



Annex K6T4 – List of development needs of transport infrastructure

The clusters are defined based on their transport function, and not based on their implementation state-of-play. This means that they are defined even if they are already built or modernized, are in preparation, or exist only as a project idea. Therefore, the development needs are divided into three groups according to their characteristics:

- **Basic needs** covering conventional infrastructure of such parameters that all ITI regions can fulfil their basic functions. This means ensuring a connection by conventional railway with competitive travel times and capacity, and a road connection of adequate capacity and routing outside the built-up areas of municipalities.
- **Target needs** providing further significant improvement in the quality of transport connections beyond the basic needs, which will increase the competitiveness of the respective region so that it can fulfil its "growth pole" function. This is, for example, the construction of high-speed railway lines or other roads enabling further expansion of the range of services.
- **Auxiliary needs** are met by clusters that further improve the condition in a partial way by removing bottlenecks impeding speed or capacity, or offer additional services in the already implemented basic needs clusters or ensure the interconnection in an alternative way.

List of needs based on pillars

The list of needs is based on the following pillars:

1. The **Pillar of Obligations** requiring the fulfilment of obligations towards the European TEN-T policy as of 2030, 2040 and 2050.
2. The **Pillar of Regional Needs** ensuring comparable transport infrastructure parameters for all regions, where the main factor should not be the size of the region or ITI territory but the current condition of the transport infrastructure
3. The **Pillar of Other Needs** will be focused on other projects of regional importance.

Pillar of Obligations

Under **the Pillar of Obligations**, the following projects will have to be put into operation within the required time horizons according to the TEN-T regulation:

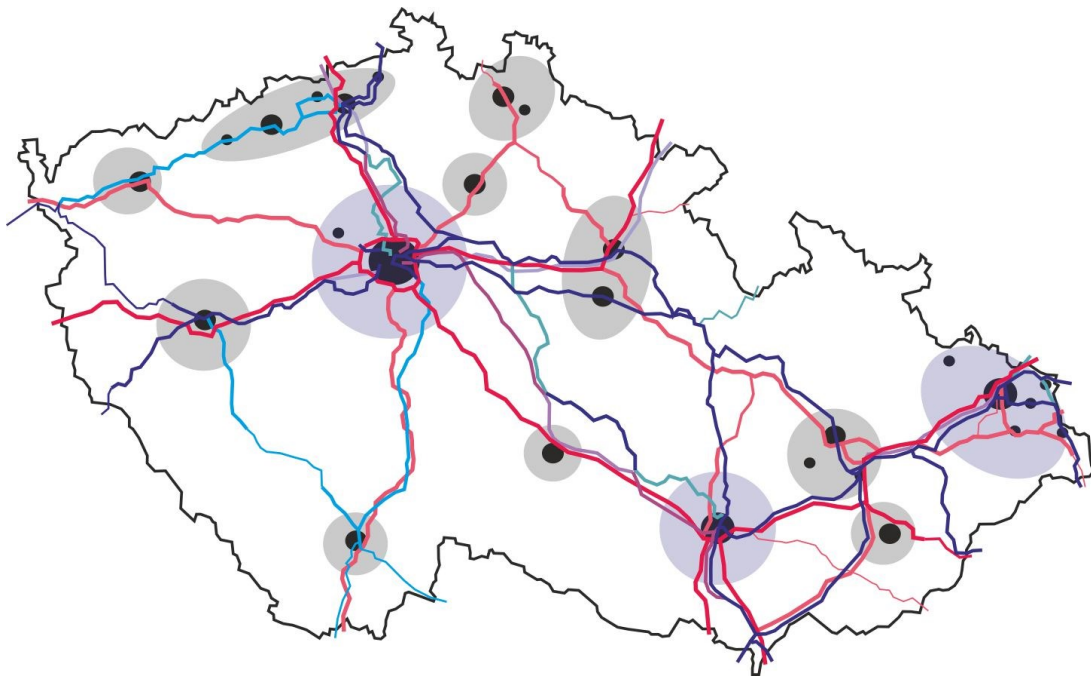
- **by 2030:**
 - HSL Prague – Lovosice
 - HSL Prague – Brno with the exception of the section Světlá n/S – Vlkov (Velká Bíteš)
 - Modernization of the line Světlá nad Sázavou – Vlkov
 - Modernization of the line Kolín – Děčín
 - Modernization of the line Brno - Přerov
 - Optimization of existing line Prague-Smíchov – Beroun
 - Modernization of the line Plzeň – Česká Kubice



