centrope partners

Austria
- Federal Province of Burgenland
- Federal Province of Lower Austria
- Federal Province and City of Vienna
- City of Eisenstadt
- City of St. Pölten

Czech Republic
- South Moravian Region
- City of Brno
- Vysočina Region (observer)

Hungary
- Győr-Moson-Sopron County
- Vas County
- City of Győr
- City of Sopron
- City of Szombathely

Slovakia
- Bratislava Self-Governing Region
- Trnava Self-Governing Region
- City of Bratislava
- City of Trnava

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TINA Vienna Urban Technologies & Strategies, Vienna/Austria
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**Introduction: infrastructure and transport development in centrope – from strategy to action**

Ever since the beginning of intensified cross-border co-operation under the centrope initiative, infrastructure and transport issues have played a key role. They are not only about the very concrete needs and concerns of many citizens who regularly pass the borders but relate to something much more fundamental: new linkages for transboundary mobility and shortened travel times in many cases will create a functional cross-border region where only limited interaction has existed so far. The notion of centrope as a common, polycentric Euro region thus cannot stand without fast and capable transport links that allow for a high degree of economic integration as well as labour market mobility and workplace commuting.

Likewise, the notion of centrope as an easily accessible business location, European cross-roads and hub for Central Europe is dependent on efficient high-level rail and road links, attractive airports and a Danube that lives up to its full potential as a waterway. At the same time, centrope will only succeed as a region that is able to reconcile its infrastructure and transport requirements with a sustainable form of mobility, ensuring ecologically sound development and high quality of life.

A joint strategy growing from a centrope capacity pilot action

It is therefore all the more significant that the pilot action “Infrastructure Needs Assessment Tool” (INAT) was implemented within the project centrope capacity. As a first step, it produced a comprehensive overview on the state of transport infrastructure development in the quadrangle and a thorough analysis of shortcomings and future demands (INAT Mapping Report). Based on a common methodology, a transnational project team from all four countries accessed relevant documents and conducted a comprehensive mapping of existing regional development strategies, functional specificities as well as the infrastructure status quo. Eventually, this assessment – which also included feedback loops with the relevant authorities of the partner cities and regions – led to the development of the first-ever common picture of the state of transport and mobility affairs in centrope. Even more, by providing a set of compelling reasons for a more co-ordinated approach, it suggests that a common development strategy is all but indispensable.

The “Strategic Framework for Transport and Infrastructure Development in centrope”, elaborated as a second step within the INAT centrope capacity pilot action, represents the common answer of the partner regions and cities to the needs thus identified. Crucially, they now subscribe to a joint vision of how transport links and infrastructure should look like in the future from a cross-border perspective and which public transport and other services should be on offer. The recurrent consultation process among the partner regions and cities that led to the Strategic Framework peaked with its discussion and eventual adoption on a political level at the semi-annual centrope Summit meetings. The agreement on the Strategic Framework at the Brno Summit of May 2012, however, marked only the beginning of the implementation phase of the co-operation agenda.

The brochure at hand provides an overview both on the key analytical findings of the infrastructure assessment and on the content of the Strategic Framework for Transport and Infrastructure Development in centrope. All reports under the INAT pilot action can be downloaded from the website www.centrope.com
Executive Summary

The need for a joint strategy for transport and infrastructure development

In recent years, centrope has shown a remarkable performance in terms of economic growth and the acquisition of foreign direct investment – two indicators that illustrate the dynamic development of the region. At the same time, cross-border traffic within centrope has grown above average, highlighting the dynamic economic and spatial integration of the region itself. The accessibility and connectivity of centrope are on the one hand crucial preconditions to foster competitiveness on both a European and global scale. On the other hand, the region’s position at a crossroads of Europe, its increasing spatial integration and the ongoing rise in motorisation entail marked growth of both passenger car and lorry traffic.

Five main challenges requiring a concise strategy aimed at the further development of transport infrastructure and public transport services have been identified in the centrope Infrastructure Needs Assessment:

1. The dynamic integration of centrope will lead to a further increase of cross-border interactions, with a strong expected growth of car traffic unless the railway network is substantially upgraded and public transport services are improved.
2. centrope as a transnational and European traffic and transport node will challenge infrastructure network capacities as well as node facilities.
3. Serious bottlenecks and service deficiencies of the main infrastructure network are to be expected in the future.
4. Weak public transport supply is a threat for sustainable traffic and transport performance.
5. The responsibility for decision-making and budgets primarily lies with the national and European levels and calls for joint lobbying.
Executive Summary

The Strategic Framework for Transport and Infrastructure Development in centrope

Main points of the politically agreed Strategic Framework include:

- A long-term “Vision 2030” for the main rail and road networks in centrope. It also contains a position on the revision of the Trans-European Transport Network (TEN-T), with an appeal to include important connections in the future Trans-European Core Network.

- Another main topic is the implementation and upgrading of various regional cross-border connections.

- The strategic development of the Danube as an important transport axis with several multimodal freight terminals and promising perspectives for passenger traffic is addressed as well, as is the further capacity enhancement of the centrope airport system.

- The gradual development of integrated cross-border public transport services will improve the mutual accessibility of the partner regions and cities by public transport.

- The implementation of a multimodal and multilingual traffic information system should create a user-friendly online service, with positive effects for an optimal utilisation of the existing infrastructure.

