



**COUNCIL OF
THE EUROPEAN UNION**

Brussels, 26 January 2011

5623/11

**TRANS 18
ECOFIN 27
ENV 45
RECH 8**

COVER NOTE

from: Secretary-General of the European Commission,
signed by Mr Jordi AYET PUIGARNAU, Director

date of receipt: 20 January 2011

to: Mr Pierre de BOISSIEU, Secretary-General of the Council of the European
Union

Subject: Commission Staff Working Document
The New Trans-European Transport Network Policy
Planning and implementation issues

Delegations will find attached Commission document SEC(2011) 101 final.

Encl.: SEC(2011) 101 final



COMMISSION OF THE EUROPEAN COMMUNITIES

Brussels, 19.01.2011
SEC(2011) 101 final

COMMISSION STAFF WORKING DOCUMENT

**The New Trans-European Transport Network Policy
Planning and implementation issues**

ANNEX 2

The planning methodology for the trans-European transport network

This Annex sets out a possible planning methodology for the new trans-European transport network (TEN-T). The future TEN-T is planned to feature a dual layer network structure, comprising a comprehensive network and a core network. This dual layer approach was supported by two public consultations and by the results of the work of external expert groups as referred to above, as well as of several specific studies, in particular: the "TEN-T Planning Methodology" and "Ports and their Connections within TEN-T".

The objective of this Annex is to describe in detail the suggested criteria, in which the Commission services are considering for shaping both layers of the future TEN-T. The ideas draw on the observations made by the above-mentioned sources and helped to steer the debate on TEN-T revision. These criteria and their impacts will be assessed in the context of the review of TEN-T policy and TEN-T guidelines proposal scheduled for mid-2011.

1. The Comprehensive Network

The comprehensive network would represent the basic layer of the TEN-T and include components for all transport modes – rail, road, inland waterway, air and maritime as well as their connecting points and corresponding traffic information and management systems.

The comprehensive network would, essentially, result from an updating and adjustment of the current TEN-T, as defined in Decision N° 661/2010/EU of the European Parliament and the Council of 7 July on Union guidelines for the development of the trans-European transport network.

Updating and adjustment would need to abide by a number of rules. The Commission services are considering rules that would:

- Update the current TEN-T to reflect progress in its implementation and adjust it where necessary to changes in national planning, in coherence with EC planning;
- Add selected and well-defined missing links and nodes, especially in Member States which have acceded the EU since 2004, where necessary to ensure a homogeneous network planning, a sound modal balance and the interconnection of national networks, and to contribute significantly to TEN-T objectives. Special attention should be given in this context to network density which in principle should correspond to NUTS 2 zones¹⁵ and reflect spatial distribution of population and of economic and industrial activities.
- Eliminate dead ends and isolated links in the current TEN-T if not justified by geographical particularities.

¹⁵ Regulation (EC) N° 1059/2003 of the European Parliament and of the Council of 26 May 2003 on the establishment of a common classification of territorial units for statistics (NUTS), http://epp.eurostat.ec.europa.eu/portal/page/portal/nuts_nomenclature/introduction

- Ensure that minimum standards for infrastructure and equipment are met in accordance with relevant legislation currently in place (e.g. rail interoperability, road tunnel safety, inland waterway categorisation).
- Revise the selection of seaports according to at least one of the following specific criteria:

Passenger transport: seaports connected to the land component of the comprehensive network with an annual traffic volume exceeding 1‰ of the total annual EU maritime passenger traffic. This annual traffic volume should represent the average of the latest three-years totals for which data are available from EUROSTAT¹⁶.

Freight transport: seaports connected to the land component of the comprehensive network with an annual traffic volume – either for bulk or non-bulk cargo handling - that exceeds 1‰ of the corresponding total annual cargo handled in EU ports. This annual traffic volume should represent the average of the latest three-years totals for which data are available from EUROSTAT¹⁷.

Seaports located on islands, on condition that they are open for commercial traffic and provide accessibility at NUTS 3 or archipelagos level.

Seaports located in outermost regions or peripheral areas, provided that they are open to commercial traffic and their distance from another TEN-T port is at least 200 km.

