

Rete Ferroviaria Italiana

Expansion of railway infrastructure.

18 October 2019

Carlo De Giuseppe

Direzione Commerciale Nord-Est



The European strategic lines and the long-term planning for the development of the railway sector

Transports in Europe are characterized by the almost total dependence on oil (96%), by important infrastructural gaps, by problem of congestion and network splitting.

The **White Paper on Transport** adopted by the European Commission in 2011 traces the path for the realization of a competitive and sustainable European common space by pursuing a series of objectives:

Objectives 2030

- **30% of freight transports over 300 km to be carried out on railway** or on water
- **tripling of the current European AV railway network**
- 50% cars powered by traditional fuels in urban transport

Corridors of Core Network TEN-T



Objectives 2050

- 50% of freight transports over 300 km to be carried out by train or on water
- completion of the European AV railway network
- prevalence of rail passenger transport on the average distance
- connection of all major European airports to the rail network

The Infrastructure Manager Plan to improve the Freight Network.

Context and
European Policy

National Strategy

Companies'
requests

ACTIONS

Organizational

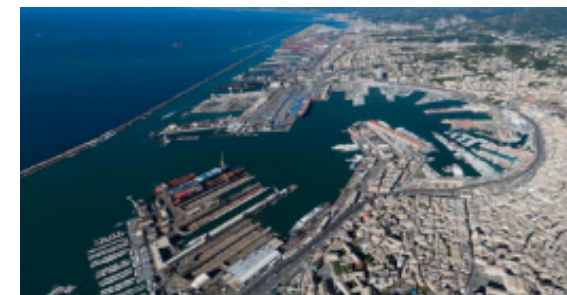
- Framework Agreement
- Integrated ICT platforms

Upgrading
performance

- Strengthening of pass lines
- Performance upgrading of corridors

Connections
with Ports
and
Terminals

- Strengthening of railway connections to ports and strategic terminals
- Upgrading of railway infrastructure in ports and terminals



National Plan for loading gauge

Interventions made and planned:

2021	/ 54% linee TEN-T core merci / 59% linee TEN-T comprehensive rilevanti
2023	/ 71% linee TEN-T core merci / 81% linee TEN-T comprehensive rilevanti
Oltre 2023	/ 100% linee TEN-T core merci / 100% linee TEN-T comprehensive rilevanti



National Plan for train lenght

Interventions made and planned:

2021	<ul style="list-style-type: none"> / 28 % linee TEN-T core merci / 4% linee TEN-T comprehensive rilevanti
2023	<ul style="list-style-type: none"> / 45% linee TEN-T core merci / 30% linee TEN-T comprehensive rilevanti
Oltre 2023	<ul style="list-style-type: none"> / 100% linee TEN-T core merci / 100% linee TEN-T comprehensive rilevanti



National Plan for axle weight improvement

Interventions made and planned:

2021	<ul style="list-style-type: none"> / 83% linee TEN-T core merci / 84% linee TEN-T comprehensive rilevanti
2023	<ul style="list-style-type: none"> / 83% linee TEN-T core merci / 100% linee TEN-T comprehensive rilevanti
Oltre 2023	<ul style="list-style-type: none"> / 100% linee TEN-T core merci / 100% linee TEN-T comprehensive rilevanti