- The development of joint cross-border planning instruments is promoted, like a centrope traffic model, periodical surveys on cross-border traffic, a market analysis of cross-border public transport demand and periodical mobility surveys.

To support the implementation of the adopted Strategic Framework, new co-ordination structures are proposed. They will entail a High-level Administrative Board linked to the political centrope process supported by operative capacities to further the cross-border mobility agenda.

gain mobility. gain from centrope.
Main findings of the centrope Infrastructure Needs Assessment

Mobility improvement, business location development and spatial integration constituted major concerns for the comprehensive mapping of the infrastructure status quo that went along with a transnational stakeholder consultation process. Together, the findings of the assessment spell out major development potentials and challenges and lay bare the urgent need for a joint strategy.

The dynamic integration of centrope leads to a growth in cross-border interactions

The past development of cross-border traffic is impressive proof of the dynamic integration of centrope and it can be expected that this trend will continue. For example, at the Austrian borders with the other centrope partner regions (for which forecasts exist), car traffic will increase by up to 135% until 2025, as compared to an increase by only up to 25% at other sections of Austria’s border. For cross-border freight volume, these figures are 83% and 38% respectively until 2030 (Figure 1 and 2).

Due to the motorisation catch-up process in the Czech Republic, Slovakia and Hungary, the car pool in centrope will grow by about 40% by 2030. Without substantial upgrading of the railway network and improved public transport services, a strong increase in car traffic is likely.

centrope as a transnational and European traffic and transport crossroads & node

Apart from cross-border integration within centrope, the crossing of several transnational European corridors will on the one hand challenge infrastructure network capacities and nodal facilities. On the other hand, the connectivity and design of the Trans-European Transport Network is an important prerequisite for dynamic development and economic growth (Figure 3). Capitalising on the development of the transnational infrastructure for the whole of centrope and implementing new infrastructure measures in an environment-friendly manner is thus an issue of major concern.
Main findings of the centrope Infrastructure Needs Assessment

Growing cross-border traffic (Fig. 1)

Predicted increase of traffic at important Austrian border crossings until 2025, measured in numbers of passengers per workday: more traffic is inevitable, and particularly so within centrope. Policies favouring public transport and rail, however, will make a huge difference.

Austrian border crossings with other centrope partner regions

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Road</th>
<th>Rail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trend scenario without policy change</td>
<td>+135%</td>
<td>+144%</td>
</tr>
<tr>
<td>Policy scenario favouring public transport and rail</td>
<td>+98%</td>
<td>+150%</td>
</tr>
</tbody>
</table>

By comparison: other Austrian border crossings

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Road</th>
<th>Rail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trend scenario without policy change</td>
<td>+21%</td>
<td>+43%</td>
</tr>
<tr>
<td>Policy scenario favouring public transport and rail</td>
<td>±0%</td>
<td>+61%</td>
</tr>
</tbody>
</table>

Source: Austrian Federal Ministry for Transport, Innovation and Technology (2009), Traffic Forecast for Austria 2025+

Set to grow significantly: cross-border freight traffic (Fig. 2)

Growth of cross-border freight volume from 2005 to 2030, measured in tonnes, at Austrian border crossings with other centrope partner regions (trend scenario): economic integration will stimulate an increase in cross-border freight traffic that exceeds the expected general freight volume growth, as illustrated by the example of Austria. If current policies are continued, road traffic will account for the largest share of additional cross-border freight volume by far.

<table>
<thead>
<tr>
<th>Mode</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Road</td>
<td>+120%</td>
</tr>
<tr>
<td>Rail</td>
<td>+55%</td>
</tr>
<tr>
<td>Waterway (Danube)</td>
<td>+51%</td>
</tr>
<tr>
<td>Total cross-border freight volume</td>
<td>+83%</td>
</tr>
<tr>
<td>Total freight volume in Austria</td>
<td>+38%</td>
</tr>
</tbody>
</table>

Source: Austrian Ministry for Transport, Innovation and Technology (2009): Traffic Forecast for Austria 2025+
Main findings of the centrope Infrastructure Needs Assessment

Decision-making powers, not only relating to transnational infrastructure investments but also to national infrastructure development, are not a competence of the regional level. Therefore it is of common interest to develop a joint transnational centrope strategy in order to influence the priorities of infrastructure projects at the national and European levels.

**Without network extensions**, essential parts of the main railway system will face serious capacity constraints even without the intended policy, which presses for a shift from road to rail. Large sections of the railway network currently do not meet the requirements of modern high-speed rail service. Here the nodes Vienna, Bratislava and Brno are key to improve the performance of the railway system in centrope. While the reorganisation of the railway node in Vienna is on its way, efforts to modernise the Bratislava and Brno railway nodes have not been initiated so far (Figure 4).

The main road network is not yet fully in place, either. The primary networks around the urban agglomerations in particular suffer from capacity constraints. Unless countermeasures are taken, these constraints are bound to spread to large parts of the network. Together with often low standards of maintenance, these capacity constraints entail environmental and safety problems in residential areas as well as longer travel times for passengers and goods (Figure 5).

Capacity constraints will continue to affect the agglomerations even after current extension projects have been realised. Hence additional measures are needed to compensate for road capacity problems and to achieve a sustainable transport system in the agglomerations: development of traffic management tools and provision of sufficient urban public transport, rail and waterway services.