- Revise the selection of airports according to the following specific criteria:

Passenger traffic: Airports with an annual traffic volume exceeding 1 ‰ of the total annual EU air passenger traffic. This annual traffic volume shall represent the average of the latest three-years totals for which data are available from EUROSTAT¹⁸.

Freight transport: Airports with an annual traffic volume exceeding 2 ‰ of the corresponding total annual cargo handled in EU airports. This annual traffic volume shall represent the average of the latest three-years totals for which data are available from EUROSTAT¹⁹.

Airports located on islands, on condition that they are open to commercial traffic.

Airports located in peripheral or landlocked areas, provided their distance from another TEN-T airport is at least 100 km or, in case they are connected to a high-speed railway line, at least 200 km.

- For inland ports, the volume threshold set out in Decision N° 661/2010/EU would remain unchanged. Inland ports must be open to commercial traffic, located on a TEN-T inland waterway and be interconnected with other TEN-T road or rail infrastructure.
- Add a network component consisting of multimodal platforms which must be provide free access to any logistics operator. These platforms would fulfil one of the following specific criteria:

¹⁶ For the elaboration of the new TEN-T proposal, the Commission will use the data for the years 2006, 2007 and 2008. In absolute terms, this initial threshold amounts to 411223 passengers per year.

¹⁷ For the elaboration of the new TEN-T proposal, the Commission will use the data for the years 2006, 2007 and 2008. In absolute terms, this initial threshold amounts to 2434402 tons per year for bulk cargo and 1341406 tons per year for non-bulk cargo.

¹⁸ For the elaboration of the new TEN-T proposal, the Commission will use the data for the years 2006, 2007 and 2008. In absolute terms, this initial threshold amounts to 780810 passengers per year.

¹⁹ For the elaboration of the new TEN-T proposal, the Commission will use the data for the years 2006, 2007 and 2008. In absolute terms, this initial threshold amounts to 24456 tons per year.

The multimodal platform constitutes the main platform of a NUTS 2 region and is connected to two TEN-T modal network components.

Multimodal platforms may be included in the network in a NUTS 2 region, provided their transshipment volume exceeds 1 % of the total national volume.

The multimodal platform is connected to three out of the five TEN-T modal network components (land transport modes, air and sea).

The multimodal platform serves a primary or secondary node of the TEN-T core network (see point 2 below).

The Core Network

The core network would be a subset of the comprehensive network overlaying it, to represent the strategically most important nodes and links of the trans-European transport network. It would be multi-modal – i.e. include all transport modes and their connections as well as relevant traffic management systems, and the infrastructure included in this network shall be a subset of the comprehensive network.

The draft planning steps and criteria set out below aim at selecting nodes and links which serve passenger and/or freight traffic. Steps 1 to 3 should be carried out separately for passengers and freight.

Possible Components and Planning Steps

(1) Identification of "primary nodes":

These are the nodes (cities, conurbations, airports, ports etc.) of highest strategic importance in the EU – either for passenger traffic, or for freight traffic or for both types of traffic. They will be identified at the very beginning of the planning process and define the overall Core Network configuration.

Identifying the links between the "primary nodes" and determining "secondary nodes":

The “primary nodes” will be connected through multimodal links. The branching and/or crossing points, resulting from such combination, may turn into “secondary nodes”, provided they represent adequate cities and/or multi-modal connections.

Routing of links and identification of "tertiary nodes":

To optimise the effectiveness and efficiency of the Core Network, the multi-modal links will also string smaller cities and connections between modes where appropriate. Such cities and connecting points will become "tertiary nodes".

Merging the network parts for passengers and freight to the Core Network:

As an intermediary step, the two components would be overlaid. This would then be followed by a detailed investigation of a possible superimposition of passengers' and freight traffic. Which links are dedicated passengers' or freight lines, and which ones will be foreseen for mixed traffic would then be decided on this basis.

Technical infrastructure parameters of the Core Network nodes and links (including their equipment with smart infrastructure for traffic management) would be determined depending on the respective service requirements in relation to traffic demand (traffic volumes, shares of passengers and freight traffic, distribution of transport distances, requirements regarding transport times).

