Capacity study
Brenner Corridor 203X
(Commissioning of Brenner Base Tunnel)

FINAL REPORT | STATUS APRIL 2026

BRENNER CORRIDOR PLATFORM

Bundesministerium für Verkehr
Bundesministerium Innovation, Mobilität und Infrastruktur
MIT MINISTERO DELLE INFRASTRUTTURE E DEI TRASPORTI
DB InfraGO
ÖBB INFRA
RFI RETE FERROVIARIA ITALIANA
GRUPPO FERROVIE DELLO STATO ITALIANE
BBT
Co-funded by the European Union

Capacity study 203X

BASIC DATA 1/2

Commissioning BBT

Assumption concerning vehicle technology

Long-distance passenger transport (Munich-Verona-Munich):

- RJ2-simple-set 622 t / 258m / 9 Wg BR 1216 or 1293 (max.sp. 230 km/h)
- ETR 1000 499 t / 202m (max.sp. 300 km/h)
- ETR 675 400 t / 188m (max.sp. 250 km/h)

Short-distance passenger transport (ÖBB-area)

- 4024 simple-set 116 t / 67m (max.sp. 140 km/h)
- 4746 simple-set 163 t / 75m (max.sp. 160 km/h)
- 4748 simple-set 202 t / 101m (max.sp. 160 km/h)
- ETR 160 Alstom Coradia (ÖBB/SAD) 250 t / 128 m (max. sp. 160 km/h)

Short-distance passenger transport (RFI-area)

- ETR 170 203 t / 107m (max.sp. 160 km/h)
- ETR 526 240 t / 97m (max.sp. 160 km/h)

Short-distance passenger transport (DB-area)

- ET 427 Flirt 3 – simple-set 204 t / 107m (max.sp. 160 km/h)
- ET 427 Flirt 3 – double-set 408 t / 214m (max.sp. 160 km/h)
- ET 427 Flirt 3 – triple-set 612 t / 321m (max.sp. 160 km/h)

Freight transport (cross-section Brenner) *(status december 2023)

- variant short (BBT) [1] **2000*t** / 550 m BR 2159 or 193 (max.sp. 100 km/h)
- variant medium (BBT) [2] **2000*t** / 650 m BR 2159 or 193 (max.sp. 100 km/h)
- variant long (BBT) [3] **2000*t** / 740 m BR 2159 or 193 (max.sp. 100 km/h)
- variant Hall/Tirol – Innsbruck - BBT 1960 t / 600 m / 2x BR 2159 od.
  + variant deviation Brennerpass 1450 t / 600 m / 2x BR 193 (max.sp. 100 km/h)
- variant RORO Brennersee 1450 t / 420 m / 2x BR 193 (max.sp. 100/80 km/h)
- variant RORO Trento 2000 t / 650 m BR 193 (max.sp. 100 km/h)

***) 1600 t → max. sp. 120 km/h**

traction of the variants with BR 2019 (Stadler EURO 9000) - then 2600 t possible!

Assumptions on the distribution of the freight transport system paths on the Brenner-axis through the BBT in the BCP-capacity-study 2030:

- *[1] Relative share of system paths: app. 50%*
- *[2] Relative share of system paths: app. 30%*
- *[3] Relative share of system paths: app. 20%*

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BASIC DATA 2/2

Commissioning BBT

infrastructural condition RFI

- signaling standard new line and existing line up to Verona ETCS L2/BL3
- station PM Fortezza
- Schalderer+ Grödner Tunnel (Lot 1)
- Track loop Riggertal
- Station Bolzano/Bozen NEW (infrastructure is 203X not available) X
- Virgolo tunnel (3 tracks access to Bolzano)
- station Bressanone/Brixen NEW
- Bressanone Ospedale/Brixen Krankenhaus stop
- North access Pescantina – Verona (infrastructure is 203X not available) X
- Passing-stations existing line for 740 m train length (Mezzocorona, Trento-Roncafort, Ala)

infrastructural condition ÖBB

- signaling standard Kufstein – Innsbruck – BBT/Brenner-existing line ETCS L2/BL3
- station Kufstein – existing line (passing track for 740 m train lenght)
- station Wörgl – existing line (passing track for 740 m train lenght)
- station Jenbach – existing line (passing track for 740 m train lenght)
- station Hall/Tirol – existing line (passing track for 740 m train lenght)
- station Schwaz NEW (passing track for 740 m train lenght)
- station Fritzens-Wattens NEW (passing track for 740 m train lenght)
- passing-station Vomp new line (passing track for 740 m train lenght)
- New line Schaftenau – Radfeld (infrastructure is 203X not available) X

infrastructural condition DB

- signaling standard Munich-Trudering – Rosenheim – Kufstein/Salzburg ETCS L2/BL3
- station Fischbach NEW (passing track for 740 m train lenght)
- station Ostermünchen – existing line (passing track for 740 m train lenght)
- station Kirchseeon NEW (passing track for 740 m train lenght)
- passing-station Rottau NEW (infrastructure is 203X not available) X