Contrary to rail and road, the Danube offers ample untapped transport capacities. However, freight transport on the Danube lacks stable water levels and a scheduled container service extending upstream beyond Budapest into centrope is only now being introduced.

Over the past decade, an attractive regular connection for passenger transport between Vienna and Bratislava was established in the form of the Twin City Liner. Use of the waterway for tourism is a growing sector, as cruisers travel along the river from the Rhine-Main-Danube Canal all the way down to the Black Sea.

An efficient airport system is crucial for the competitiveness of centrope. The airports of Vienna and Bratislava serve as international hubs and guarantee the worldwide accessibility of centrope. The airports Brno-Tuřany, Győr-Pér and Piešťany are of regional importance. A demand-based development of airport capacities...
Main findings
of the centrope Infrastructure Needs Assessment

is on the way. The opening of the new Check-in 3 (Skylink) terminal in 2012 at Vienna airport and the simultaneous completion of the new terminal at Bratislava airport will boost the capacities and quality of these two most important flight hubs in centrope. The enhancement of airport accessibility by public transport in general and specifically the provision of efficient public transport connections between the airports of Vienna and Bratislava are major concerns in this area.

Traffic simulations demonstrate that spatial and transport policies can substantially influence the modal split. For example, without a strong policy in favour of public transport, car traffic at the Austrian borders with the other centrope partners is expected to grow by about 135%. If a policy boosting public transport is put in place, car traffic will still increase, but only by about 98% – a significant difference (Figure 1).

 Except for a few connections, cross-border public transport is currently not competitive (Figure 6). The quality of public transport supply not only has a bearing on the future environmental impact of car traffic but also helps to reduce regional and social disparities in intraregional accessibility that are due to very high fuel prices (compared to household incomes) in the Czech, Hungarian and Slovak centrope partner regions.

The legal, institutional and financial framework is one of the obstacles to the improvement of regional cross-border public transport. There are no integrated regional public transport associations as contracting partners in Slovakia and Hungary, and the public transport subsidy system does not allow for the integration of such services across borders.

Other deficits that need to be tackled include the further harmonisation of schedules, the creation of customer-friendly ticketing methods or the implementation of a comprehensive multimodal and multilingual traffic information system.

centrope is a growing region. Population, employment and GDP development are above the European average. The growth of cross-border traffic volumes suggests dynamic spatial integration. Common policy goals for regional development should ensure an environmentally sound and resource-efficient growth region with climate, water, soil, air and nature protection. Its compact settlement structure should allow good access to public transport supply and reduce the need for car use (Figures 7 to 9).

The focus of regional development concepts in all centrope partner regions is on the creation of polycentric structures and development axes hooked up to high-level infrastructure. This resource-efficient settlement structure is to contribute to the preservation of valuable natural farmland with high biodiversity, an attractive cultural landscape for tourism and nature protection areas.

Analyses of implemented or planned large-scale business sites show that these are located within the defined polycentric fabric and spatial development axes, but more emphasis on the provision of smooth access to the railway network is needed.
Main findings of the centrope Infrastructure Needs Assessment

A Central European crossroads (Fig. 3)

EU Transnational Transport Corridors (TEN-T) connecting centrope and extension proposals: the TEN-T corridors are a set of designated rail, road and waterway networks that are to bring the continent closer together. They are determined at a European level and enjoy preferential treatment in both EU and national transport policies. Already today, five “TEN-T priority axes” run through centrope. North-south links that would connect the Baltic to the Adriatic via centrope, however, are not yet included in the TEN-T. Proposed extensions focus on this shortcoming.

TEN-T Priority Projects (PP)
- PP 17 Railway axis Paris-Vienna-Bratislava
- PP 18 Waterway axis Rhine/Maas-Main-Danube
- PP 22 Railway axis Athens-Vienna-Prague
- PP 23 Railway axis Gdansk-Brno/Bratislava-Vienna
- PP 25 Motorway axis Gdansk-Brno/Bratislava-Vienna

Extension proposals put forward by transnational EU projects/initiatives
- Central European Transport Corridor (CETC)
- South-East Transport Axis (SETA)

Extension proposal put forward by rail operators
- Broad-gauge railway from Ukrainian-Slovakian border to Bratislava/Vienna

Map design: Zeljka Musovic-Dobos, Helmut Hiess

09
Main findings of the centrope Infrastructure Needs Assessment

Without investments: a creaking rail network by 2025 (Fig. 4)

Projected capacity utilisation by 2025 of railway infrastructure in place in 2009: network extensions and upgrades are necessary to cope with the expected growth in rail traffic. While some of the bottlenecks will disappear due to construction projects already completed (e.g. high-speed line Vienna-St.Pölten) or begun (e.g. Semmering base tunnel), major projects still need to secure funding and actual implementation.
Main findings of the centrope Infrastructure Needs Assessment

To cope with growing car traffic, both new and improved motorways are required (Fig. 5)

Projected capacity utilisation by 2025 of road infrastructure in place in 2010: without efforts to improve the high-level road network in centrope, the infrastructure will be overstretched, specifically on sections of particular importance for the region’s internal and external accessibility. In particular, the strain on the network could be relieved by completion of the Brno-Vienna motorway/expressway, construction of a Bratislava bypass motorway and improvement of the existing motorways leading to Trnava and Győr.

