CORCAP – Deliverable D.T2.3.8

APPLICATION OF A SYSTEM APPROACH FOR SMALL-SCALE LOW-COST IMPROVEMENTS FOR RAIL FREIGHT ON THE BRNO-BUDAPEST SECTION AND RELATED RAIL NETWORKS

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ABOUT DELIVERABLE D.T2.3.8

CORCAP Thematic work package T2 - Multimodal freight transport pilot actions complementing OEM corridor development

O.T2.2.1 - Pilot actions for new and innovative intermodal services

D.T2.3.8: Application of the general system approach for small-scale low-cost improvements for rail freight transport on the Brno-Budapest section of the OEM corridor and related railway networks

→ The deliverable is one of four deliverables under the GYSEV Pilot Action (D.T2.3.7 – D.T2.3.10)

OVERVIEW MAP

Overview map of the Brno-Budapest section of the Orient/East-Med corridor

Corridors connecting to CNC + RFC Orient/East-Med in the Brno-Budapest section

- ✓ CNC + RFC Rhine-Danube
- ✓ RFC Amber
- ✓ CNC + RFC Baltic-Adriatic
- ✓ CNC + RFC Mediterranean
- ✓ (RFC Alpine – Western Balkan)
- ✓ OSJD-corridors

RFCs OEM, AMBER, RHD, BA, MED and OSJD-corridors have overlapping sections in the region!

Connectivity to other corridros

THE GYSEV PILOT ACTION

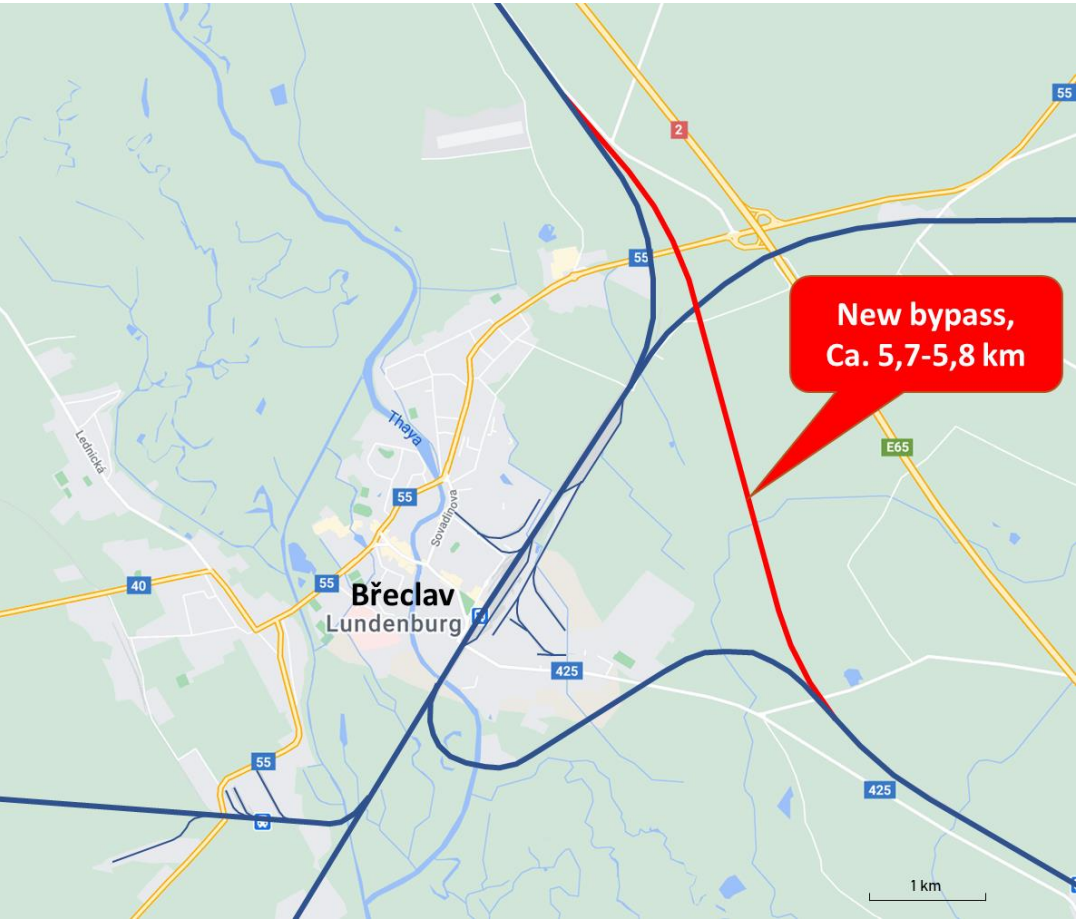
System approach for low-cost improvements for rail freight transport – identified measures (D.T2.3.7)