- Modernization of the line Hranice n.M. – Horní Lideč st. border
- Double-tracking of the line Velký Osek - Choceň
- Completion of the D0 motorway
- Completion of the D11 motorway Jaroměř – Královec st. border
- Completion of the D1 motorway
- Completion of the D52 motorway Pohořelice – Mikulov st. border
- Completion of road route No 49 Hulín – Horní Lideč st. border
- Improvement of navigation conditions in the cross-border section of the Elbe
- Canalising the Elbe up to Pardubice
- **by 2040:**
 - HSL Světlá nad Sázavou – Velká Bíteš
 - HSL Ústí nad Labem – Dresden
 - HSL Přerov – Ostrava – State border with Poland
 - Ensuring the operation of trains 740 m long
 - Prague – Lovosice
 - Prague – Kolín – Choceň
 - Ústí n/O – Lichkov st. border
 - Kolín – Havlíčkův Brod – Brno
- **by 2050:**
 - HSL Lovosice – Ústí n/L
 - HSL Prague – Wrocław
 - Newly built line Nemanice – Ševětín
 - Optimization of lines:
 - České Velenice – České Budějovice – Plzeň
 - Ústí nad Labem – Cheb st. border
 - Motorway D35 Jičín Úlibice – Hradec Králové – Mohelnice
 - Road I/35 Jičín Úlibice – Turnov
 - Motorway D6 Krušovice – Karlovy Vary
 - Road I/73 Brno – Moravská Třebová (D35)
 - Motorway D55 Olomouc – Přerov, Otrokovice – Břeclav
 - Motorway D3 Central Bohemia part, cross-border part
 - Road I/33 Jaroměř – Náchod st. border
 - Road I/50 Holubice – Starý Hrozenkov st. border
 - New line Prague – Beroun



Figure 1 Trans-European Network for Transport



Pillar of Regional Needs

The Pillar of Regional Needs requires the implementation of the following priorities as stages of the implementation of transport infrastructure:

1. **Basic needs** (completion of conventional infrastructure that ensures that all ITI regions can fulfil their basic functions)
2. **Target needs** (completion of modernised infrastructure that ensures that all ITI regions can fulfil their growth pole functions)

The Pillar of Regional Needs has the following 8 priorities:

1. Connecting CZ to agglomerations and metropolises of neighbouring states
2. Interconnecting the metropolises within CZ
3. Providing transport infrastructure for freight transport (railway, water)
4. Linking agglomerations to the catchment metropolises
5. Providing for suburban relations of the metropolises
6. Interconnecting neighbouring agglomerations
7. Other international relations, including the connection of remote regions
8. Providing for suburban relations of the main centres of agglomerations

Priorities 1 and 2 are covered by the Pillar of Obligations and so they are not detailed in subsequent sections.

Priority 3 - Providing transport infrastructure for freight transport (railway, water)



A decisive part of the rail freight transport and water transport projects are determined by the Pillar of Obligations within the TEN-T. Beyond TEN-T, it is necessary to add the following projects that are important for providing service to large industrial units:

- Velký Osek – Choceň (not yet part of the approved TEN-T regulation, although it is part of the proposed compromise after the EC Council meeting)
- Capacity increase and electrification of the line Nymburk – Mladá Boleslav and Čachovice – Lysá n/L (new construction) incl. new station in Mladá Boleslav and the Bezděčín interconnection (not yet part of the approved TEN-T regulation, although it is part of the proposed compromise after the EC Council meeting)
- Electrification and capacity increase of the line Týniště nad Orlicí – Solnice