Capacity utilisation of main roads

- Less than 50%
- 50 to 80%
- 80 to 100%
- In excess of 100%


Map design: Vlastislav Novák, Tomáš Hruban, Petr Bíjok
Main findings of the centrope Infrastructure Needs Assessment

Public transport can keep up with private car use only where connecting major urban centres (Fig. 6)

Competitiveness of rail and bus public transport with passenger car use in cross-border connections between cities with more than 50,000 inhabitants: in 2011, competitive services were offered almost exclusively on trips between the biggest cities of centrope. While the opening in late 2012 of the Vienna-St.Pölten high-speed line will alleviate the situation, the lack of attractive services on important connections like Bratislava-Győr will continue to impede mutual accessibility. Unless upcoming investments in rail infrastructure precede or at least accompany improvements of the motorway network, public transport will lose further ground vis-à-vis the car.

- **Competitiveness of public transport with passenger car use**: travel times by public transport less than 33% longer than by passenger car; frequency: at least 10 connections per day, allowing for one required change.

- **Limited competitiveness of public transport with passenger car use**: travel times by public transport between 33% and 50% longer than by passenger car; frequency: at least 5 connections per day, allowing for one required change.

- **Lack of competitiveness of public transport with passenger car use**: travel times by public transport over 50% longer than by passenger car; fewer than 5 connections per day or more than one change required.

Source: www.oebb.at, www.cp.atlas.sk, Google Maps

Map design: Zeljka Musovic-Dobos, Helmut Hiess
Main findings of the centrope Infrastructure Needs Assessment

Overall population growth combined with a need to accommodate contrary dynamics (Fig. 7)

(Projected) population development in centrope partner regions 1991-2030: centrope is faced with partly significant population growth in its core agglomerations and a stagnant, if not decreasing population in its peripheral parts. Overall, the quadrangle is expected to grow by close to half a million people until 2030 to attain a total of seven million inhabitants.

<table>
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<tbody>
<tr>
<td>Burgenland</td>
<td>272,951</td>
<td>276,331</td>
<td>283,506</td>
<td>306,000</td>
<td>33,049 (12.1%)</td>
</tr>
<tr>
<td>Lower Austria</td>
<td>1,479,187</td>
<td>1,542,030</td>
<td>1,606,615</td>
<td>1,783,400</td>
<td>304,213 (20.6%)</td>
</tr>
<tr>
<td>Vienna</td>
<td>1,512,599</td>
<td>1,562,536</td>
<td>1,692,067</td>
<td>1,901,700</td>
<td>389,101 (25.7%)</td>
</tr>
<tr>
<td>South Moravian Region</td>
<td>1,142,000</td>
<td>1,127,718</td>
<td>1,150,009</td>
<td>1,213,500</td>
<td>71,500 (6.3%)</td>
</tr>
<tr>
<td>Bratislava Region</td>
<td>606,351</td>
<td>599,042</td>
<td>622,706</td>
<td>635,800</td>
<td>29,449 (4.9%)</td>
</tr>
<tr>
<td>Trnava Region</td>
<td>541,992</td>
<td>550,918</td>
<td>561,525</td>
<td>545,800</td>
<td>3,808 (0.7%)</td>
</tr>
<tr>
<td>Győr-Moson-Sopron</td>
<td>426,911</td>
<td>434,209</td>
<td>447,033</td>
<td>432,300</td>
<td>5,389 (1.3%)</td>
</tr>
<tr>
<td>Vas</td>
<td>274,756</td>
<td>269,149</td>
<td>260,950</td>
<td>252,300</td>
<td>-22,456 (-8.2%)</td>
</tr>
<tr>
<td>Total</td>
<td>6,256,747</td>
<td>6,361,933</td>
<td>6,624,411</td>
<td>7,070,800</td>
<td>814,053 (13.0%)</td>
</tr>
</tbody>
</table>

Main findings of the centrope Infrastructure Needs Assessment

Nature and people: an uneasy co-existence (Fig. 8)

Protected NATURA 2000 areas in centrope (2011): NATURA 2000 zones are designated according to EU legislation stipulating the establishment of protection and conservation areas for birds (Birds Directive) and for species other than birds as well as for habitats (Habitats Directive). centrope is richly endowed with areas of outstanding natural diversity, often in the close vicinity of larger settlements and major transport infrastructure – a blessing for the local population looking for recreation but an arduous challenge for sustainable regional development seriously committed to conservation. Effective management of the delicate balance between natural and built environments is therefore another reason for cross-border co-operation.
Main findings of the centrope Infrastructure Needs Assessment

Make things, buy things, cause traffic (Fig. 9)

Business locations and shopping centres outside the big cities of centrope (2011): business parks and other production sites located outside the urban cores signal healthy polycentric development, with jobs created and maintained across the entire region. Shopping centres offer an alternative to inner-city stores and score with large retail space. Both, however, are major sources of additional traffic and further urban sprawl, with consequences for transport and other types of infrastructure that must be provided. Open borders, better mutual accessibility, different price levels, a wider range of consumer goods and a common currency all encourage more cross-border shopping – it’s high time to pursue co-ordinated strategies for spatial development.
The Strategic Framework for Transport and Infrastructure Development in centropo

Following the analytical assessment, the Strategic Framework for Transport and Infrastructure Development in centropo was elaborated and politically agreed among the centropo partner regions and cities. It opens a comprehensive, cross-border development perspective based on a shared understanding of existing deficits and extension requirements. Main elements of the Strategic Framework are a rail and road target network for centropo (Infrastructure Vision 2030), objectives for the Danube waterway and the airports as well as a cross-border public transport package.

