In parallel, the technical specifications adopted in 2006 for the TAF TSI freight system provide for the creation of "e-Europe" in the rail freight sector by 2013. The networking of existing national technological equipment will provide reliable information on the value chain of rail freight transport in Europe. Meeting this objective will give rail an additional competitive edge. However, it is not only a technological issue. It also requires major changes to current basic activities and operational practices, tantamount to a "cultural revolution" in the sector.

ANNEX V: IMPROVEMENTS TO BE MADE TO TRANSPORT CORRIDORS

V.1 CREATION OF A CORRIDOR WITH PRIORITY GIVEN TO FREIGHT

Context

All the shortcomings of a national approach are highlighted at border crossings. The numerous participants and all the rules and procedures to be observed cause fragmentation, insecurity and inefficiency. A number of experiments have already been made in an attempt to overcome these difficulties and to promote coordinated management between Member States and with the infrastructure managers and the regulatory bodies concerned. This type of coordination is already ongoing in the case of the Rotterdam-Genoa and Antwerp-Lyon/Basle corridors, in terms of investment decisions, infrastructure standardisation and a common operations set-up as part of the introduction of ERTMS.

The structure adopted within the ERTMS corridors A (Rotterdam-Genoa) and C (Antwerp/Lyon-Basle) is one example. It involves an Executive Committee, to supervise the project and coordinate government decisions as regards financing, a Management Committee responsible for the day-to-day implementation of the project and a project leader; it could develop into a European Economic Interest Grouping (EEIG). At this stage these structures are responsible for coordinating infrastructure investments. The structure of corridors C and D[6] has EEIG status, which makes for better coordination, in particular for common calls for tenders and financing plans. Corridors A and E[7] are preparing an EEIG.

Problems to be solved

- Need for organisation and coordination by corridor, with clear and efficient decision-making and implementation structures to coordinate investments and improve procedures; infrastructure investments in a Member State should not be undermined by the lack of action in other countries along the corridor.

- Traffic control centres do not currently have information on train situations and possible delays in the neighbouring networks.

Objectives

- Corridors should be made more efficient by way of an organisational structure for each corridor and measures to coordinate better use of the corridor.

- The competences of the corridor structures could be widened to become single pilots along the corridors in the long term.

- Corridor project teams have to be supported at the highest level to ensure the success of these corridors.

- Better and more rapid information needs to be obtained on the status of trains and any delays.

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6 Valencia-Barcelona-Lyon-Turin-Trieste-Ljubljana

7 Dresde-Prague-Bratislava(Wien)-Budapest

- Joint or even single management of a train throughout a corridor will improve the flow of trains.

- Greater coordination of operations is needed within corridors (path reallocation in the case of delays, maintenance, etc.)

- Europtirails software needs to be more transparent and extended to other corridors, under RNE or other management, which has to have the means for consolidation, use, maintenance and development. A 'corridor code' should be defined, in addition to the national network codes. OSS (One-stop shops) should have a more operational structure and their functionalities should be extended. Pathfinder, the path allocation software, needs to be used more widely.

- Greater coordination of traffic control centres is needed. This could lead to a traffic control centre for a given corridor that can immediately reallocate a complete path for a freight train in the event of delays and allocate paths for international freight traffic at short notice.

V.2 INFRASTRUCTURE CAPACITIES OF A CORRIDOR

Context

Network characteristics differ in terms of infrastructure parameters, such as train length, gauge, axle load and speed, throughout a corridor.

Problems to be solved

- Numerous specific bottlenecks are observed. These are primarily in urban areas, single tracks and accesses to the ports and large terminals, but they also include bridges and tunnels.

- Different technical subsystems: different track gauge beyond the Pyrenees (Spain and Portugal, and in the Baltic states), various types and levels of electric voltage for traction, different signalling systems, and numerous different technical specifications within the Member States. Implementation of ERTMS and ETCS will make it possible in the years ahead to have a common traffic control system and a common signalling system along the main corridors. The TSIs (technical specifications for interoperability) are also an important step towards harmonisation.