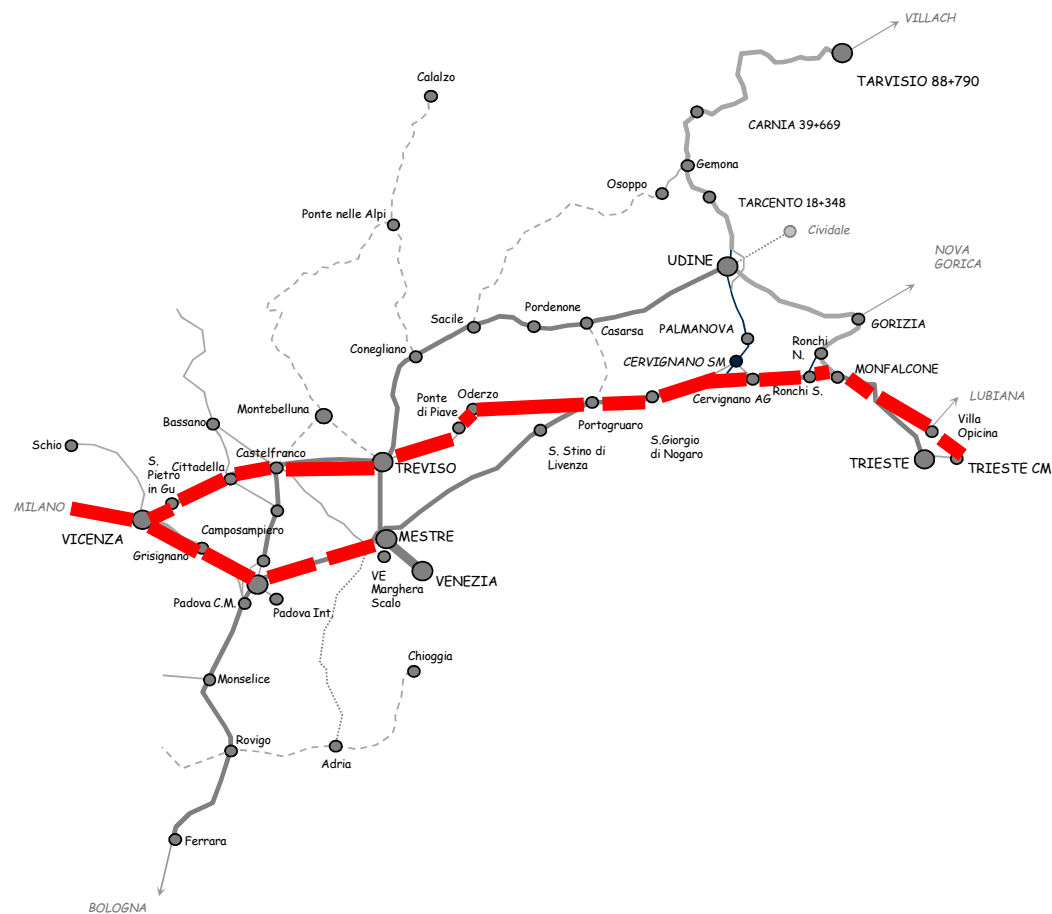
ERTMS: European Rail Traffic Management System

ERTMS is the system adopted by EU to achieve the interoperability in the railway network. It has also these benefits:

INCREASE SAFETY	<ul style="list-style-type: none"> - Shunting protection - Level crossing supervision - Axle weight protection - On board calculation of braking curves
INCREASE CAPACITY ON NODES	With ERTMS HD (High Density) in huge nodes
IMPROVE RELIABILITY, PUNCTUALITY AND SPEED	
REDUCE INSTALLATION AND MAINTENANCE COSTS	No more signals and cables needed
LOWER COST FOR ACC IMPLEMENTATION AND FOR LAYOUT MODIFIES IN THE STATIONS	ACC ERTMS oriented are cheaper by 30% than usual ACC.