Infrastructure Vision 2030: target rail network

The existing railway network suffers from serious capacity constraints and capacity problems. The development, extension and upgrading of this network is of vital interest for the centropo partner regions in order to fulfil its role as a crossroads of several transnational transport corridors that are part of the “Trans-European Core Network” and the “Trans-European Comprehensive Network”.

With respect to the railway network, the Infrastructure Vision 2030 includes plans for the modernisation and development of stations and freight terminals. The combined development of both the nodes of the network and the lines connecting them is important to avoid bottlenecks, enable through-connections and ensure optimised accessibility between terminals for freight traffic.

The upgrading of the railway network will augment capacities and reduce travel times between the main cities of centropo, in the process improving accessibility within the entire region and increasing the competitiveness of public transport (Figures 10 and 11).

1 Vienna-St Pölten: new high-speed line
2a Austrian border-Budapest: new high-speed line
2b Ostbahn line Vienna-Hungarian border: upgrading to high-speed line
3 Rajka-Hegyeshalom: upgrading
4a Brno-Slovak border: upgrading
4b Bratislava-Czech border: upgrading
5 Brno-Přerov: modernisation
6 Brno: having TEN network cross the city
7 Břeclav: having TEN network cross the city
8a Improvement of Vienna railway hub: Pottendorf Line Meidling-Blumental, upgrading
8b Improvement of Vienna railway hub: Simmering-Ostbahn Bridge, extension to 3 tracks
8c Improvement of Vienna railway hub: Stadlau-Viennese/Lower Austrian border (Marchegger Ast)
8d Improvement of Vienna railway hub: Vienna Main Station
9 St. Pölten freight train bypass
10 Westbahn line Ybbs an der Donau-Amstetten, extension to 4 tracks
11 Pottendorf Line: Blumenthal-Wampersdorf, extension to 2 tracks
12 Pottendorf Line: Wampersdorf-Wiens Neustadt, upgrading
13 Gloggnitz-Mürzzuschlag/Semmering base tunnel
14 Wiener Neustadt-Gloggnitz: upgrading to 160 km/h
15 Viennese/Lower Austrian border-Marchegg: electrification, extension to 2 tracks, upgrading to 160 km/h
16 Nordbahn line Süssenbrunn-Czech border: upgrading to 160 km/h
17 Brno-Prague: new high-speed line
18a Improvement of Vienna railway hub: Oberlaa marshalling yard (Laeberberg), new link
18b Improvement of Vienna railway hub: new link between Ostbahn-Vienna Airport train line
18c Improvement of Vienna railway hub: Süssenbrunn, link reconstruction
The Strategic Framework for Transport and Infrastructure Development in centrope

On track: the centrope rail network vision 2030 (Fig. 10)

centrope target rail network: with regard to improved rail connections, the Infrastructure Vision 2030 includes newly-built high-speed lines, upgraded main lines, current regional lines to be transformed into main lines as well as more efficient network nodes, to be attained inter alia by constructing new stations in major cities.

Existing network

- Main railways
- Secondary railways

Network extensions

- New line or upgrading of existing line

19 Wampersdorf-Ebenfurth-Eisenstadt: new link Ebenfurth
20a Wiener Neustadt-Hungarian border: electrification
20b Sopron-Austrian border: electrification
21 Bratislava-Galanta: upgrading up to 160 km/h
22 Improvement of Bratislava railway hub: Petrzalka-Bratislava Main Station-Bratislava Airport
23 Fehring-Hungarian border: electrification
24 Vienna Airport: through station
25 Vienna Airport-Götzendorf: new link
26 Gänserndorf-Marchegg: electrification, upgrading
27 Wampersdorf-Ebenfurth-Eisenstadt: new link Müllendorf
28 Kőrmen-Dzialatö: upgrading
29 Hegyeshalom-Csorna-Szombathely: electrification
30 Szombathely-Zalaszentiván: electrification
31 Szombathely-Kőszeg: line extension to Kőszeg town centre
32 Brno-Třebič: electrification
33 Boskovice junction
34 Šakvice-Hustopeče: electrification
35 Hrušovany u Brna-Zdiarochovice: electrification
36 Křenovice junction
37 Znojmo-Břeclav: reconstruction of line
38 Neusiedl-Pardorf-Kittsee: new link Pardorf
39 Győr-Sopron: extension to 2 tracks
40 Győr-Pér-Kisbér: new link
41 Győr-Pápa-Celldömölk-Porpác: electrification

Source: INAT project partners
Map design: Vlastislav Novák, Tomáš Hruban, Petr Bijok
The Strategic Framework for Transport and Infrastructure Development in centrope

Adjustment of Trans-European Transport Network

Regarding the further development of the Trans-European Transport Network (TEN-T), the partner regions and cities widely agree on the recent proposal of the European Commission and the European Council, but call for the:

- **Inclusion of high-level rail connection Vienna – Vienna Airport – Bratislava – Bratislava Airport in the Core Network** At the moment, only the connection north of the Danube – i.e. Vienna via Marchegg to Bratislava – is part of the proposal for the Core Network. From the regions’ points of view, the connection south of the Danube carries equal weight, as it integrates the airports of Vienna and Bratislava into the high-level railway system for the entire region. Other important parts of this connection are already part of the proposal: the Austrian Ostbahn line between Götzendorf and Parndorf and the north-south connection through Bratislava and farther on to Hungary.