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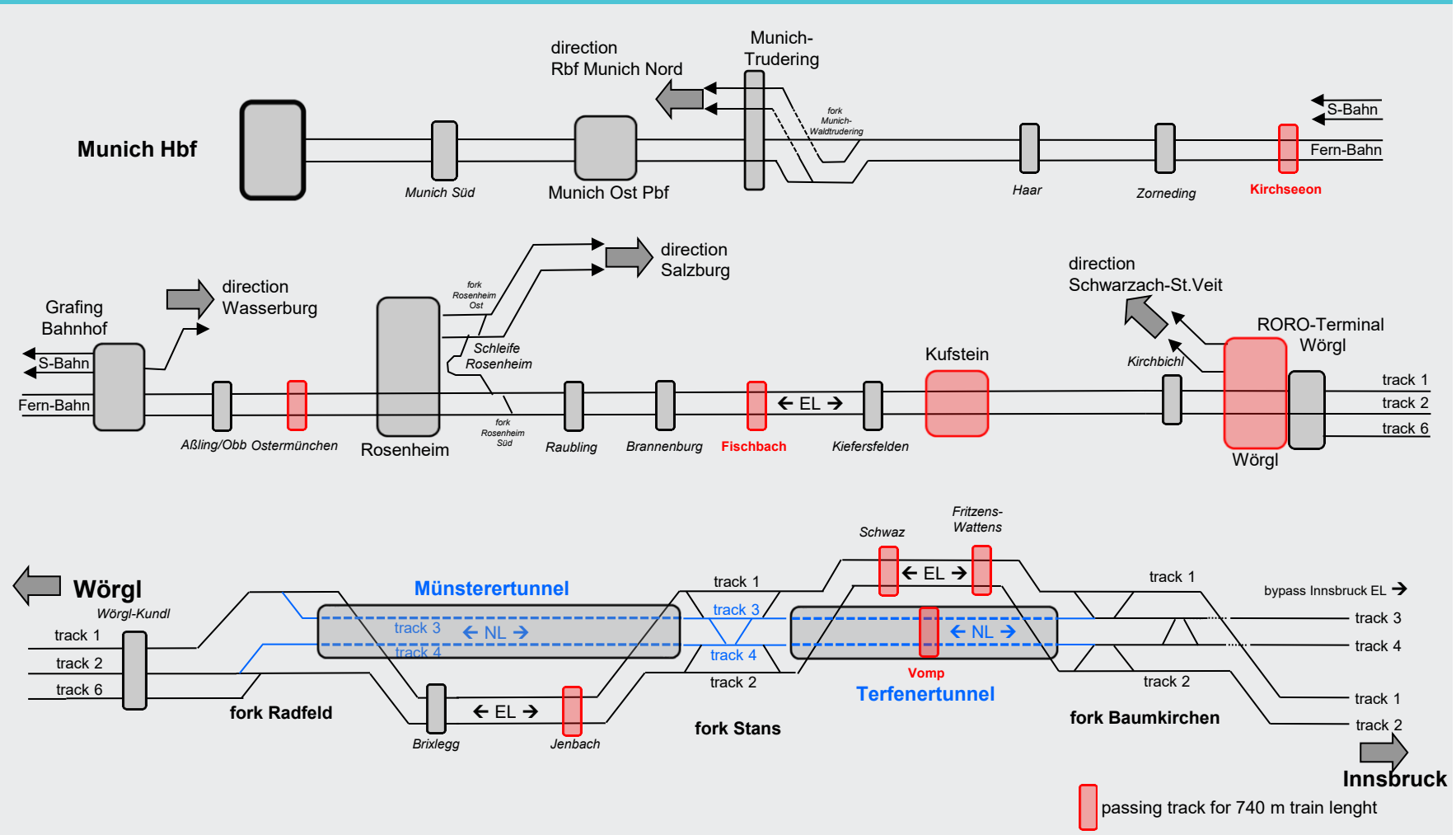
RAIL INFRASTRUCTURE BRENNER-NORTHERN ACCESS ROUTE 203X