- Signalling measures
- Extension of sidings
- Terminal measures
  - Extension of arrival/departure/handling tracks
  - Electrifying end sections of handling tracks
  - Adapting track layout for „momentum entry”
  - Track connection to line tracks in both ends of a terminal
- Developing Last-mile infrastructure
- Electrification
- Triangle tracks
- Freight by-passes
- Directional running
  - By route
  - By time-windows

APPLICATION CASES

CASE 1: BRECLAV NODE

Bypass north of Breclav station



- Avoid crossing of traffic relations in Breclav station at same level for passing trains
- Remove part of freight traffic from the center of Breclav
- Shorten the route for freight trains in E-W direction
- Bypass could also be used by long-distance passenger trains (optional)

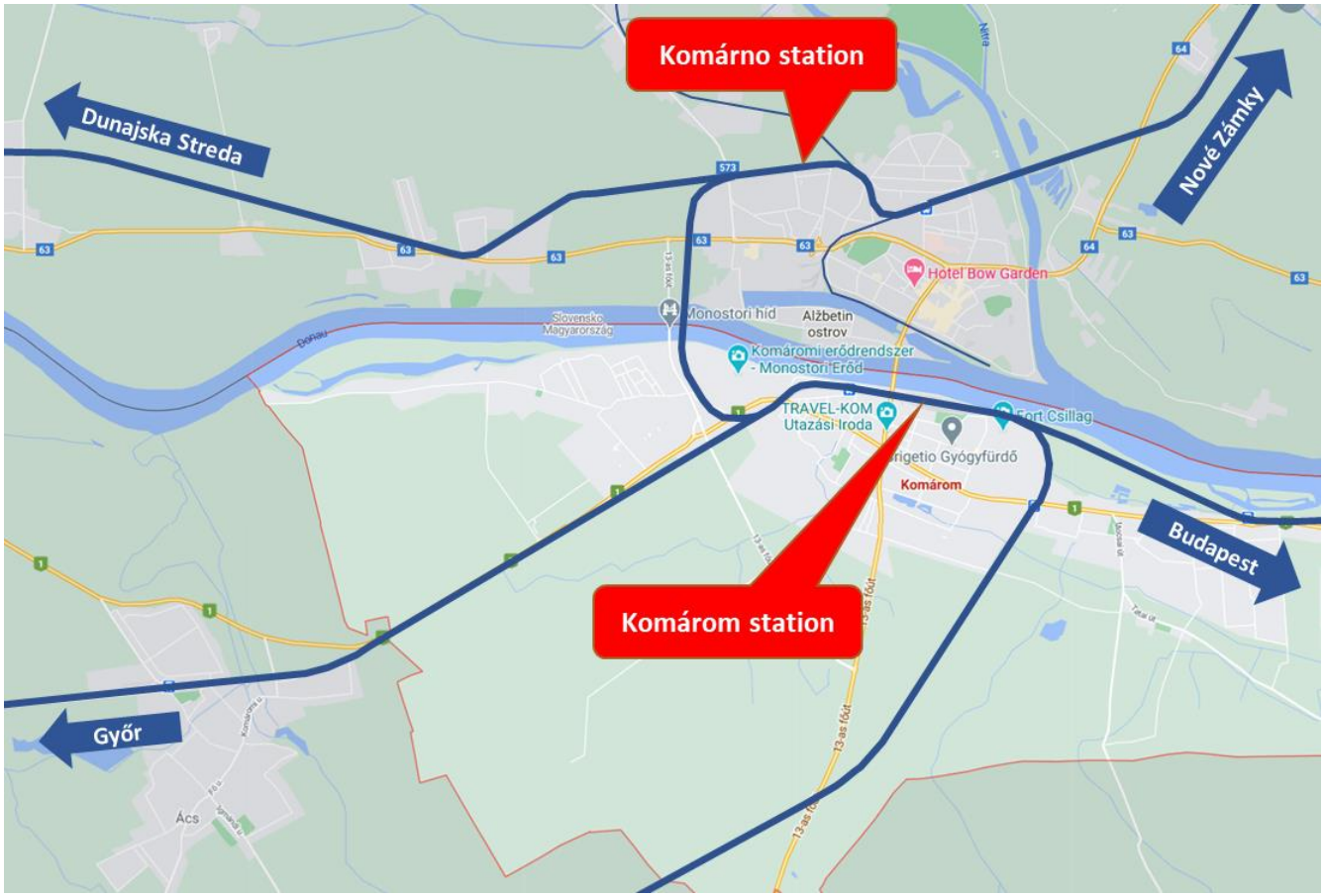
CASE 2: EBENFURTH NODE

Solution: Triangle track with connecting curves in both directions

- Avoiding change of travelling direction for traffic Sopron – Wien (freight and passenger!)
- Increasing capacity due to fly-over in direction to Vienna
- Extending double-track into Neufeld/Leitha station