Priority 4 - Linking agglomerations to the catchment metropolises

Basic needs

- České Budějovice Agglomeration
 - Completion of TRC 4 in the section Prague - České Budějovice before it meets the TEN-T target
 - Variant 1: completion of the Central Bohemia section of the D3 motorway / Variant 2: completion of the D4 motorway (4 lanes in the Prague – Písek section) and modernization of road I/20 České Budějovice – Písek into an alternating three-lane without level crossings (this is also necessary for the relation České Budějovice – Plzeň). The variant must be selected with regard to the project implementation period.
- Plzeň Agglomeration
 - The basic needs are met with the exception of the modernization of the line section Prague - Beroun
- Karlovy Vary Agglomeration
 - Completion of the D6 motorway Krušovice – Karlovy Vary before it meets the TEN-T target
 - New HSL / RL Prague – Most and modernization of the line Most – Karlovy Vary
- Ústí nad Labem - Chomutov agglomeration, Most - Chomutov part
 - Completion of the D7 motorway Slaný - Postoloprty
 - New HSL / RL Prague – Most
- Ústí nad Labem-Chomutov agglomeration, Ústí nad Labem part
 - Basic needs are met
- Liberec and Mladá Boleslav agglomerations
 - New electrified, partially double-track railway line Lysá n/L – Mladá Boleslav město – Liberec
- Hradec Králové - Pardubice agglomeration, Hradec Králové part
 - Modernization of the line Velký Osek – Hradec Králové (not yet part of TEN-T)
- Hradec Králové - Pardubice agglomeration, Pardubice part
 - Basic needs are met
- Jihlava Agglomeration:



- Partial modernization and electrification of the line Jihlava – Třebíč – Brno
- Modernization of the line Havlíčkův Brod – Jihlava
- Olomouc Agglomeration
 - Modernization of the line Nezamyslice - Olomouc
- Zlín Agglomeration
 - Modernization of the line Kojetín – Hulín

Target needs

- České Budějovice Agglomeration
 - Increased capacity and speed on TRC 4 in the section Prague - Benešov.
 - Depending on the completion of the Beroun (Tachlovice) tunnel (section Prague Smíchov-Beroun, new line), modernization of the line Zdice – Písek – Protivín
 - Completion of the D3 motorway, alternatively D4+I/20 three-lane (according to the basic needs variant, it is part of the TEN-T network).
- Plzeň Agglomeration
 - No other needs (the Beroun (Tachlovice) tunnel is part of the TEN-T)
- Karlovy Vary Agglomeration
 - No other needs
- Ústí nad Labem - Chomutov agglomeration, Most - Chomutov part
 - No other needs
- Ústí nad Labem-Chomutov agglomeration, Ústí nad Labem part
 - No other needs (the HSL is part of the TEN-T)
- Liberec and Mladá Boleslav agglomerations
 - Full double-tracking and possible partial increases in speed on the Prague – Liberec line (if this is implemented under the basic needs, the starting points for calculating the economic efficiency for the end stage will be changed)
- Hradec Králové - Pardubice agglomeration, Hradec Králové part
 - No other needs (the HSL is part of the TEN-T)
- Hradec Králové - Pardubice agglomeration, Pardubice part
 - No other needs (the HSL is part of the TEN-T)
- Jihlava Agglomeration:
 - No other needs (the HSL is part of the TEN-T)
- Olomouc Agglomeration
 - No other needs
- Zlín Agglomeration
 - No other needs

Priority 5 - Providing for suburban relations of metropolises

This concerns the provision of state-owned transport infrastructure, which is important for sustainable urban mobility, especially regular commuting from the suburbs to the core city. The solution is not to strengthen the capacity of the motorway infrastructure on arrival in the city (unless it is necessary for



long-distance transit), because the limit is the capacity of the city's street space and the capacity of P&R parking lots at public transport terminals. Especially in the case of the capital, the outputs of SUMP "Fine-tune Prague"¹ make it obvious that sufficient capacity for motorised private transport cannot be ensured. The solution is to build P&R at railway stations far in the suburban area, but in this case the problem is the already exhausted capacity of suburban railway transport. So the main priority is to increase the capacity of railway routes leading to metropolises. In the case of the capital city, it is obvious that the capacity increase of the railway junction by building the so-called New Connection 2 should be implemented in the variant for suburban transport, and not for long-distance transport, since a tighter linkage of suburban transport for regular commuting to the city is crucial for sustainable urban mobility. A similar case is the so-called Brno north-south diameter.

In the case of road infrastructure, it is meaningful to build a third lane on class I - III roads. Based on local conditions, this new lane should be built in the direction to the city, as a dedicated bus lane for suburban bus lines. Capacity increase of the motorway network in the immediate vicinity of metropolises should pursue the transfer of transit traffic. Therefore, the completion of the D0 motorway in a six-lane configuration in the target state is a high priority for TEN-T.