- Different infrastructure parameters throughout Europe and also along a corridor: train length, loading gauge, axle load, speed, train weight, and available capacity. The infrastructure parameters approved by the European Agreement (26 countries) on Main International Railway Lines (AGC) in 1995 in Geneva, under the aegis of the Inland Transport Committee of the United Nations Economic Commission for Europe, are far from being in force everywhere. For example, the 750m train length, which is one of the most important and least expensive parameters to implement, is supported only on 37% of the ERIM network.[8] Moreover, experiments are also under way on longer trains (1000m and 1500m).

Objectives

- Increasing the capacity of corridors through investments or more binding operational procedures to remove bottlenecks.

- Harmonising the infrastructure parameters to make it possible for trains of greater capacity to operate, and for the transport potential of each train to be maximised throughout the corridor. The transport capacity of the corridor will also be increased, both by better use of the paths and by the need for fewer trains to transport the same volume.

    - A 750m train length soon has to become the minimum standard.

    - Study the move to trains 1500m in length.

    - The C gauge should become the standard gauge along the main freight corridors (France and the UK excepted) and at least when building new tracks or when refitting tracks mainly geared to freight.

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[8] European Rail Infrastructure Master Plan (ERIM). 2006 Report by UIC (International Union of Railways)

– A 22.5 tonne axle load, 100km/h speed and a gross load of 2000 tonnes should become minimum standards on the corridors.

– Double tracks

V.3 PATH ALLOCATION: MORE COORDINATION

Context

Freight trains use the same tracks as passenger trains, which generates numerous conflicts in path allocation when schedules are drawn up, which favour passenger trains; freight trains are often obliged to use what remaining paths are left.

International path allocation, which is carried out at the time of annual planning, is the combination of national paths, often granted on the basis of priority rules between types of trains. These rules can vary from one country to another.

Problems to be solved

- Unfavourable priority rules for freight.
- Different priority allocation rules between countries
- Sub-optimal use of capacities, due to various train types and different speeds; regional passenger trains often stop and slow down freight.
- Only the rail undertakings can request paths, not customers.
- Need also to comply with path requests at short notice (3 to 5 days).

Objectives

- To give rail freight more attractive international paths, the capacity allocation criteria for path allocation and the priority rules for daily path reallocation must be redefined (see following sheet). The rules along a corridor need to be harmonised.
- Allocate greater priority to freight traffic and harmonise these rules along a corridor, so as to improve the coexistence of passenger and freight trains.
- Put forward measures for train traffic to increase the capacity of the tracks. Some principles would be to:
  - standardise path allocation criteria along a corridor, at least those relating to freight, by giving sufficient priority to freight;
  - maintain the paths allocated to freight in case of passenger train delays;
  - take more account of freight trains at the time of track maintenance;
  - examine the splitting of traffic, travelling at the same speed, according to time slots.

- The regulatory body has to have sufficient powers and resources to arbitrate conflicts during path allocation. Coordination between the various regulatory bodies of a corridor is also necessary (see corridors management).

- Applicants other than rail undertakings may submit path requests directly (authorised applicants).

V.4 PRIORITY RULES IN CASE OF NETWORK DISTURBANCES

Context

In addition to path allocation planning, established more or less annually, path reallocation in real time in the event of delays or incidents generates numerous conflicts.

Problems to be solved

- In the event of delays, path reallocation rules are unfavourable to freight. A delayed passenger train can often be given a path allocated to freight.
- Reallocation rules are not harmonised throughout a corridor.
- Reallocation rules are not always consistent with the rules applied during path allocation planning.

Objectives

- The same traffic reallocation rules will have to be used throughout the corridor.
- In the event of delays or incidents, reallocate the paths with well defined and harmonised rules in order to penalise freight trains to the minimum, and if possible for the whole of the remaining path.