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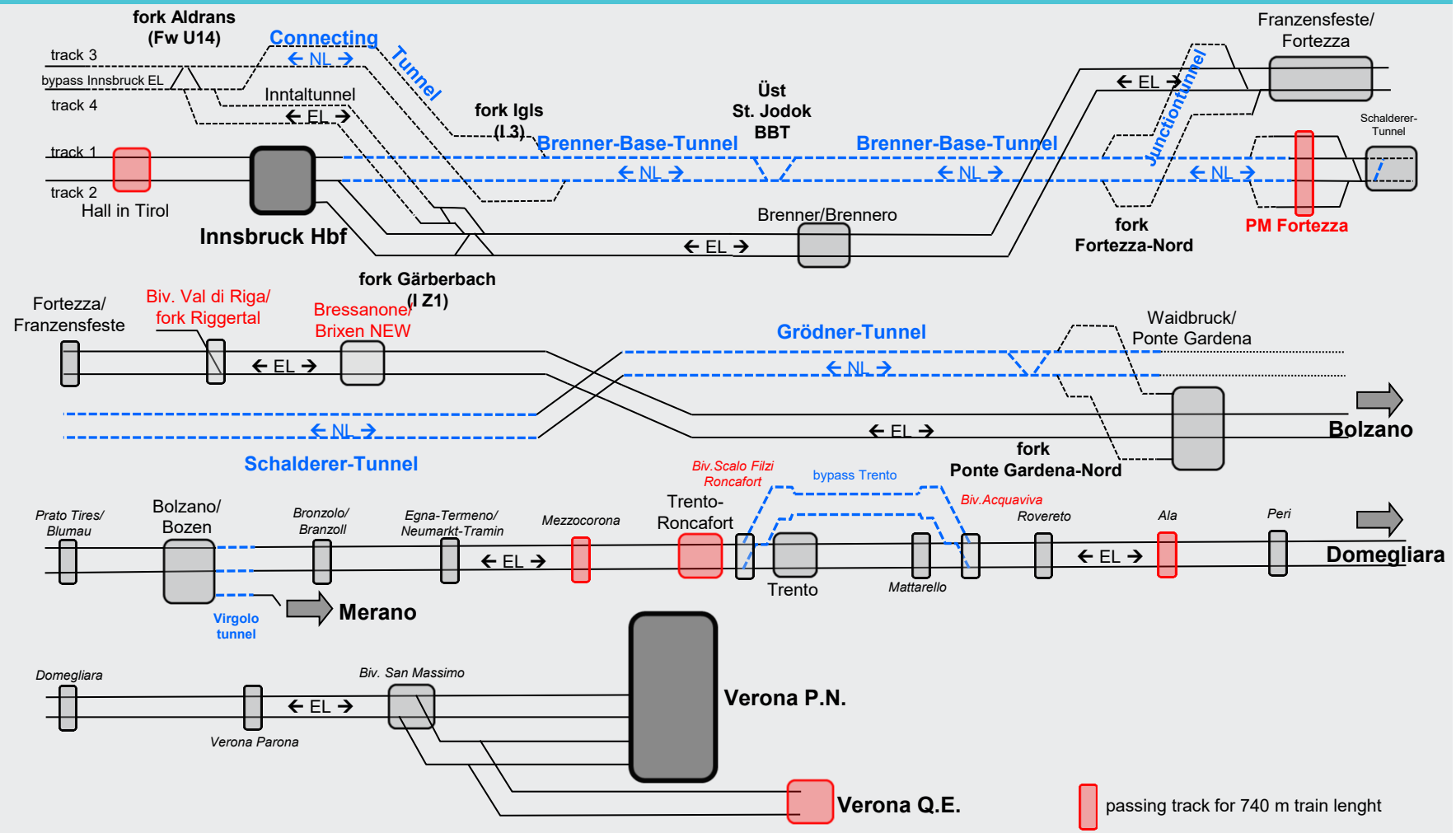
RAIL INFRASTRUCTURE BRENNER BASE TUNNEL +

BRENNER-SOUTHERN ACCESS ROUTE 203X



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EXPECTED VALUE/ FORECAST NUMBERS IN EXPLICIT CROSS-SECTIONS

cross-section *) finalized expansion of the existing line ABS 38	Long-distance passenger traffic	Short-distance passenger traffic	freight traffic	total cross-section
München - Rosenheim	52 *)	90	171	313
Rosenheim - Kufstein	78	44	148	270
Kufstein - Wörgl	78	60	148	286
Wörgl – Jenbach (total cross-section)	86	74	258	418
Jenbach – Innsbruck (total cross-section)	86	150	258	494
Innsbruck – Brenner-cross-section (BBT + existing line)	BBT 34 EL 2	BBT 0 EL 70	BBT 148 EL 64	318
Brenner-cross-section (BBT + existing line) – PM Fortezza/Fortezza	BBT 34 EL 2	BBT 0 EL 68	BBT 148 EL 10	262
PM Fortezza/Fortezza – Ponte Gardena (Lot 1 + existing line)	NL 8 EL 28	NL 0 EL 138	NL 148 EL 10	332
Ponte Gardena - Bolzano	36	70	158	264
Bolzano - Trento	40	89	158	287
Trento - Verona	40	53	123	216

BRENNER CORRIDOR PLATFORM

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BASICS

► Brenner-Corridor-Study vs. forecast 2025+

The basis for the calculating of amount of trains is the new evaluated Brenner Corridor Study, which has a lower forecast value for Innsbruck – Trento via BBT [148 FT-paths] compared to the interpolated **forecast 2025+** Innsbruck – Trento to 2030 via BBT [**160 FT-paths**]. This difference has been agreed on by ÖBB and RFI and included as a "planning buffer" in the assessments regarding maintenance.

The specified amount of trains for long-distance and short-distance passenger transports are manifested in the RFI train path catalogue and are entirely used for the calculation of the capacity utilization.