The "Motorways of the Sea", which are the maritime dimension of the TEN-T, would be connected in the ports selected as "primary nodes" of the Core Network. They should also provide the connection to insular states and/or a maritime alternative to land transport.

The Nodes of the Core Network

In the framework of this dual layered approach urban nodes (notably "primary" and, depending on their size, also "secondary") would play an important role within the multimodal Core Network, with regard to their infrastructure both for passengers and for freight. Apart from their wide range of economic, social and cultural functions, for the Union's transport system, they are particularly relevant in the following respect:

- they accommodate network links – both of the core and the comprehensive networks;
- they interconnect transport modes, thus enhancing multimodality;
- they connect long distance and/or international transport with regional and local transport.

Selection criteria for primary nodes

A. Nodes would be classified as primary nodes - either for passenger or for freight traffic, or for both - if they meet one of the following criteria:

1. They are a capital city of an EU Member State. (During the planning process only, the capitals of some third countries (candidate countries, Norway, Switzerland and the Western Balkans states) will be considered, without however including network elements outside the EU into the TEN-T.)

They are categorised as a "METropolitan Growth Area" (MEGA in the ESPON²⁰ Atlas 2006. "Weak MEGAs" with less than 0.5 million inhabitants are excluded from the primary nodes.

They form a conurbation or a city cluster which exceeds 1 million inhabitants, including their corresponding environs as defined by the corresponding NUTS 3²¹ zones (as far as there is a direct functional interrelation).

An airport or group of airports, located in a city or conurbation which qualifies as a "primary node", is also classified as "primary node".

²⁰ ESPON = European Spatial Planning Observatory Network:

MEGA = Metropolitan European Growth Areas (Cf. ESPON Atlas 2006)

²¹ NUTS = Nomenclature des unités territoriales statistiques (EUROSTAT)

NUTS 0 = Member states

NUTS 1 = major socio-economic regions

NUTS 2 = basic regions for the application of regional policies

NUTS 3 = small regions for specific diagnoses (districts)

Unless there are new arrangements; they mark a point where a Major Axis specified in the Commission Communication²² –“Extension of the major trans-European transport axes to the neighbouring countries” – crosses an external border of the EU.

B. Nodes would be classified as primary nodes for freight traffic if they meet the following criteria:

1. They represent a port with an annual transshipment volume of at least 1 % of the total transshipment volume of all EU seaports, either bulk or non-bulk.

In insular Member States or NUTS 1 regions with access to the sea, where no ports are classified according to above 2.3.B.1, as a general rule, only one seaport along each continuous coastline would be classified as primary node. A second port may be classified as primary node if the corresponding hinterland covers landlocked NUTS 1 regions and the cumulative transshipment volume exceeds the 1 % threshold set out in point 2.3.B.1. The size and the hinterland connectivity of the ports would be taken into account when considering two ports along a continuous coastline or in an insular Member State for classification as primary nodes. Ports on islands which are not Member States on their own, in general would not qualify as primary nodes since their hinterland connections, if in the TEN-T at all, typically belong to the Comprehensive Network.

Any port classified as a "primary node" must be directly connected with a multi-modal link of the Core Network, i.e. with road and rail (in countries where railways exist) and/or an inland waterway.

4. Inland ports, which mark the crossing point of a core network inland waterway and another Core network link, are classified as primary nodes for freight traffic, provided they are located in a “primary” node as defined in 2.2.A.1-3 or in a “secondary” node as defined in 2.2.C.1.

Selection criteria for secondary nodes

C. Nodes would be classified as secondary nodes if they meet one of the following criteria:

1. They represent a city or a conurbation which does not fulfil the criteria set out in point 2.2.A1-3 if their geographical location – at a branching or crossing point of “optimised” links between primary nodes (see point 2.1.2) – qualifies them however as core network nodes. Furthermore, they are equipped with multimodal platforms, according to their importance for passenger and freight transport.
2. As ports, they represent the two main bridgeheads of a ferry link which forms an integral part of a direct link between two primary nodes. One of these primary nodes may be located on an island, or a bay may interrupt the land link (road and/or ail) between the two primary nodes.