- **Inclusion of the Brno railway node in the TEN-T Core Network** Brno is an important node of the proposed transport network. The priority axis No. 22 – Prague – Vienna/Bratislava – Budapest – Athens and the Baltic-Adriatic axis Gdansk – Vienna – Bologna intersect at Brno. Therefore the development of he Brno railway node should be seen as part of the Core Network.

- **Incorporation of the Vienna/Bratislava-Zagreb railway corridor in the TEN-T**
  
  From the centrope partners’ point of view, the missing links of the South-East Transport Axis (SETA) from Vienna/Bratislava to Croatia (Zagreb, Rijeka) should be incorporated into the Trans-European Transport Network. The existing railway line is characterised by poor technical standards and low-speed sections and unable to offer high-quality service to Croatia. The following sections should be added to the TEN-T: Hegyeshalom – Szombathely, Kőrmend – Zalalövő, Szombathely – Zalaszentiván.

Speeding-up of the Sopron – Szombathely railway line

The improvement of the SETA railway axis will reduce travel times between Vienna/Bratislava and Zagreb from six to about four hours. The Vienna – Szombathely line will likewise benefit from this travel time reduction.

Due to its status as a regional connection, trains on the Hungarian section of the axis currently have to stop at each station. The contract provisions for rail transport providers need to be changed to allow for international long-distance trains with acceptable travel times.

Acceptable travel times

Shortened rail travel times between selected destinations as a result of infrastructure improvement (in minutes) (Figure 11).

<table>
<thead>
<tr>
<th>Selected relations</th>
<th>2011</th>
<th>2030</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>in %</td>
</tr>
<tr>
<td>Brno – Vienna</td>
<td>120</td>
<td>100</td>
<td>- 20</td>
</tr>
<tr>
<td>Břeclav – Vienna</td>
<td>80</td>
<td>60</td>
<td>- 20</td>
</tr>
<tr>
<td>Bratislava – Vienna</td>
<td>70</td>
<td>45</td>
<td>- 25</td>
</tr>
<tr>
<td>Sopron – Vienna</td>
<td>75</td>
<td>60</td>
<td>- 15</td>
</tr>
<tr>
<td>Győr – Vienna</td>
<td>75</td>
<td>60</td>
<td>-15</td>
</tr>
<tr>
<td>Brno – Vienna Airport (VIE)</td>
<td>150</td>
<td>115</td>
<td>- 35</td>
</tr>
<tr>
<td>Bratislava – VIE</td>
<td>95</td>
<td>60</td>
<td>- 35</td>
</tr>
<tr>
<td>Sopron – VIE</td>
<td>110</td>
<td>85</td>
<td>- 25</td>
</tr>
<tr>
<td>St. Pölten – Bratislava</td>
<td>132</td>
<td>82</td>
<td>- 50</td>
</tr>
</tbody>
</table>

Source: Austrian Federal Railways (2011): Target Network 2025+
The Strategic Framework for Transport and Infrastructure Development in centrope

**Biking in centrope**

The region is not only a hub of transnational railway and road corridors but also an interface of the European cycle route network. Moreover, regional and local cross-border routes and networks were likewise established in recent years. To encourage biking for leisure and tourism as well as for daytrip purposes (work, shopping), the following prerequisites must be complied with:

- Co-ordinated development of transnational routes across the region
- Continued development of local and regional biking facilities and, in particular, finalisation of the circular route around Neusiedler See/Fertő-tó
- Joint development of a comprehensive web platform for biking in the region with information about the network itself, tourism hotspots and accommodation

**Take a break. Take in centrope.**
(Fig. 12)

EuroVelo cycle routes crossing centrope: the EuroVelo network comprises 13 long-distance biking routes spanning the entire continent. Four routes traverse centrope, among them the hugely popular Rivers Route along the Danube. A boon to centrope’s tourism sector, they bring in international visitors and at the same time tempt Centropeans to explore their neighbourhood.

**North-south EuroVelo routes**

- Amber Route: Baltic Sea to Adriatic Sea/Gdansk-Pula (1,930 km)
- Iron Curtain Trail: Barents Sea to Black Sea (6,800 km)

**West-east EuroVelo routes**

- Central Europe Route: Roscoff-Kiev (4,000 km)
- Rivers Route: Atlantic Ocean to Black Sea/Nantes-Constanța (3,653 km)

Source: INAT project partners
Map design: Vlastislav Novák, Tomáš Hruban, Petr Bíjok
Regional cross-border railway sections

Several regional railway connections were closed in the era of the Cold War and Iron Curtain. Tracks were removed and the land sold to private owners. Although the revitalisation of these sections is difficult, the centrope partner regions propose to reconstruct the former railway connection between Oberwart and Szombathely. Together with the already completed upgrading of the Sopron – Szombathely section and the development of the SETA axis, this connection will increase the accessibility of southern Burgenland and strengthen the future importance of Szombathely as a central location of the cross-border region.