► path-catalogue RFI/DB/ÖBB

- amount of trains of long-distance/local passenger transport, freight transport
- definition of destination and source
- connection points of the paths-catalogue data:
  - PM Fortezza/Brennero RFI/ÖBB
  - Kufstein DB/ÖBB
- Manifest amount of trains fully adopted for capacity utilization calculation

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EXPECTED VALUE/ FORECAST NUMBERS

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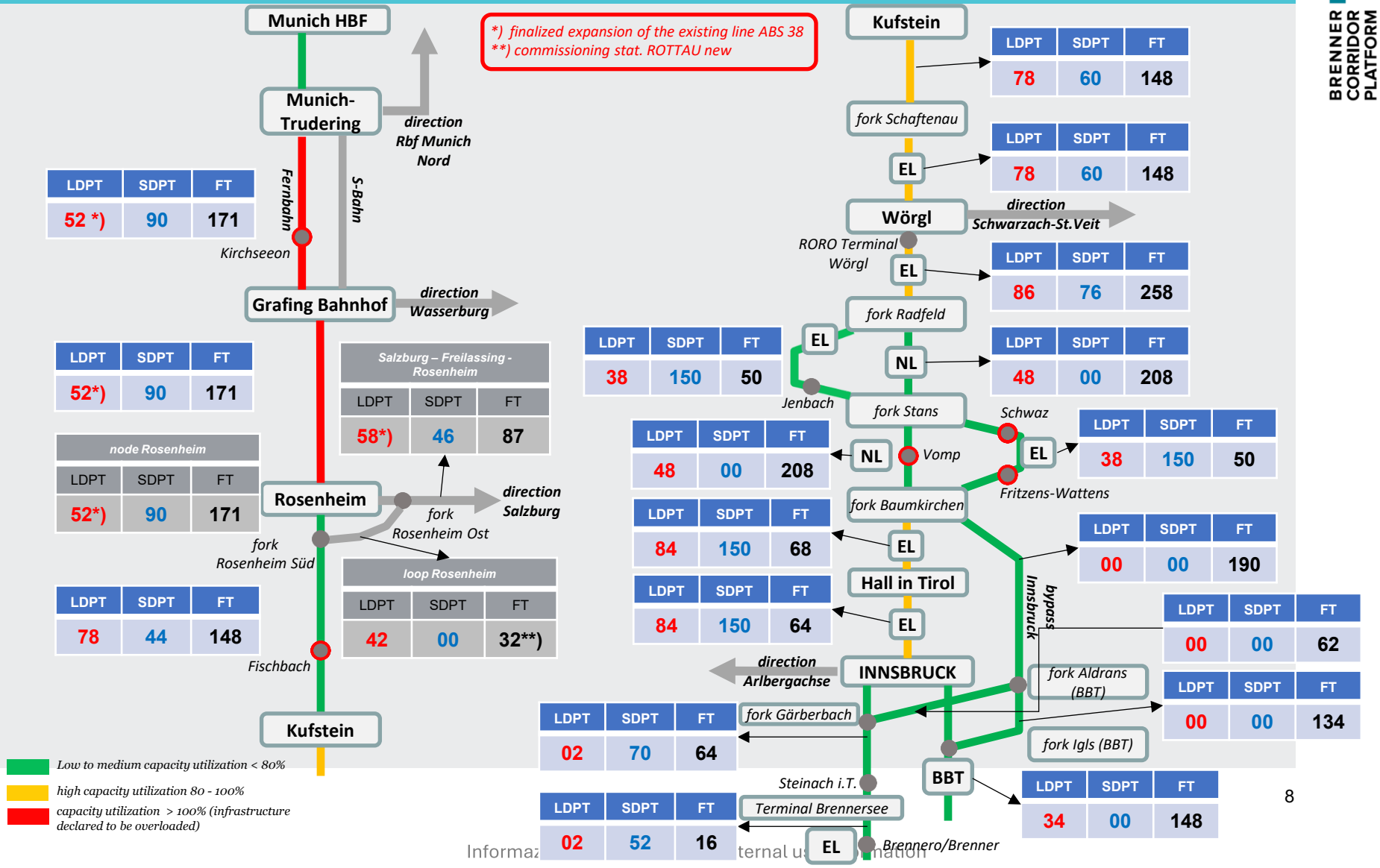