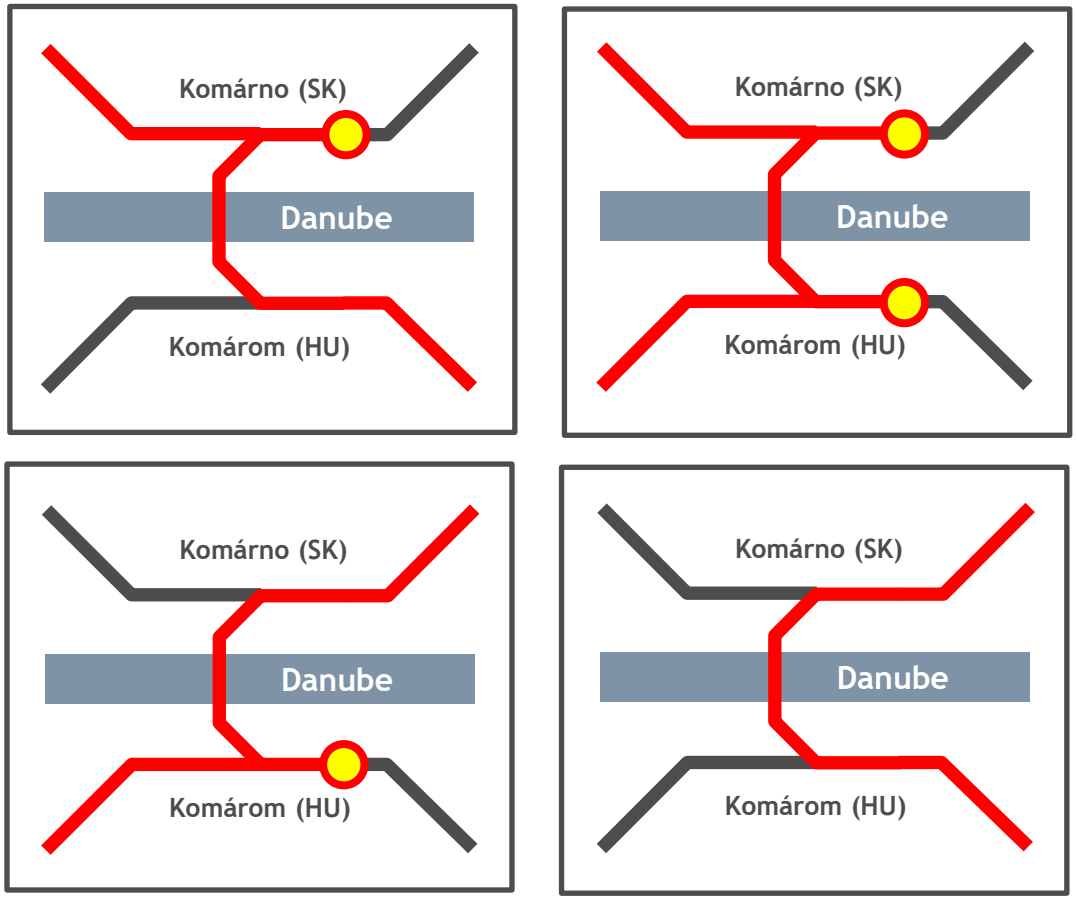
CASE 3: KOMÁRNO-KOMÁROM NODE

Current situation



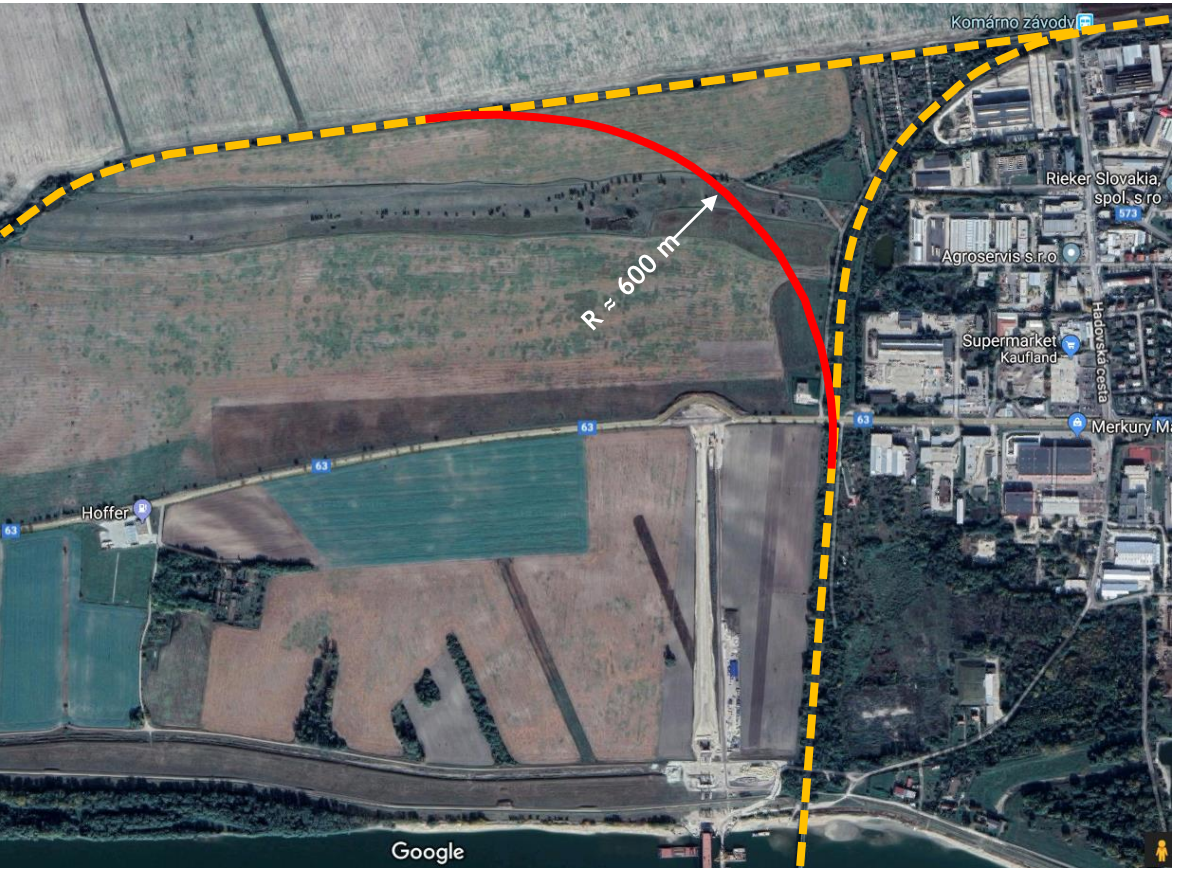