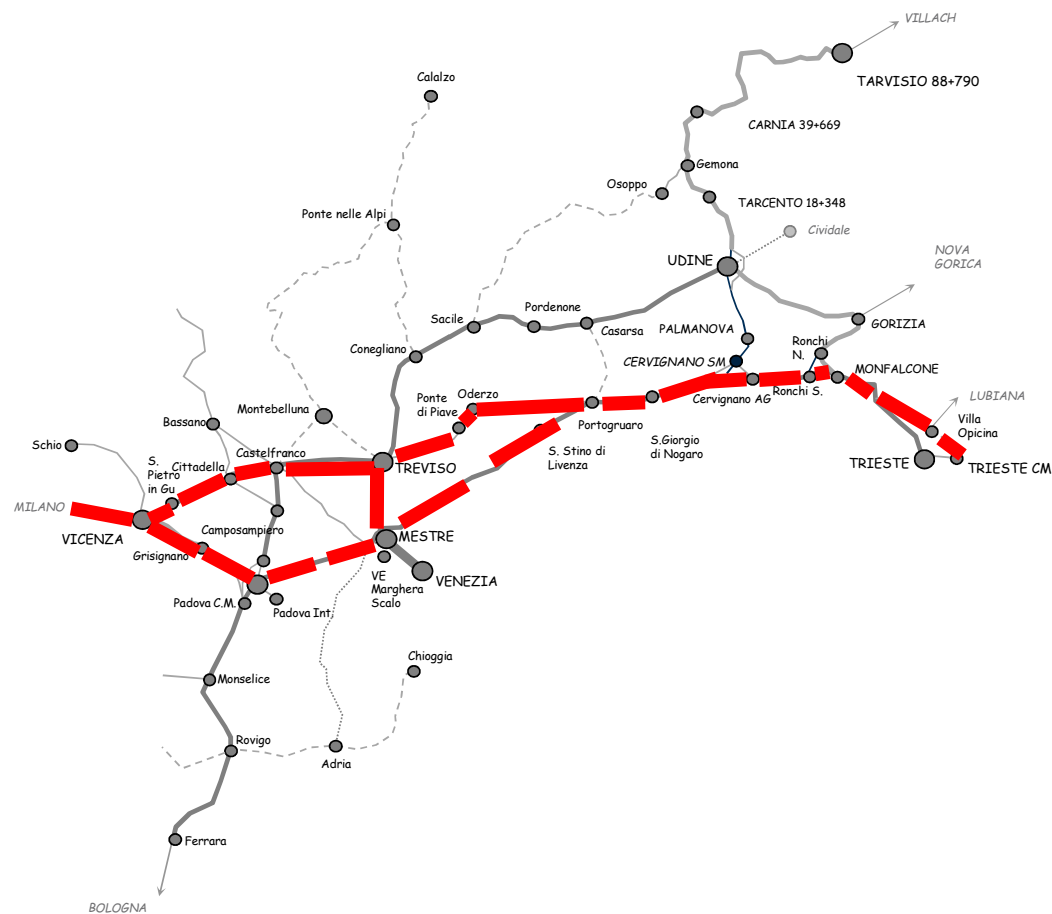
ERTMS: European Rail Traffic Management System

2021



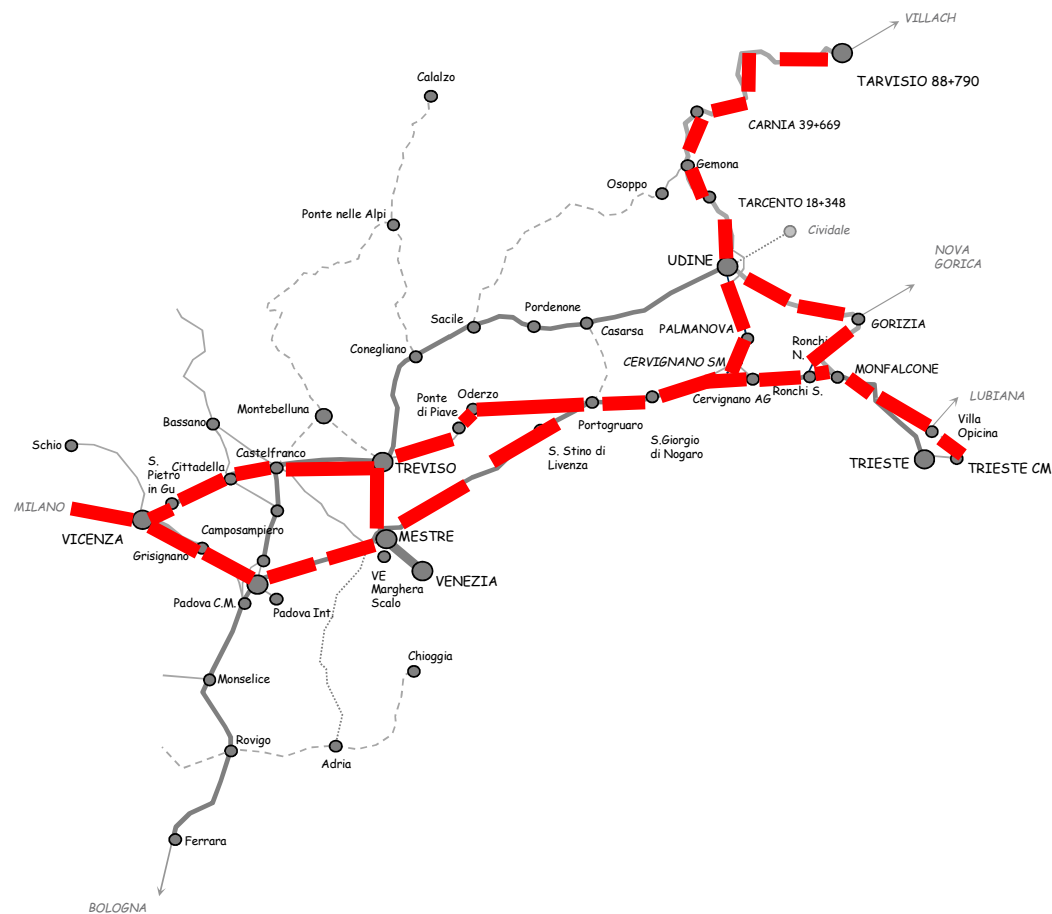
ERTMS: European Rail Traffic Management System