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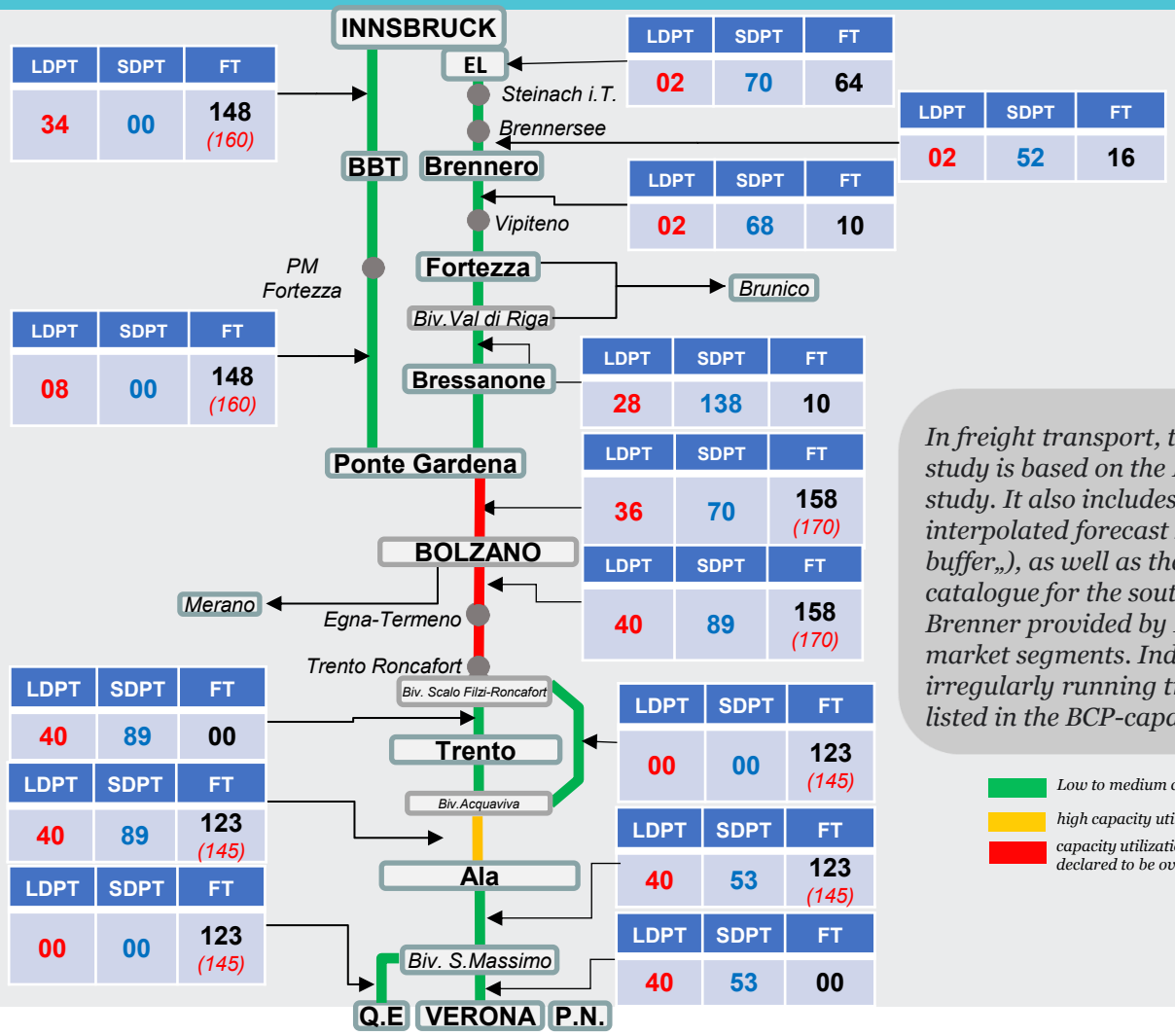
EXPECTED VALUES/ FORECAST NUMBERS –

CAPACITY-UTILIZATION BBT + BRENNER-SOUTHERN ACCESS ROUTE 203X



In freight transport, the BCP-capacity-study is based on the Brenner corridor study. It also includes the difference of the interpolated forecast 2025+ ("planning buffer„), as well as the national path-catalogue for the southern access to the Brenner provided by RFI/DB/ÖBB for all market segments. Individual, unpaired or irregularly running train paths are NOT listed in the BCP-capacity study!

- *Low to medium capacity utilization < 80%*
- *high capacity utilization 80 - 100%*
- *capacity utilization > 100% (infrastructure declared to be overloaded)*

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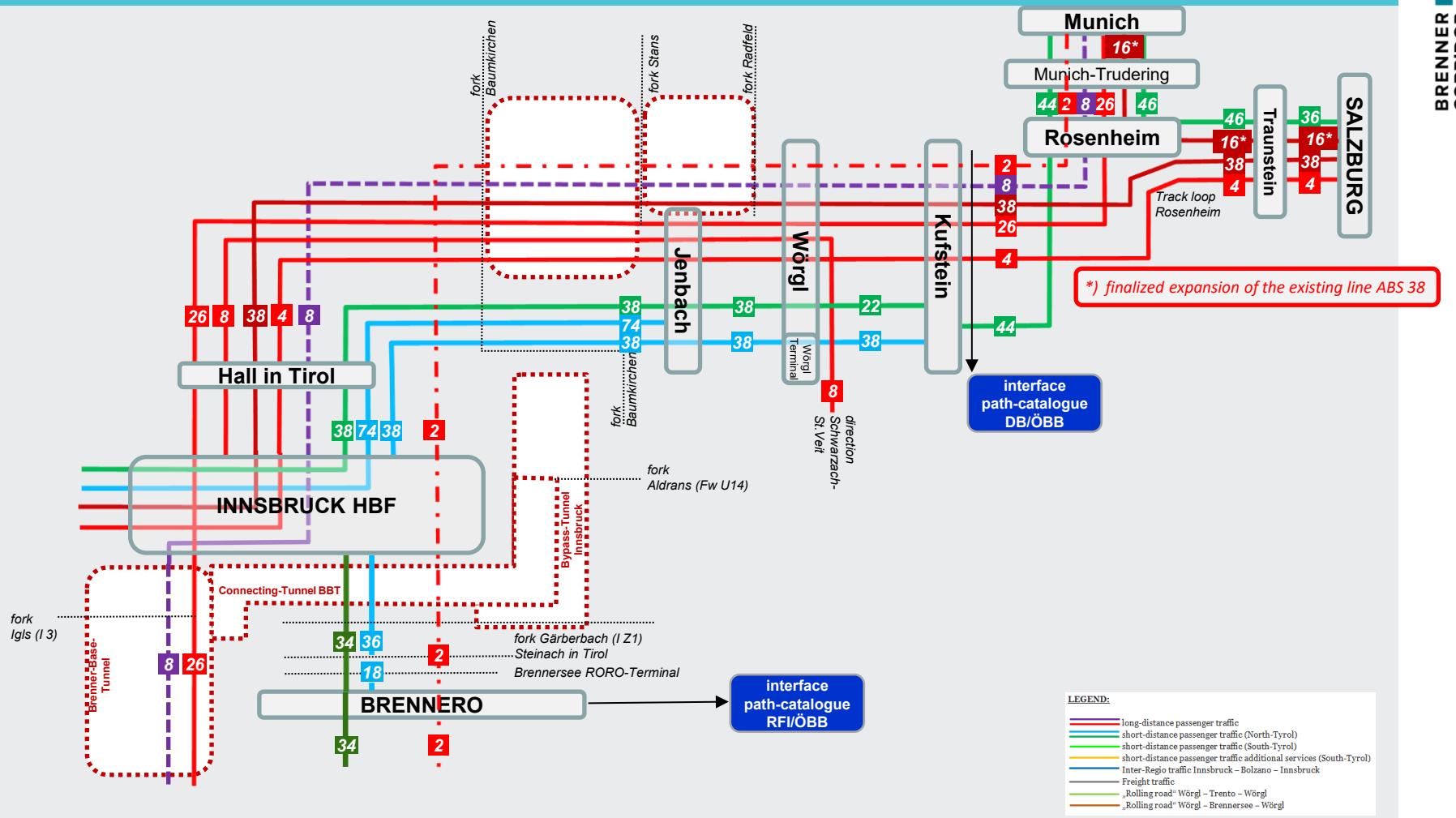
CAPACITY-UTILIZATION BRENNER-NORTHERN ACCESS ROUTE 203X