Infrastructure Vision 2030: target road network

Both with regard to the high-ranking and the secondary networks, roads in centrope suffer from capacity constraints, network gaps, insufficient quality and traffic safety problems. In many cases, traffic in this congested network causes severe environmental impact on settlements. The motorway and main target road network endorsed in the Infrastructure Vision 2030 depicts a seamless, safe and efficient system that is up to the traffic volume, increases the safety of its users and balances its environmental impact (Figure 13).

For example, the extension of the road network will decrease travel times between Vienna and Brno by 30% and reduce environmental pollution in the villages along the route. Specifically, the extension of the M15 and M86 motorways (Bratislava – Mosonmagyaróvár – Szombathely) in Hungary will shift transnational heavy-duty traffic from the villages to the new motorways. The expressway connection from Vienna to Bratislava north of the Danube and the finalisation of the Bratislava bypass will create a regional ring-road system to provide sufficient capacities and restore environmental quality in the villages currently beset by massive traffic volumes.

With regard to the Trans-European Transport Network, the centrope partner regions welcome the proposal of the European Commission and European Council but call for inclusion of the high-level motorway link between Vienna and Bratislava (via S8 und D4) in the TEN-T. This link is part of a regional Vienna – Bratislava ring-road system tasked with splitting the growing volume of Vienna – Bratislava intercity traffic between two routes.

Cross-border roads. The following regional cross-border connections shall be implemented or upgraded:
- Angern (AT) – Záhorská Ves (SK) bridge over the Morava River
- Upgrade of connection Sopron (HU) – St. Margarethen (AT) on the Hungarian side
- Designation of the Hungarian part of Fertőd (HU) – Pamhagen (AT) road connection as a main road
- Zsira (HU) – Lutzmansburg (AT): upgrading of a farm track to a regional road
- Sopronkőhida (HU) – St. Margarethen (AT): upgrading on the Hungarian side, co-ordination with Burgenland needed
- Brennbergbánya (HU) – Ritzing (AT): link to L 334 regional road
- Agfalva (HU) – Loipersbach (AT): new link to L 224 regional road
- Albert Kázmér-puszta (HU) – Halbturn (AT): regional connection Halbturn – Mosonmagyaróvár, upgrading on the Hungarian side
The Strategic Framework for Transport and Infrastructure Development in centrope

On the way: the centrope motorway and main road network vision for 2030 (Figure 13)

centrope target road network: with regard to improved road connections, the Infrastructure Vision 2030 includes the elimination of gaps in the existing expressway/motorway network, the creation of new high-level connections, the construction of several bypasses to relieve the stress of through traffic from urban areas as well as several upgradings of the existing network.

1 S1 expressway: north-east bypass, new road
   (completion of Vienna bypass)
2a A5 motorway: Schrick-Czech border section, new road
   (completion of Brno-Vienna highway connection)
2b R52 expressway: Pohreblie-Mikulov/Austrian border section,
   new road (completion of Brno-Vienna highway connection)
3 Czech D1 motorway: Kyvalka-Holubice section, extension
4 Slovak D1 motorway: Bratislava-Tmava section,
   extension to 6 lanes
5 D4 motorway: Bratislava bypass, new road
6 Completion of M15 motorway:
   Slovak border-M1 section, extension to 4 lanes
7a S7 expressway: A2-Hungarian border section,
   new road
7b M8 motorway: Austrian border-Vasvár section, new road
8 R43 (R35-D1): south-western and southern tangential roads
9 R55 expressway: Olomouc-D2 section
10 M86 motorway: Mosonmagyaróvár/Levél-Szombathely section, extension
11 M9 motorway: Szombathely-Vasvár section, extension
12 M9 motorway: Vasvár-Zalaegerszeg section, extension
13 I/86 road: Szombathely-Kőrmend section, upgrading
14a S8 expressway: S1-Slovak border section, new road
14b D2 motorway-Austrian border: new road
15 R7 expressway: Bratislava-Dunajská Streda section, new road
16 M85 Csorna-Győr: extension
17 M85-M84 Kapuvár-Sopron: extension
18a A3 motorway: Eisenstadt-Hungarian border section, new road
18b M85 motorway: Sopron-Austrian border section, extension
19a S3 expressway: Stockerau-Czech border section, upgrading,
   partly new road
19b I/38: Znojmo bypass
20 S34 expressway: St. Pölten-Wilhelmsburg section, new road
21a S31 expressway: Oberpullendorf-Hungarian border section, extension
21b M87 motorway: Szombathely-Kőszeg-Austrian border section,
   extension
22 I/55: Břeclav bypass
23 I/8 road: Kőrmend-Austrian border
24 M85 motorway: Csorna-Kapuvár section, extension
25 M9 motorway: Nagycenk-Nemesbűd section, new road
26 R1/R7 expressway: Tmava-Dunajská Streda-Győr, new road
27 Expressway: Tmava-D2, new road

Existing network

Network extensions

Motorways
Expressways
Other main roads
Other roads

New connection/upgrading of existing connection

Source: INAT project partners
Map design: Vlastislav Novák, Tomáš Hruban, Petr Bijok
The Strategic Framework for Transport and Infrastructure Development in centrope

The Danube waterway provides an important transport corridor for both freight and passenger transport. The Danube is one of the priorities of the TEN-T (Priority Project 18) and plays an important role in the EU Strategy for the Danube Region (EUSDR). The centrope partner regions support the targets of the EUSDR.