2026



ERTMS: European Rail Traffic Management System

2030



Friuli Venezia Giulia: infrastructures and technologies



La Regione Friuli Venezia Giulia si estende per 7.845 km² e conta 1,2 milioni di abitanti. Il territorio è suddiviso in 216 Comuni distribuiti in 4 Province. La Regione si posiziona al 12° posto per densità abitativa, al 15° per popolazione, al 16° posto per numero di enti locali e al 14° posto in Italia per superficie.



dati al: 30 giugno 2017

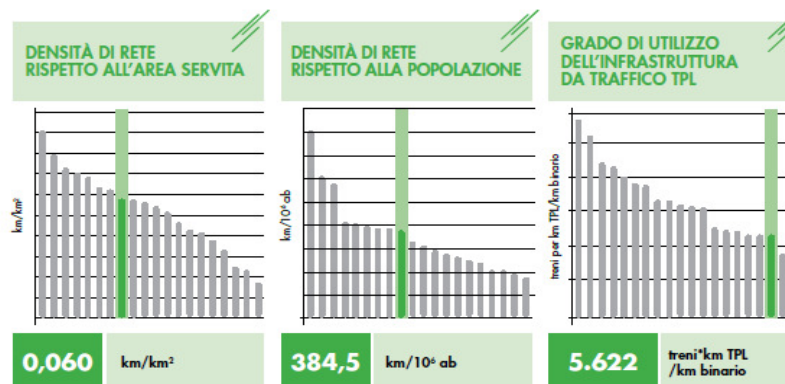
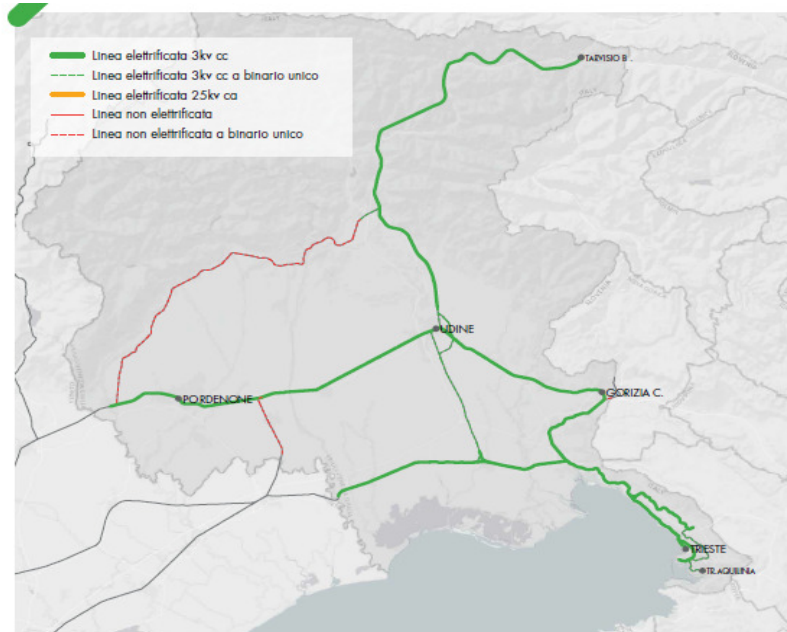
ALIMENTAZIONE