QUANTITY STRUCTURE FOR LONG-DISTANCE / LOCAL PASSENGER TRANSPORT



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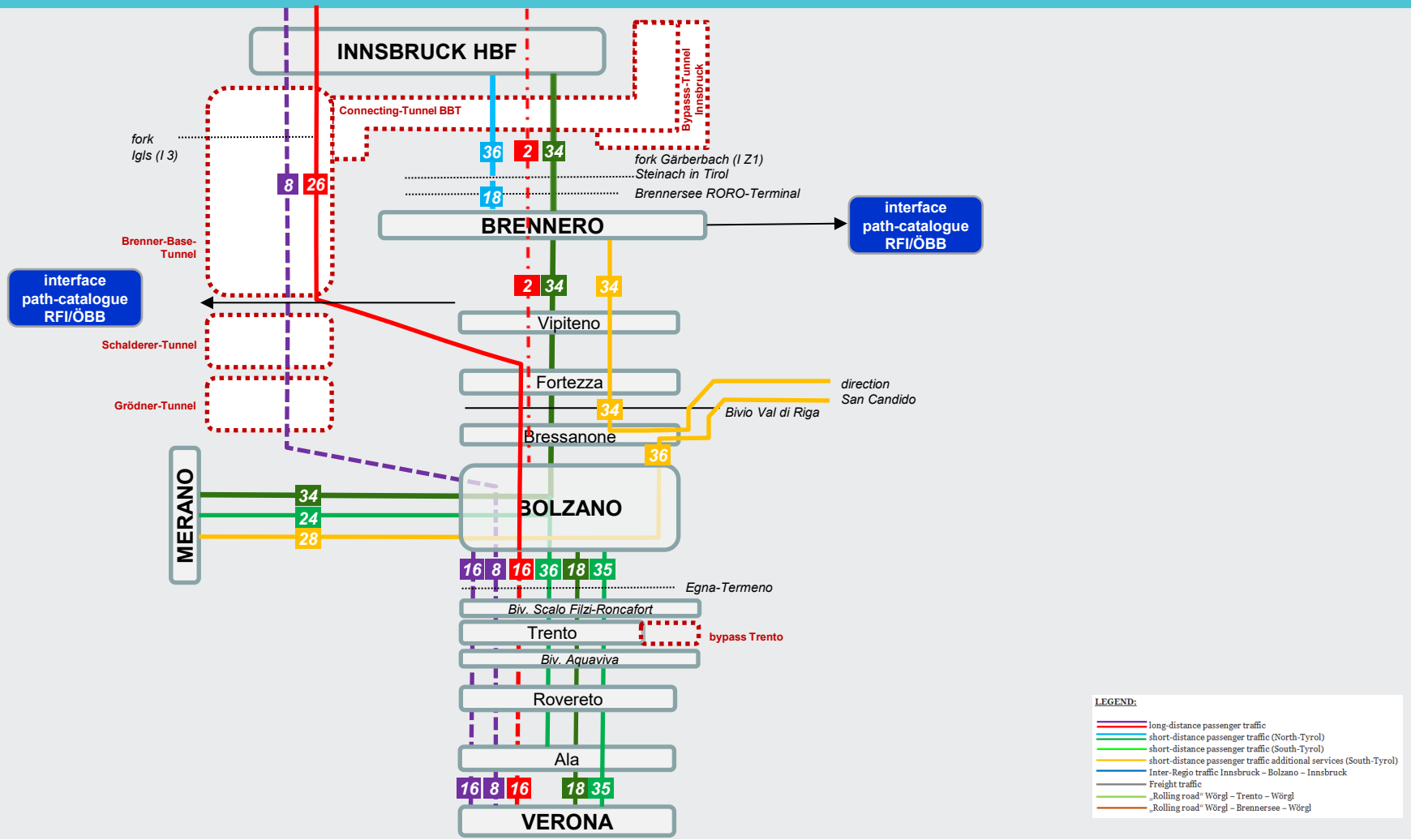