- The capital city of Prague (beyond the TEN-T priorities)
 - Double-track electrified railway line Prague Ruzyně – Kladno Ostrovec
 - Increasing the capacity of the Prague – Benešov line (target need)
 - New Connection 2 for suburban and urban transport (target need)
 - Further capacity increase and electrification of lines, including equipment with P&R terminals (achieving a 15-minute tact):
 - Prague Vysočany – Všetaty
 - Prague Smíchov – Rudná u Prahy – Beroun
 - Prague – Vrané n / V – Davle, (options must be checked)
 - Class I road I/12 Prague (D0) – Úvaly, four lanes
 - Class I road I/2 Prague (D0) – Kostelec nad Černými lesy
 - Class I road I/9 Zdiby – Neratovice, alternating three-lane
 - Class I road I/16 Nová Ves (D8) – Slaný
- City of Brno (beyond TEN-T priorities)
 - Electrification and capacity increase of the section Střelice - Třebíč - (Jihlava) and Střelice - Ivančice/Moravský Krumlov - (Znojmo)
 - Electrification of the line Brno – Kyjov – Moravský Písek
 - Brno north-south diameter
- City of Ostrava (beyond TEN-T priorities)
 - Electrification and capacity increase of the line Ostrava Kunčice – Frenštát p.R. – (Valašské Meziříčí)
 - Ostrava Svinov – Opava – Krnov (completion of electrification)
 - Studénka – L. Janáček Airport / Kopřivnice - Štramberk
 - Frýdlant n/O – Ostravice
 - Class I road I/58 Příbor – Ostrava (will be part of TEN-T)

¹ [Polad' Prahu!](http://PoladPrahu.cz) | Čistou stopou Prahou (cistoustopou.cz) ("Zero-emission Prague")



- Class I road I/59 Ostrava – Karviná

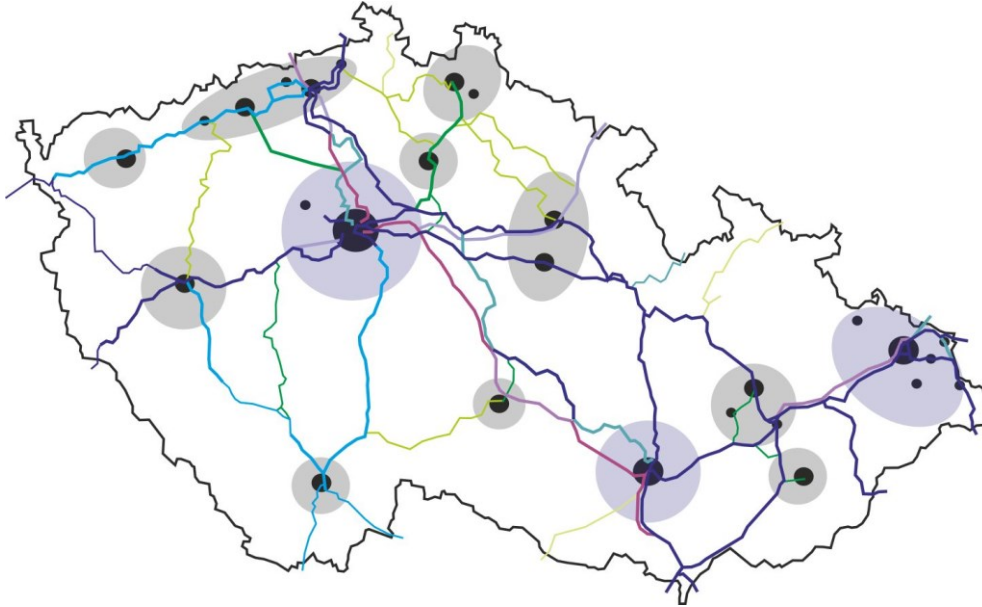
Priority 6 - Interconnecting neighbouring agglomerations