The Links of the Core Network

²² “Extension of the major trans-European transport axes to the neighbouring countries” - Guidelines for transport in Europe and neighbouring regions {SEC(2007) 98} {SEC(2007) 99} /* COM/2007/0032”

Given the principle of multimodality of the Core Network, all links should be multimodal. Accordingly, this network planning methodology would be applicable to road, rail and inland waterway links. The land-based Core Network links (road, rail and inland waterways) would be complemented by the "Motorways of the Sea" which aim at offering a sustainable alternative to land transport, in particular to road, at giving due access to insular states and shortcutting connections to peninsulas.

The selection of Core Network links should be guided by the following general principles: Links shall be of highest importance for long-distance traffic, and they should play a strategic role for the overcoming of topographical or political barriers. They should thereby contribute to a more homogenous and balanced accessibility structure throughout the Union.

Selection criteria for links

Core network links should meet the following criteria:

1. The links of the Core Network shall connect each "primary node" with its neighbouring "primary nodes", including the points where a Major Axis specified in the Commission Communication²³ –"Extension of the major trans-European transport axes to the neighbouring countries" – crosses an external border of the EU.

More distant "primary nodes" will thus be indirectly connected with each other. In certain cases, the chains thus constituted may however entail detours which are "rejected" by long-distance traffic flows. If, in such cases, a more direct link exists between two farer-away nodes which corresponds to the principles of the core network links, it may be included. Whether or not such a direct link will be included should be assessed, in each individual case, according to the relevant traffic flows which depend on the sizes of the "primary nodes" and the real – not crow flow – distances between them.

The structure of the Core Network and the selection of "secondary nodes" would allow bundling connections along certain sections, to enhance its efficiency, however taking into account acceptance of detours and capacity constraints. Cities or conurbations located at branching or crossing points would become "secondary nodes".

If, between two "primary nodes", no appropriate link does exist, or if there is a link which does not include all three modes, the link would be included in the core network only if the following conditions are fulfilled:

- the link is justified by its geographical function (e.g. as a "missing link" within a potential trans-European transport corridor),
- the implementation is feasible within the time horizons of Core Network planning (2030/2050)
- the link is economically viable

²³ "Extension of the major trans-European transport axes to the neighbouring countries" - Guidelines for transport in Europe and neighbouring regions {SEC(2007) 98} {SEC(2007) 99} /* COM/2007/0032"

- the link is environmentally sustainable.

Applying these criteria separately for the individual modes will allow deviating from the principle of multimodality at the level of links. In such cases, links may consist of infrastructure for only one or two modes of transport. There will inevitably be many links that do not feature inland waterways, but there might also be a few that exclude rail or road.

Within the freight part of the Core Network, seaports would be connected only to their corresponding hinterland, according to the relevant traffic flows. However, connections between ports may result from the overall itinerary of a Core Network link. In countries where railways exist, hinterland connections of ports of the Core Network must include road and rail.

Rail links of the core network in particular may include parallel branches²⁴, for instance as a result of the merging of the passengers and freight parts. Separating traffic flows with major differences in their characteristics, such as high speed passenger and heavy haul freight traffic, would allow better exploitation of rail capacities or avoid excessive gradients for freight and might even reduce overall investment needs.

Wherever no more recent agreements have been reached, the Core Network connections to neighbouring and third countries will be the Major Axes specified by the Communication from the Commission, "Extension of the major trans-European transport axes to the neighbouring countries - Guidelines for transport in Europe and neighbouring regions"²⁵.

Main airports, i.e. the airports of Core Network "primary nodes", should be connected to both road and rail (except in those countries where no railway network is available).

"Motorways of the Sea" will be a building block of the maritime dimension of the future TEN-T. While ports and their hinterland connections will merge into the multi-modal corridors (notably for freight), maritime corridors between EU ports will be important infrastructure components, subject to relevant transport policy objectives (such as maritime safety).