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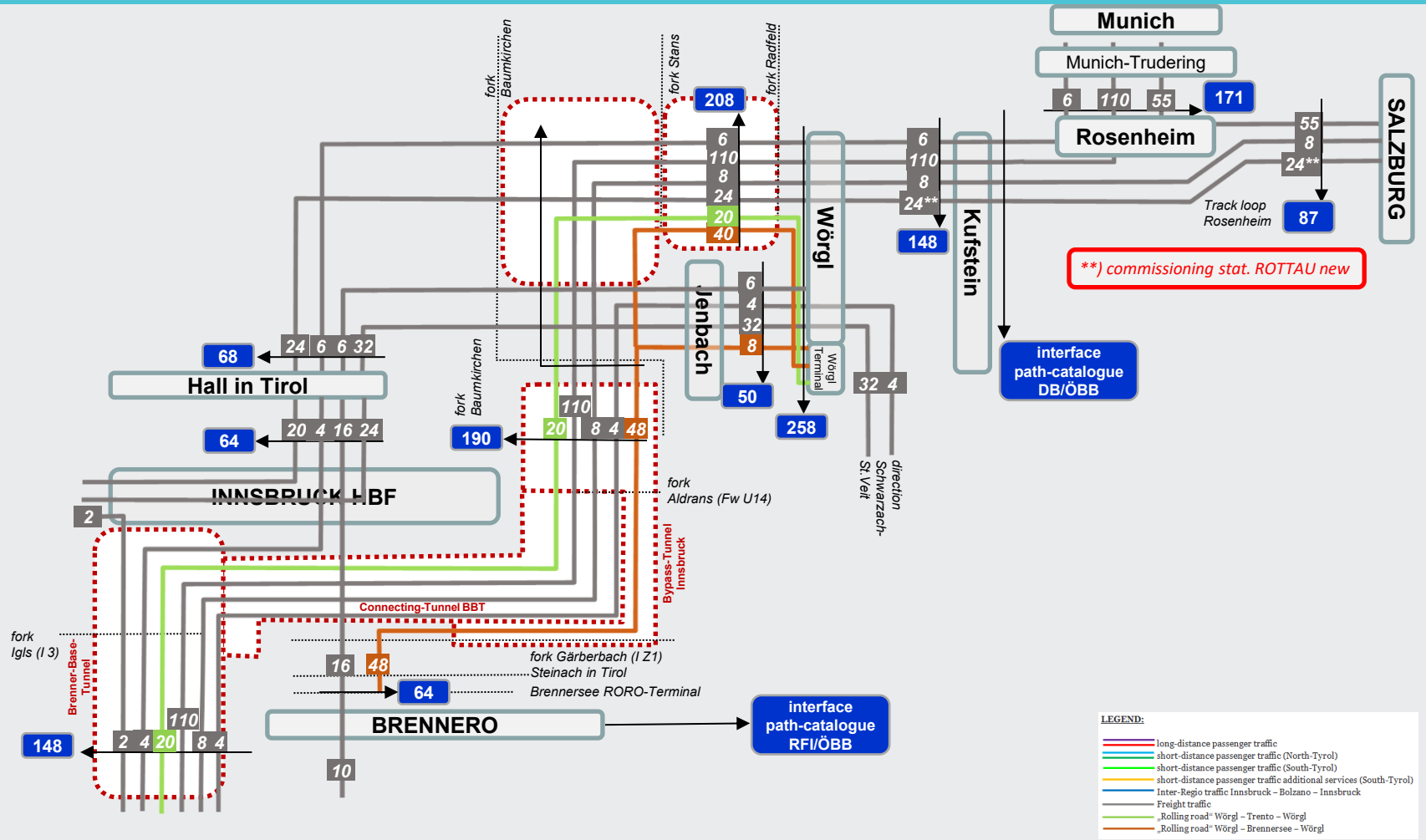
CAPACITY-UTILIZATION BRENNER-NORTHERN ACCESS ROUTE 203X