V.5 ADDITIONAL RAIL SERVICES: TERMINALS, MARSHALLING YARDS, ETC.

Context

Multimodal terminals (rail terminals, ports, multimodal platforms and logistics, etc.), marshalling yards and formation yards are an essential part of the transport logistical chain and a key link in multimodal transport.

Problems to be solved

- Insufficient capacities of terminals and access tracks.

- Non-transparent and sometimes discriminatory access to terminals and marshalling yards, especially when they are operated by the incumbent. Operators have problems accessing terminals and marshalling yards, justifiably or otherwise.[9] Loading and unloading operations, and wagon marshalling, are handled less quickly than for the incumbent company. There is less occurrence of these problems and productivity increases by 5 to 10% when these terminals are managed by an operator that is not dependent on the incumbent company.[10]

- Excessively long waiting times in terminals and marshalling yards, due to lack of capacities and lack of efficiency, and short opening hours.

Objectives

- Develop a network of independent and efficient terminals and marshalling yards along the corridors and near the consumption centres. They also have to serve as 'hubs and spokes', to concentrate and split regional traffic from and to secondary tracks.

- Access and use of freight terminals (multimodal platforms, port facilities), formation and marshalling yards, and junctions and warehouses has to be transparent and non-discriminatory. Regulators should have the powers needed to ensure real market opening.

- Terminal managers should look at ways of improving their operations, including extending their opening hours.

- The network code documents should refer (indication of or link to the internet site) to access rules to internal seaports and to terminals and marshalling yards, including last mile access.

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[9] Servrail

[10] Best practices for the management of combined transport terminals. Diomis Workpackage 4, UIC, February 2007

V.6 QUALITY MEASURES ALONG A CORRIDOR

Context

UIRR statistics show that only 53% of freight trains arrive on time, i.e. less than 30 minutes late. To make for better reliability, some Member States have introduced performance monitoring systems. A customer can only avoid this problem by introducing quality clauses into its contractual relations with the rail undertaking.

Problems to be solved

- Customers deplore the unreliability of rail and its lack of punctuality, which is one of the main shortcomings in terms of attractiveness.
- Measures already envisaged by the directives and rejection of proposals of the 3rd package.
- Cascade effects in delays.
- Reluctance of the sector to make financial compensations. The performance regimes are mandatory, e.g. form part of access charges.
- Lack of simple and reliable indicators.
- Delays and their causes are recorded by staff in the traffic control centres and are transferred from the national systems into Europtirails software, sometimes with lack of precision and with the risk of attributing the cause to another company than itself.

Objective

- Urge railway undertakings to improve punctuality.
- Record the delays with precision and determine indisputably the responsibilities for the delays, with a simple appeal procedure against decisions taken by infrastructure managers.
- Importance of follow-up and tracking of trains.
- Encourage monitoring performance systems.
- Publication of quality indicators at corridor level.

V.7 CROSS-BORDER OPERATIONS

Context

Border crossing is sub-optimal for rail freight transport. Trains are stopped, often between 1 and 2 hours, while the crossing time could be reduced to a few minutes. To this end, undertakings have implemented various measures, with different levels of coordination and integration. These 'Best Practices' should be extended to all border crossings.

Problems to be solved

- Changing engines and drivers, due to lack of interoperable engines and certified drivers to drive on both networks, or because the safety procedures of a railway undertaking are not accepted on the other side of the border.

- Too many administrative operations, often repeated on either side of the border. The Franco-German Freight Interoperability Centre is a very interesting and efficient example: it is a joint operation and control system centre, in Woippy, which makes it possible to shorten the crossing time across the Franco-German border to three minutes.

Objectives

- General avoidance of the repetition at the borders of controls carried out previously, at the beginning of the journey.

- All stakeholders should optimise their border-crossing operations to minimise the crossing time at the border, and to achieve a certain performance level on a given corridor.

- Use of efficient paperless information systems with reliable information.

- More transparency and information on waiting times at borders.