Linee elettrificate	388 km
› Linee a doppio binario	299 km
› Linee a semplice binario	89 km
Linee non elettrificate (diesel)	84 km

TECNOLOGIE PER IL TELECOMANDO E L'INTEROPERABILITÀ

Sistemi di telecomando della circolazione (SCC/CTC+DPC)	228 km
---	--------

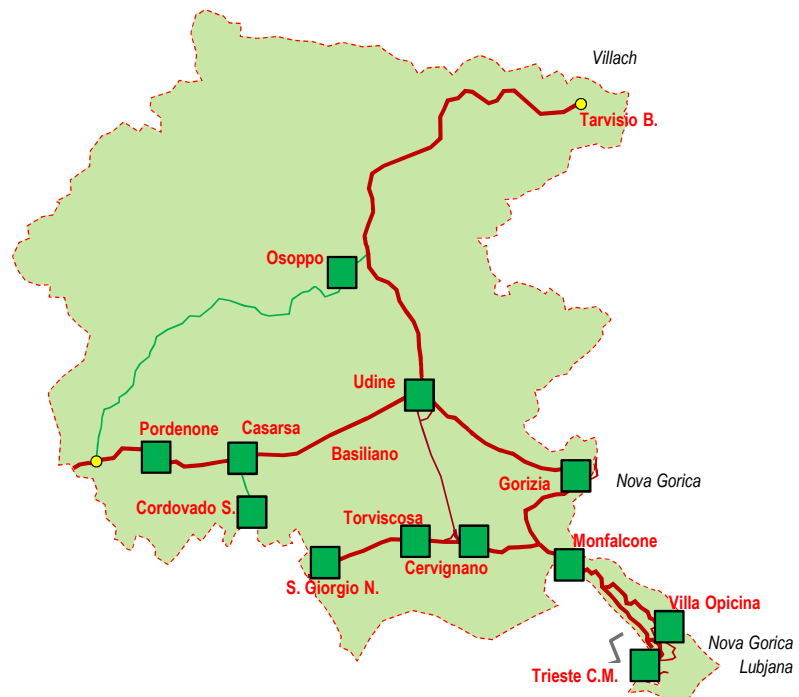
N.B. Sono considerati esclusivamente i km di rete RFI in esercizio