CASE 3: KOMÁRNO-KOMÁROM NODE

Challenge: Changes of travelling direction in key traffic relations



CASE 3: KOMÁRNO-KOMÁROM NODE

Solution: Triangle track Komárno



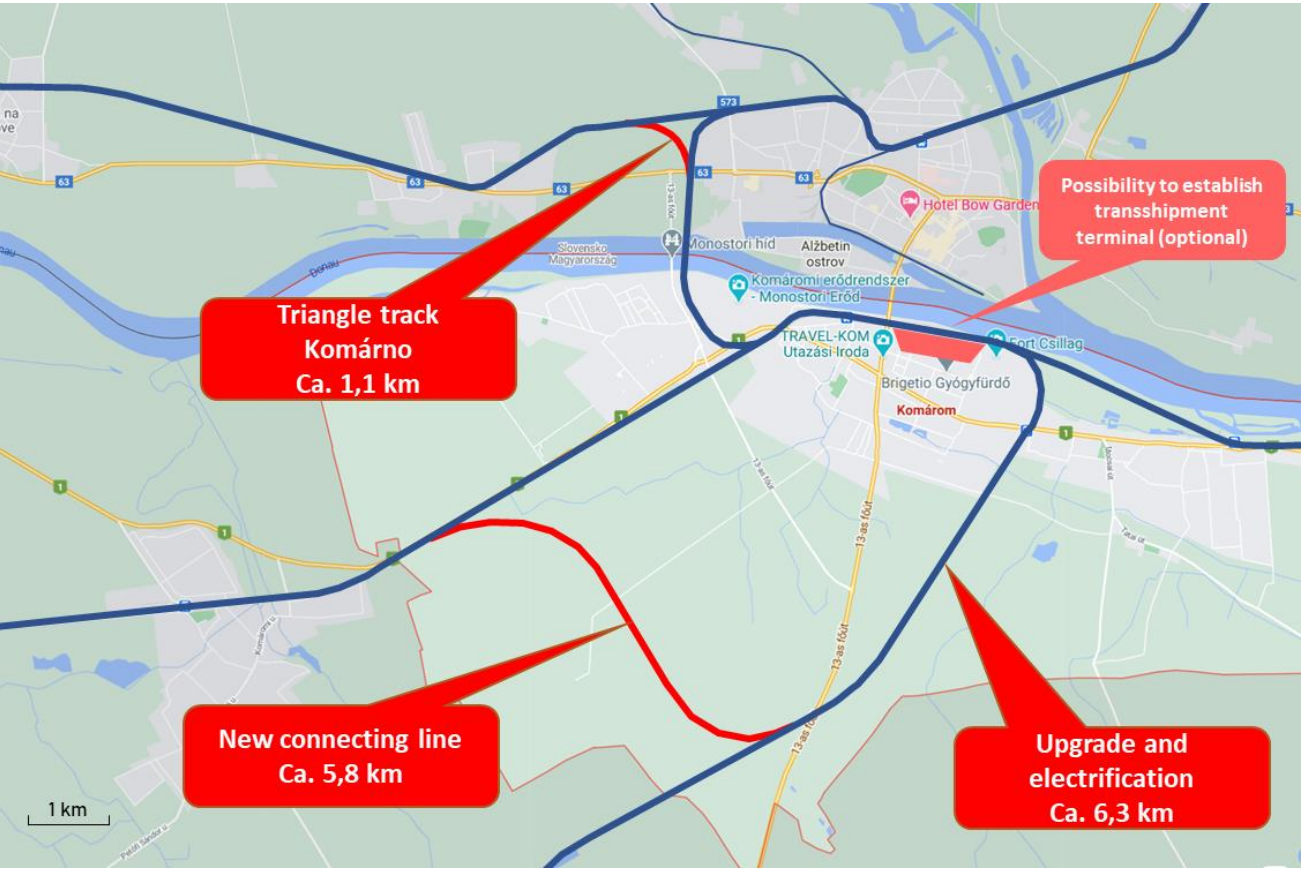
Triangle track could be built west of Komárno station over open field