- Pardubice – Jihlava
 - Class I road I/37 Pardubice – Ždírec n/D, I/34 Ždírec n/D – Havlíčkův Brod – Humpolec, I/38 Havlíčkův Brod - Jihlava – construction of bypasses
- Jihlava – České Budějovice
 - Class I road I/34 Humpolec – Pelhřimov, I/19 Pelhřimov – Tábor,
 - Optimization of the line Jihlava – Veselí nad Lužnicí
- České Budějovice – Plzeň
 - Class I road I/20 České Budějovice – Plzeň
 - Railway line České Budějovice - Plzeň according to the TEN-T requirement
- Plzeň – Karlovy Vary
 - Class I road I/20 Plzeň – Karlovy Vary, construction of local bypasses
 - Railway connection only along the existing line via Cheb, more direct connections of regional capitals in the time horizon after 2050.
- Plzeň – Most / Chomutov
 - Optimization and electrification of the line Plzeň – Žatec – Chomutov
 - Class I road I/27 Plzeň – Most
- Karlovy Vary – Most
 - Class I road I/13 Ostrov – Chomutov, partial capacity increase with regard to the sensitive area of the Ohře river water gap
- Most – Ústí n/L
 - Class I road I/13, relocated where it passes through Bílina
- Ústí n/L – Liberec
 - Liberec – Děčín line, partial increase in speed and capacity, electrification
 - Class I road I/13 Děčín – Bílý Kostel n/N
 - Class I road I/13 Děčín – D8
- Ústí n/L – Mladá Boleslav
 - CR Mladá Boleslav – Česká Lípa – Děčín, partial increase in speed and capacity, electrification
 - Class I road I/16 Nová Ves – Mělník – Bezděčín, partial capacity increase
- Liberec – Hradec Králové
 - CR Čachovice – Nymburk, capacity increase, electrification
 - Optimization of the line Turnov – Stará Paka – Jaroměř (DNSH for D35)
 - Optimization of the line Turnov – Jičín – Hradec Králové (DNSH for D35)
 - Class I road I/35 Turnov – Úlibice, alternating three-lane (part of TEN-T)
 - Motorway D35 Úlibice – Hradec Králové (part of TEN-T)
- Mladá Boleslav – Hradec Králové
 - CR Čachovice – Nymburk, capacity increase, electrification
 - Class I road I/38 Poděbrady (D11) – Bezděčín, capacity increase, bypasses



- Olomouc - Zlín
 - Motorway D55 Olomouc – Přerov

Figure 2 The railway network with inter-regional links



Priority 7 - Other international relations, including the connection of remote regions

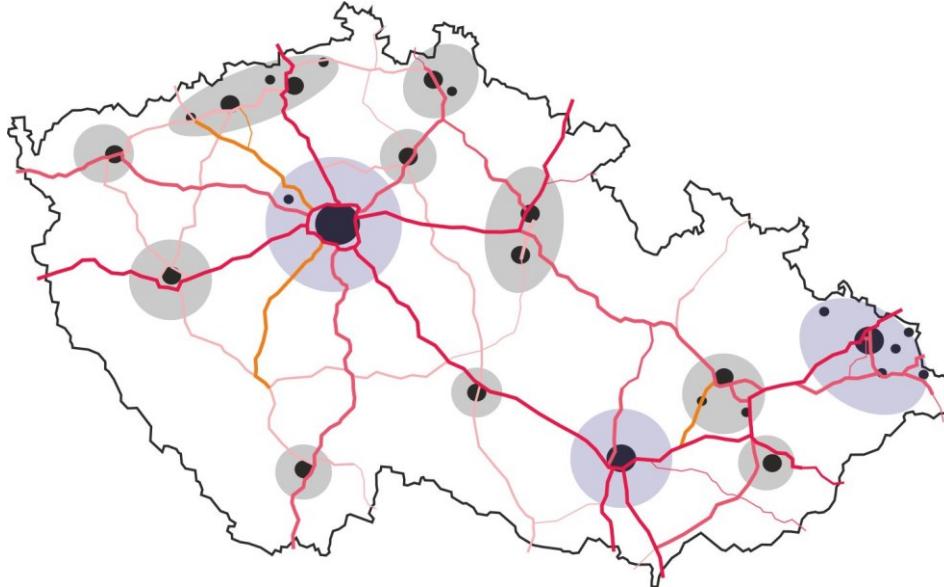
This category includes other road network projects that are important to provide for other directions of international transport, and also to connect peripheral regions or other centres that are not part of ITI agglomerations.