Industrial Plants and Interports

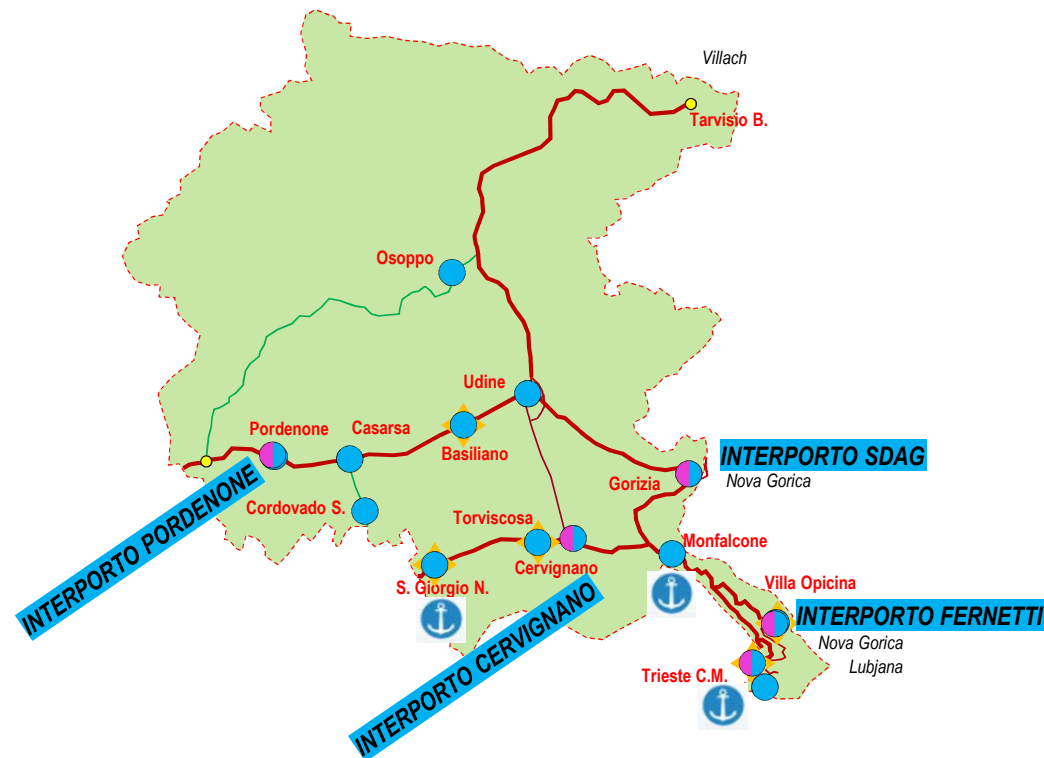


TERMINAL TYPE



■ Connection
 Autoproduction

CONNECTED STRUCTURES



● Logistics connection
 ◆ Dangerous freights
● Industrial connection
⚓ Port connection

Slide of Baltic-Adriatic Corridor interventions animated that recalls slide 16 and 17

Slide of Mediterrean Corridor interventions animated that recalls slide 18, 19 and 20.

Thanks for your attention

Udine Node

Intervention description:

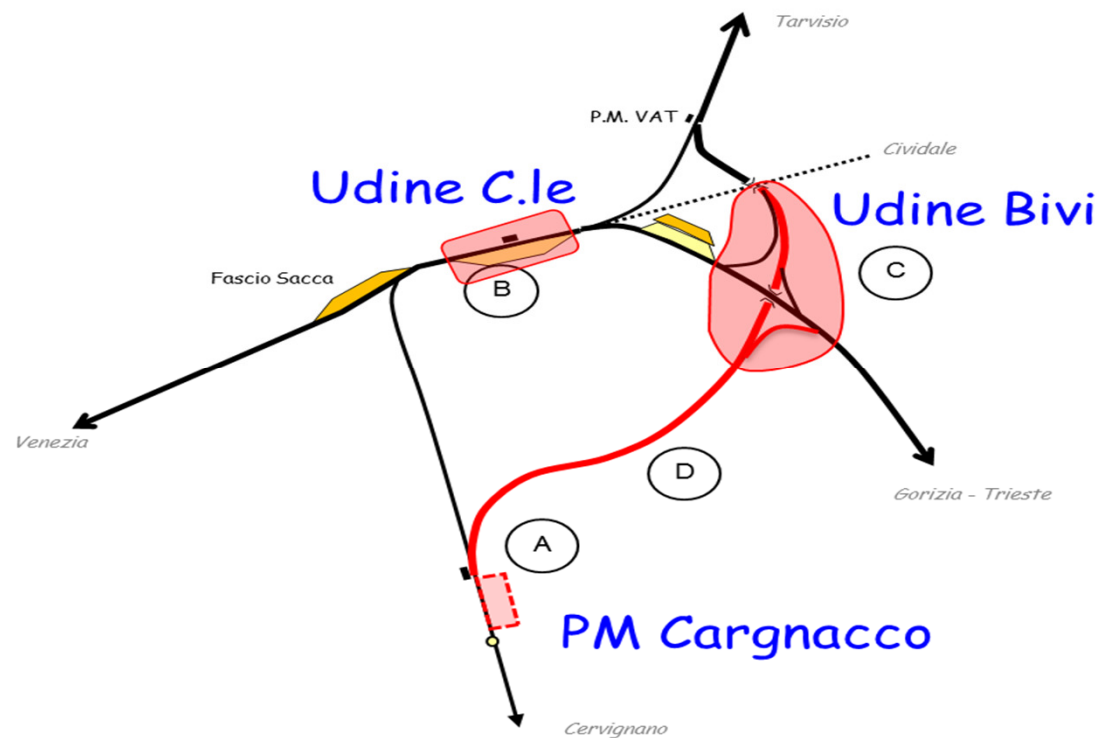
- A. New ACC that includes Udine Parco and some partial changes of the station layout
- B. PM Cargnacco activation
- C. Final layout of the station
- D. Double belt line between PM VAT and New PM Cargnacco and activation of the connection between Gorizia line and Cervignano lines