Suggested criteria for the routing of the links:

1. The links should be as straight and direct as possible, to follow the relevant long-distance traffic flows, to enhance effectiveness and efficiency of transport, to support territorial cohesion and to contribute to minimum greenhouse gas and polluting emissions as well as to sustainable land use.
2. Detours would be justified to bypass unavoidable obstacles and ecologically sensitive spaces (such as Natura 2000 sites) and to string additional "tertiary nodes"

²⁴ For instance, as the result of separate consideration of passenger and freight, or based on case-to-case investigations.

²⁵ Communication from the Commission, "Extension of the major trans-European transport axes to the neighbouring countries - Guidelines for transport in Europe and neighbouring regions" {SEC(2007) 98} {SEC(2007) 99} /* COM/2007/0032

(smaller cities, airports, freight terminals, etc.), if not too distant from the direct line and if the disadvantages due to additional detours do not exceed the benefits of improved regional or local accessibility.

However, detours that would not be justified by benefits greater than corresponding disadvantages, e.g. to integrate additional nodes such as smaller cities, airports, industrial clusters, freight terminals, etc. into the Core Network, should be avoided.

Removal of existing detours should be considered where possible, in particular if the traffic effectiveness of a corridor and/or cohesion is seriously affected by existing detours because of "missing links".

The links should follow, as far as possible, already existing infrastructure, under construction or planned. Traffic flows shall be bundled wherever possible, taking into account topographical conditions, environmental impacts, users' needs and potential capacity constraints.

Core Network inland waterways, which shall be of Category IV as a minimum, will mainly follow existing rivers and canals, connecting the economically most relevant regions and river basins of Europe with the most important seas around the continent.

4. Merging Passengers' and Freight Network Parts and Technical Parameters

The multimodal network parts for passengers and freight obtained after applying the methodology as described above should be overlaid to form the complete Core Network. In many cases this will lead to nodes and links common for passengers and freight; however there might be some network elements attributed to either passengers or freight.

Roads are generally used for both types of transport, so that no further distinction will be necessary. However for the choice of the appropriate technical parameters, there might be an impact from a high share of trucks, including on traffic safety.

The situation is more complex on rail. High differences in running speeds on the same track would strongly affect its capacity. Furthermore, there are quite different requirements for high speed passenger and heavy haul freight transport, with regards to radii of bends and gradients of slope. It may be taken into consideration using parallel lines for passengers and freight if their existing or planned technical parameters would correspond with such separation. This could in particular be applied in the case of new high-speed implemented parallel to existing conventional lines, where beside freight also regional passenger traffic might be foreseen.

Whereas the strategic importance at European level of a link is clearly determined by its geographical functionality and the volumes of long distance or international traffic flows, the design of the total capacity of the infrastructure should consider overall present and future transport volumes, including regional and local traffic.

Standards

Technical or geometrical parameters of the individual network elements, such as curve radii, gradients, cross section (number of lanes or tracks, etc.) determine traffic speed and capacity, but also impacts on landscape, energy consumption, emissions, safety and construction and maintenance costs.

Apart from these geometrical parameters, high attention should be paid to the technical equipment of the network, in order to enhance smooth, efficient and sustainable operation and integration of users' information. This issue is covered by the bundle of measures subsumed under "supplementary infrastructure".

Basically, the selection of technical standards would need to follow real needs, which mainly depend on traffic demand, including the shares of passengers' and freight transport and the intended transport times or target timetable. That means that rather functional or operational standards should be specified, while the selection of the corresponding technical standards is left to project planning, however taking into account the required level of service, the needs of technical interoperability and homogeneous conditions along a certain corridor.

According to the high strategic importance of the Core Network, technical standards to be applied should be at the level of those for the Comprehensive Network as a minimum, however in addition, all smart infrastructure for traffic management, monitoring and interoperability within and across nodes shall be foreseen, as well as the provisions to enable de-carbonisation and sustainable co-modal transport.

In this context, all relevant legislation, e.g. in particular for rail, the "Technical Specifications for Interoperability" (TSI) have to be taken into account, as well as the fact that within the TEN-T all inland waterways have to correspond to Category IV, at least.