- Class I road I/34, I/19, I/29 Humpolec – Tábor – Písek (– Plzeň), this is an important route for transit traffic from Slovakia and Hungary in the direction of Bavaria, which avoids the Prague metropolitan area
- Class I road I/38 Poděbrady (D11) – Jihlava (D1) – Znojmo – Hatě (st. border), it connects another important border crossing and connects the Mladá Boleslav industrial area with the D1 motorway outside the Prague metropolitan area, and connects the Znojmo area to the Bohemian part of CZ
- Class I road I/53 Pohořelice – Znojmo, bypasses, connecting the Znojmo area to Moravia
- New railway line (Brno) – Unkovice - Znojmo – (Šatov st. border), connecting the Znojmo area to Moravia and to Bohemia
- Class I road I/38 Mladá Boleslav – Nový Bor – Rumburk st. border, modernization and bypasses, it is a connection to another border crossing, and connection of the Šluknov Spur
- CR Česká Lípa – Rumburk, connection to the Šluknov Spur
- Class I road I/7 Chomutov – Hora sv. Šebestiána st. border, connection to an important border crossing
- Class I road I/34, I/24 České Budějovice – Třeboň – Halámky st. border, capacity increase with bypasses to connect an important border crossing



- Class I road I/44 Mohelnice – Šumperk – Jeseník – Mikulovice st. border, bypasses, in the section Mohelnice – Šumperk capacity increase, connection to the Jeseník area
- CR Zábřeh na Moravě – Glucholazy st. border / Šumperk, connection to the Jeseník area

Figure 3 The road network with inter-regional links



Priority 8 - Providing for suburban relations of the main centres of agglomerations

Projects beyond the TEN-T.

- České Budějovice
 - CR České Budějovice – Český Krumlov
- Plzeň
 - Increasing the capacity of the Plzeň - Klatovy line
 - Increasing the capacity and electrifying the Plzeň - Plasy line
 - CR Rokycany – Příkosice
 - CR Ejovice – Radnice
 - Class I roads I/20, I/27 through-roads in Plzeň
- Karlovy Vary
 - CR Karlovy Vary Březová – Karlovy Vary main station – Nová Role – Nejdek, assessing the possibilities of further use for urban and suburban transport
- Most / Chomutov
 - Electrification of the line Pruněřov – Kadaň line
 - Electrification of the line Louka u Litvínova – Litvínov
 - Assessing the possibilities of using the line (Most –) Louka u Litvínova – Hrob
 - CR Chomutov – Žatec
 - CR Most – Postoloprty – Žatec / Louny
 - Modernization of class I road I/27 Most – Litvínov, four-lane
- Ústí n/L
 - No other projects are registered



- Liberec
 - Speed increase and electrification of the line Liberec – Česká Lípa
 - CR Liberec – Hrádek n/N
 - CR Liberec - Frýdlant – Nové Město p.S.
 - CR Raspenava – Bílý Potok p.S.
 - CR Liberec – Rychnov u J.n.N (existing line)
 - CR Frýdlant – Zawidów
 - Class I road I/13 Krásná Studánka – Albrechtice u Frýdlantu – (Frýdlant), new two-lane route with bypasses
 - Class I road I/14 Liberec – Desná, incl. through-road in Jablonec n/N
 - Class I road I/65 Rádelský mlýn – Jablonec n/N
- Mladá Boleslav
 - Increasing the speed and capacity of the line Mladá Boleslav město – Sobotka – (Libuň – Jičín)
 - CR Mladá Boleslav – Mnichovo Hradiště – Turnov
 - Class I road I/16 relocation from D10 exit 46 to Martinovice
- Hradec Králové
 - Increasing the capacity of the line Hradec Králové – Jaroměř – Dvůr Králové město incl. electrification of non-electrified sections.
 - Optimization and electrification of the line Jaroměř – Česká Skalice – (Trutnov) incl. connection to Náchod
 - Assessing an increase in capacity and speed incl. electrification of the line Hradec Králové – Jičín so that, in addition to suburban and regional transport, semi-fast trains can also be introduced in section Hradec Králové – Jičín (part of DNSH measures for the D35 motorway)
 - Class I road I/11 Hradec Králové – Vamberk
- Pardubice
 - Electrification and capacity assessment of the line Moravany – Holice
 - CR Pardubice – Chrudim – Skuteč
 - Class I road I/36 connection of Pardubice to D35 motorway
- Jihlava
 - Optimization of the line Kostelec u Jihlavy – Slavonice
 - CR Pelhřimov – Horní Cerekev – Jihlava – Havlíčkův Brod
 - CR Jihlava – Třebíč
- Olomouc
 - CR Olomouc – Prostějov
 - CR Olomouc – Uničov
 - CR Olomouc – Hlubočky
 - Class I road I/46 Olomouc – Šternberk, bypasses (including the Eastern Tangent)
- Zlín
 - Electrification and capacity increase of the line Otrokovice - Vizovice