State of implementation

Definitive project of Udine ACC is on going

Benefits:

- ❑ CAPACITY
- ❑ Separation of freight and passenger flows, belt line between PM VAT and PM Cargnacco is for freights and Udine C.le is for passengers
- ❑ RELIABILITY
- ❑ SPEED IMPROVEMENT at 60 km/h of Udine station itinerary on Venice side.



LCC: 203M€
Funded: 53M€

DESIGN

ACTIVATION (1° PHASE): 2023/2024

Gorizia Lunette

Intervention description:

The intervention will link Udine-Gorizia-Monfalcone line with the line between Gorizia and Nova Gorica.

The length is of about 1 km with a slope of 0,8 ‰.

Freight trains will be linked directly from Trieste/Venice with the line to Slovenia without reversing the train direction in Gorizia.

Furthermore Intermodal Terminal SDAG will be linked directly to Monfalcone.

Benefits:

Reduction of the shunting number in Gorizia station.



LCC: 13 M€

DESIGN

ACTIVATION 2024

New Station Layout in Villa Opicina

LCC: 35 M€
Funded: 35 M€

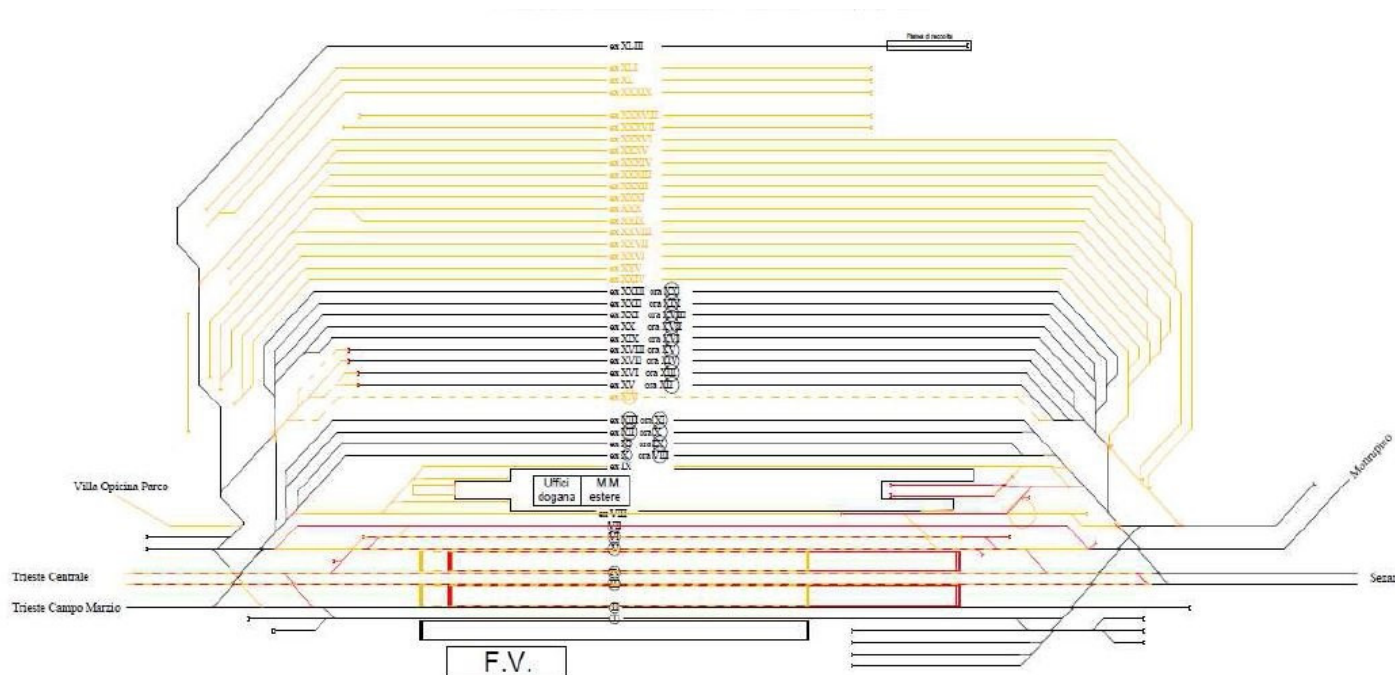
DESIGN

ACTIVATION: 2023/2024

Currently it is a passing station with an huge number of tracks, manly for freight traffic.

The upgrading will allow to:

- NEW ACC;
- VII TRACK LENGHT OF 750 M, AND EXTENTIONOF THE OTHER TRACKS;
- SPEED IMPROVEMENTS OF THE SWITCHES AT 60 km/h;
- LAYOUT OPTIMIZATION;
- PLATFORMS IMPROVEMENT;
- MORE TRACKS CONTROLLED BY THE CENTRAL SYSTEM.



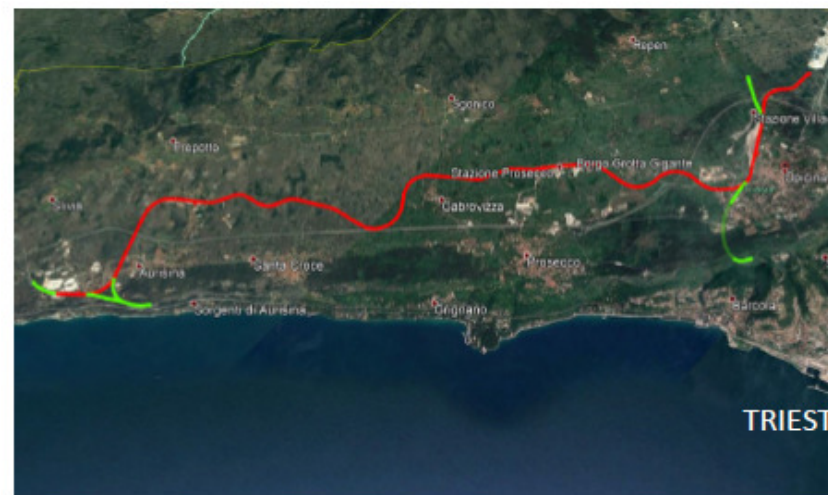
Technological interventions on the line Bivio d'Aurisina – Villa Opicina

Intervention description:

- A new signalling system that increase the line capacity at standard levels;
- A technological upgrade preparatory for the ERTMS (Level 2) implementation plan.

Benefits:

- Increased reliability, that allows an improvement of the traffic between Italy and Slovenia;
- The adjustment to the Technical Specifications for Interoperability.



LCC: **23 M€**
Funded: **0 M€**

DESIGN

Technological upgrade and speed improvement of Venezia-Trieste

Intervention description:

The intervention will improve the maximum speed to 200 km/h and will reduce the travel time of about 25 minutes. The technological upgrade is preparatory for the installation of ERTMS level 2.

The principal interventions are:

- Signaling system replacement with a new one that allow the maximum speed of 200 km/h and a capacity of 10 tr/h for direction;
- New :
 - Portogruaro;
 - Latisana, also for hydraulic problems;
 - New bridge on Isonzo river;
 - between Ronchi and Aurisina;
- Suppression of all level crossing;
- Elimination of D4 restrictions;
- Improvement of track length at 740 m in San Donà di Piave – Jesolo.

La prima fase degli interventi riguarda il potenziamento tecnologico della linea.



Benefits:

- ☐ Speed improvement;
- ☐ Elimination of singular points;
- ☐ Line train length at 740 m
- ☐ Reduce travel time from Venezia Mestre to Trieste.

State of art:

Was completed the Feasibility Design for infrastructural works;

Was completed Definitive Design for technological upgrade;

Was completed the study to define the works to delete D4 restriction.

LCC: 1.800 M€
Funded: 232 M€

DEIGN

Activation from 2023