Avoiding or reducing need for upgrading of Komárno station for longer trains

Length ca. 1,1 km

CASE 3: KOMÁRNO-KOMÁROM NODE

Solution: Remodelling of the node



Triangle track Komárno in combination with connecting line south of Komárom would avoid changes of travelling direction in all traffic relations!

<u>Optional:</u>

At Komárom freight station capacity need would be reduced → Possibility to establish intermodal transshipment terminal with full-trainlength tracks connected to main line in both ends.

CASE 4: ZALASZENTIVÁN NODE

Example of project with high maturity

- Avoiding change of travelling direction for traffic Szombathely – Hodos (Slovenia)
- Land acquisition ongoing
- Natura2000 assessments, EIA done, environmental permit, water framework certificate obtained
- Building permit + several other public utility permits
- Public hearings completed without any problems

Potential measures for modernisation and upgrade of the Sopron Intermodal Terminal

- Extension of handling tracks to >= 740 m
- Electrification of head-sections of handling tracks
- Connection of handling tracks to main line in both ends to allow
  - liner train operations (trains making short intermediate stops for loading and unloading)
  - direct „momentum entry” (Schwungeinfahrt)
- Digitalisation and automation (i.a. video-gates) to speed up and increase quality of processes

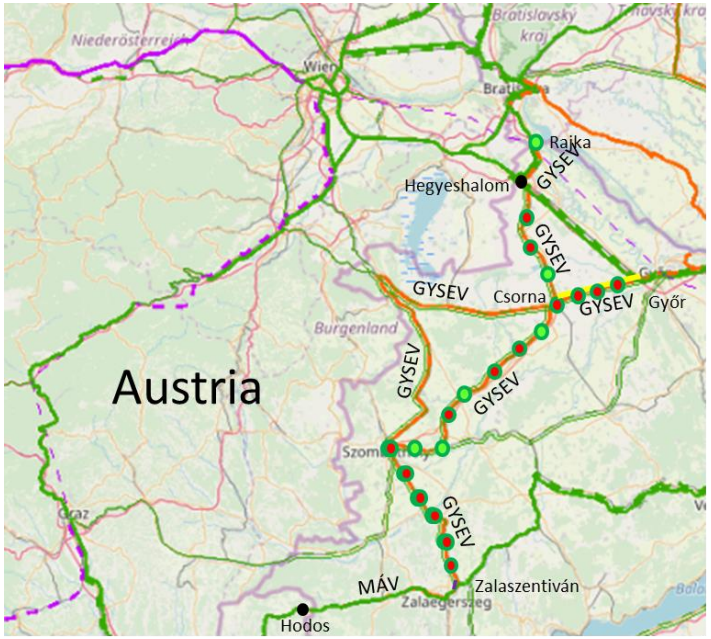
CASE 6: GYSEV FREIGHT AXES

Upgrading of GYSEV East-West and North-South-axes

- Extension of sidings and adaptation of signalling for unrestricted operation of 740 m train length (currently 600-650 m)
- Track upgrading to 22,5 t axle-load (today partly 20,0 t)