The "Large-scale River Engineering Project between Vienna and Bratislava" is an important milestone in improving the navigability of the Danube within centrope. With respect to the river ports, the following measures are to enhance the attractiveness of waterway transport:

- Further capacity extension of Vienna’s trimodal freight terminal
- Extension and modernisation of Bratislava’s freight terminal
- Extension and modernisation of smaller ports (e.g. Krems)
- Ensuring the navigability of the Danube branch between Gönyü and Győr for passenger ships in full respect of ecosystem requirements

The centrope partner regions aim for the improved utilisation of the Danube for passenger transport in connection with the upgrading of port facilities.

The international airports of Vienna and Bratislava safeguard centrope’s worldwide accessibility, while the other airports are of regional importance. The accessibility of the airports by public transport is a major concern. The centrope partners support the following measures:

- Demand-based development of the capacities and quality of the airports of Vienna and Bratislava
- Improved regional accessibility of these airports via the Vienna Airport through-station, a new link between Vienna Airport and the Austrian Ostbahn line (“Götzendorfer Spange”) and a new link between Petržalka and Bratislava Airport
- Tapping of positive synergies between the airports of Vienna and Bratislava so as to avoid over-capacities and additional environmental problems

For the regional airports, the following measures are needed:

- Increased runway length of Győr-Pér airport
- Capacity extension of Brno-Tuřany International Airport
The Strategic Framework for Transport and Infrastructure Development in centropa

**The centropa package to improve cross-border public transport**

Cross-border public transport is affected by various deficits. In order to tackle the obstacles to greater efficiency, the regions launched the “Public Transport Round Table” as a key consultation platform open to all local and regional planning authorities and public and private transport suppliers in the region. Based on this platform, the following activities are to support the improved integration of cross-border public transport services:

- Know-how transfer from the existing integrated public transport associations in Austria (VOR) and South Moravia (KORDIS) to other regions, in particular to Bratislava and the Bratislava Region, where an integrated public transport association is being developed

- Compilation of a study to clarify legal, institutional and financial obstacles to the implementation of cross-border public transport systems and/or services

- Feasibility study for the implementation of EUREGIO bus lines (comparable to EUREGIO train lines)

- Better schedule co-ordination to minimise transfer times at relevant interchange nodes

- Efforts to render ticketing for cross-border connections easier and more customer-friendly

To ensure better integration of cross-border public transport, the centropa partners call for the inclusion of integrated public transport systems into Hungary’s legislation, which does not yet provide for them.

The measures designed to extend the main railway lines (cf. Infrastructure Vision rail network) are to help establish a European high-speed rail network. In order to capitalise on these investments for the improvement of regional accessibility and connectivity, the regions call for the following:

- Designation of Břeclav, Győr, Sopron, St. Pölten, Szombathely, Trnava and Wiener Neustadt as feeder stations

- Assessment of through-connections at main public transport nodes, specifically in Vienna after the opening of the new main station

At the moment, the promotion of public transport is exclusively a task of public transport companies. The centropa partner regions will support joint marketing initiatives of public transport companies.

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**Comprehensive, useful and in my language: a traffic information service for centropa**

*A multimodal and multilingual traffic information service* that would instantly inform users about the fastest connections, the means of transport to choose as well as real-time data on the current traffic situation from origin to destination, is an important tool for traffic management and the optimal utilisation of transport infrastructure capacities. Current projects like EDITS (European Digital Traffic Infrastructure Network for Intelligent Transport Systems) will be important stepping-stones towards providing comprehensive, user-friendly service across centropa.
The Strategic Framework for Transport and Infrastructure Development in centrope

**Joint planning instruments**

Consolidated data and analytical instruments are indispensable for joint planning and decision-making. So far, there are no harmonised data and analytical planning instruments for centrope as a whole. This lack is particularly notable regarding cross-border data on origins and destinations, traffic purposes and modal splits. Mobility surveys on traffic behaviour are available only for certain parts of the region.

Periodical surveys on the development of cross-border traffic, market analyses of cross-border public transport demand and mobility surveys in all partner regions are among the measures to address these shortcomings. A comprehensive “traffic model” to develop traffic forecasts and assess the effects of infrastructure extension measures on the existing and planned networks, covering the entire territory of centrope, is currently being formulated. To bring this potential to fruition, the further development, continuous maintenance and area-wide application of the traffic model must be safeguarded.

**Towards implementation: centrope Mobility Management.**

To achieve the goals set out in the Strategic Framework, centrope needs a mechanism to concretise, prioritise and monitor its implementation. For this purpose, centrope will be given a permanent and politically supported co-ordination structure in the fields of transport, mobility and infrastructure development. It will unite expertise and continuity at an operative management level and regularly involves stakeholders and the responsible public bodies. Its activities will entail the monitoring of traffic development, agenda-setting, the initiation of new implementation partnerships, multilateral knowledge management, political co-ordination and other cross-border mobility centre functions. The new co-ordination structure will include a High-level Administrative Board linked to the political centrope process plus the necessary operative capacities to further the cross-border mobility agenda.
This brochure presents key findings of the centrope Infrastructure Needs Assessment Tool (INAT) pilot action. It is based on the INAT Mapping Report and the Strategic Framework for Transport and Infrastructure Development in centrope. The full documents are available as download from www.centrope.com.

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