Figure4 Railway network with interregional and suburban ties (CZ priority network)

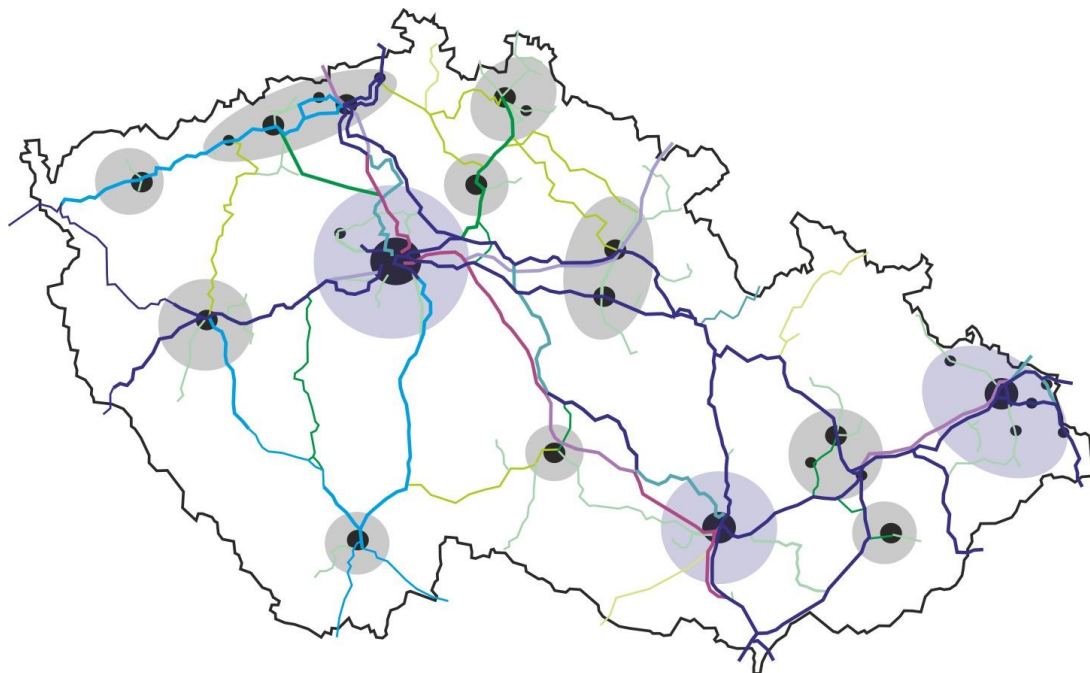


Figure 5 Road network with interregional and suburban ties (CZ priority network)