<u>Temporary measures:</u>

- Timetabling and traffic management measures to allow longer freight trains during certain time windows



Capability of sidings to handle 740 m train length:

suitable: not suitable:

Outline of bi-directional running options in single-track territories of the region (Western Hungary)

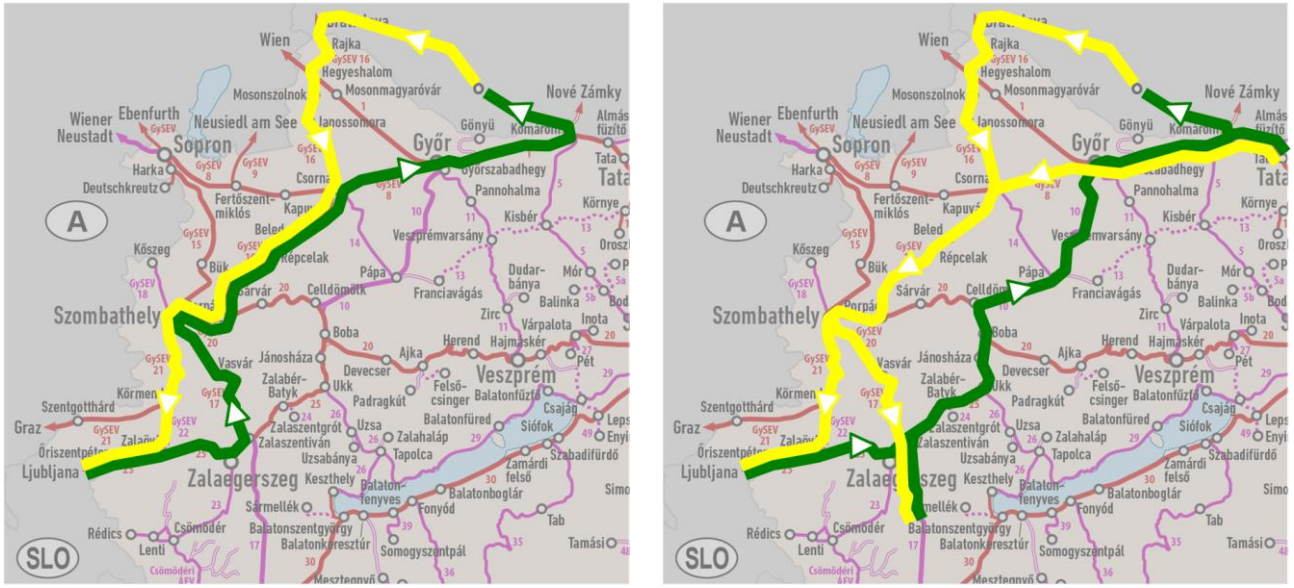


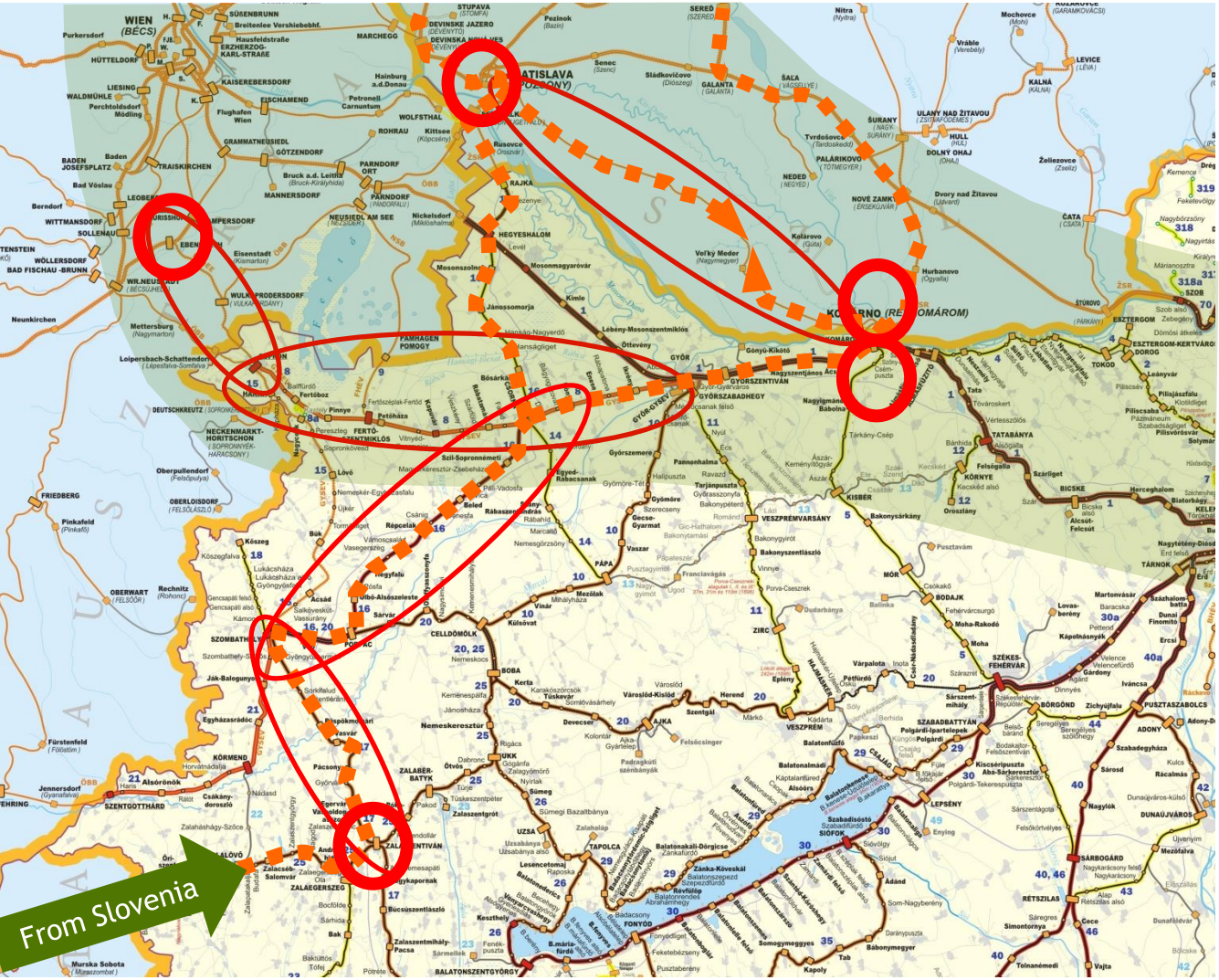
Illustration of possible gradual development of capabilities for bi-directional running in Western Hungary (requires certain infrastructure measures)

- Bi-directional running achieves a „double-track effect" by combining the operations on parallel single-track lines
- Only possible for freight traffic, since passenger trains have to serve intermediate stations in both directions
- Facilitates the introduction of bigger train lengths (the number of meeting stations for adequate train length can be reduced).

Larger-scale measures planned or under consideration

- Double-tracking Line 8 Győr – Sopron
- Remodelling of Sopron Node
- Remodelling of Brno Node
- Freight bypass Bratislava
- Third track on Budapest Southern Railway Bridge
- Freight bypass Budapest (V0-line)

COMBINED EFFECTS OF SELECTED MEASURES



Construction of triangle tracks at selected railway nodes in Western Hungary / Burgenland / Slovakia:

- Avoiding up to three changes of travelling directions for trains reaching the OEM-corridor from Slovenia
- With electrification of Bratislava – Komárno line: Eliminating change electric traction←→diesel traction for traffic to Dunajska Streda
- Improving interconnection between OEM- and BA-corridor through triangle track in Ebenfurth


GYSEV
Raaberbahn