QUANTITY STRUCTURE FOR FREIGHT TRANSPORT



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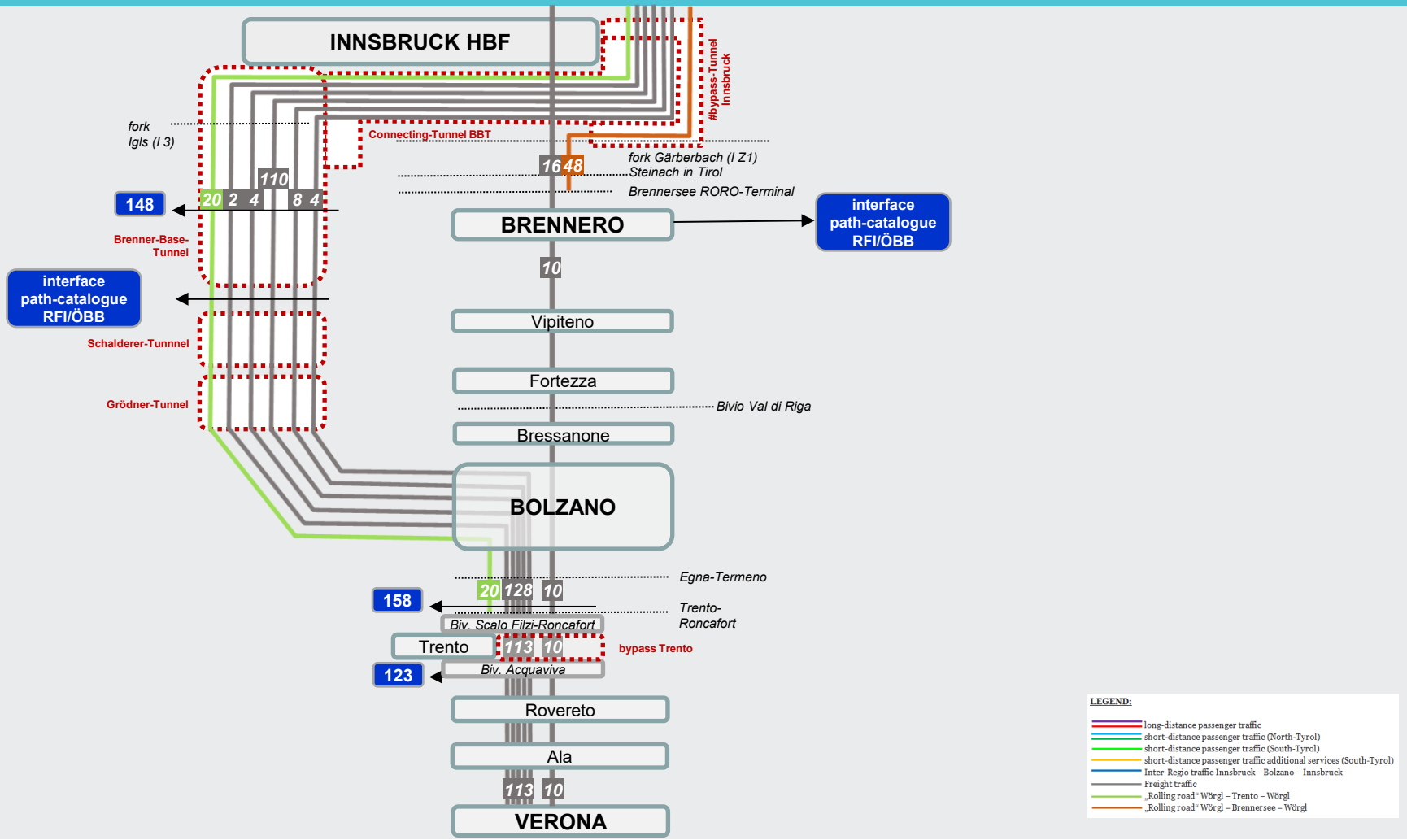
CAPACITY-UTILIZATION BBT + BRENNER-SOUTHERN ACCESS ROUTE 203X

QUANTITY STRUCTURE FOR FREIGHT TRANSPORT



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CURRENT REMAINING CAPACITY - CONCLUSION

- In the BCP-capacity-study 203X, the compatibility of the freight paths with those of long-distance or short-distance passenger traffic of RFI/ÖBB/DB is confirmed by means of the paths-catalogue (PM Fortezza, Brenner/Brennero serves as the selected interface for RFI/ÖBB, as well as Kufstein for ÖBB/DB). This forms the basis of new analytical studies on the subject of maintenance BBT and the northern and southern approach.
- For the overall evaluation of the Brenner-axis Munich - Verona (existing and new line) over 24 hours, the path-catalogue RFI/ÖBB/DB causes a full capacity utilization on the Brenner-northern access in the section Munich-Trudering - Rosenheim, as well as on the Brenner-southern access in the section Ponte Gardena - Bolzano – Trento - (Ala).

  The calculation is based on the assessment of RFI/ÖBB/DB and the ÖBB-side BCP-capacity-study (see slides 11-14). Based on the BCP-capacity-study, the Brenner corridor study and the included "planning buffer" (Innsbruck - Trento via BBT [total 160 FT paths]) are included in the quantity structure.
- **Recognitions:**
  - The generously dimensioned **buffer distance** (at least 8 minutes) between the freight train-paths **increases quality** on the one hand, but **reduces capacity** on the other.
  - **Peak traffic times** (4:00 p.m. – 8:00 p.m. and 5:00 a.m. – 9:00 a.m.) and their pre- and post-carriage phases are considered critical. High priority is granted to local passenger transport, which in turn collides with the expected freight traffic density and consequently leads to capacity utilization or exceeding capacity in the relevant time segments → delay in freight traffic = loss of quality is expected!

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