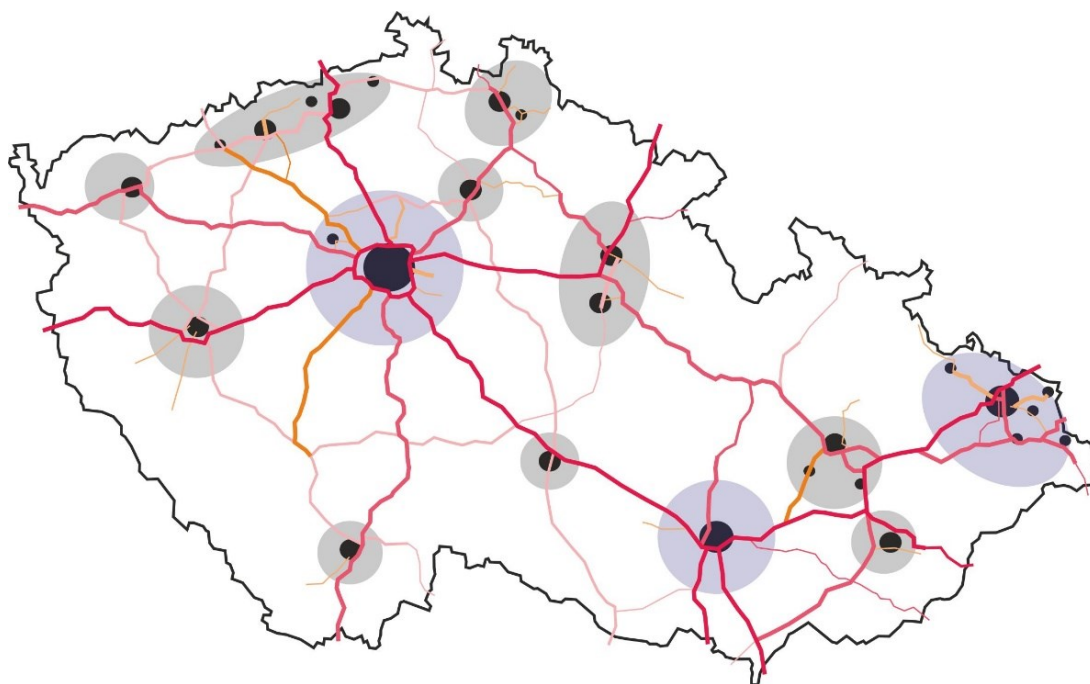
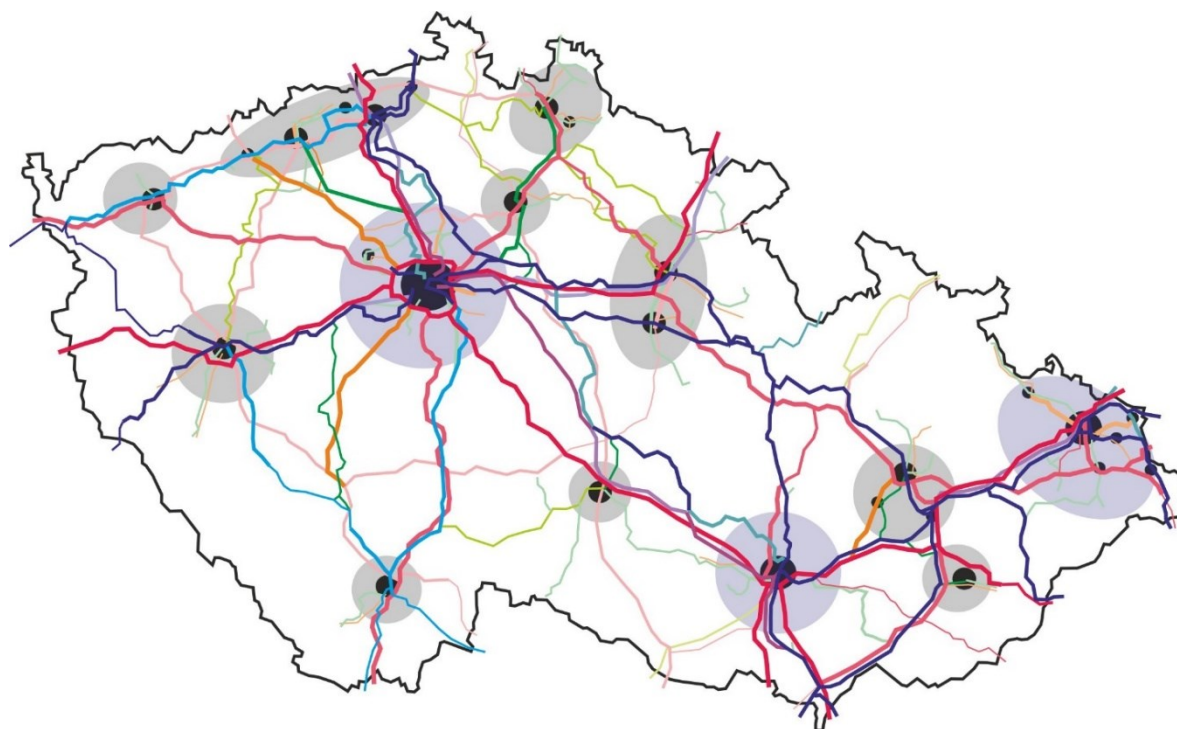




Figure 6 Priority network of the Czech Republic



Pillar of other needs

These are determined on the basis of the preparation of projects by transport infrastructure managers, including suggestions for a longer time horizon, for which only limited information is currently available. Projects are grouped into packages.