The route

The new high speed ROME - NAPLES line

The line starts immediately after the district of Tor Sapienza, involved in the upgrading works for the rail junction of Rome, in the vicinity of the Grande Raccordo Anulare junction alongside the motorway A24 Rome-L'Aquila. After a bend, the line runs parallel to the motorway connecting road Fiano-San Cesareo, and then crosses the area of the Colli Albani hills and descends along the course of the rivers Sacco and Liri before crossing the river Gari. From here the route follows the corridor at the foot of the mountains close to the Rome-Naples motorway, to minimise impact on the environment. The line then rises slightly and runs through the mountainous area of Monte Lungo, in the province of Caserta, through a series of tunnels. Running very gradually downhill, it crosses the plains of Volturno returning to virtually flat terrain on the eastern outskirts of Naples, at the station of Naples Afragola. From here it enters the Neapolitan rail junction through to the station of Naples Central Station.

The structural integration with the existing lines will be via three interconnections with the existing Rome-Cassino-Naples line located at Frosinone nord and Cassino sud, to enable freight and passenger access to the high speed lines, and at Caserta, to guarantee local users with a high performance and capacity service also for connections from and to the Adriatic coast and the south of Italy. From 2005 the connection with the existing line Rome-Naples via Formia will allow the new high speed line to be linked to the Naples Central Station using for the last 20 kilometres – that will be completed in 2008 - the existing line Rome-Formia-Naples.

On the high speed Rome-Naples line, for the first time in Europe, the ERTMS (European Railway Management System) will be used, the new train control and spacing system created on a European level to guarantee rail interoperability. The ERTMS uses the GSM Railway system, with which signals transmitted from the ground - under the supervision of the driver - are received directly by the on-board equipment and translated into commands for circulation, spacing and braking. The system comprises a central unit (RadioBlock Centre) which transmits via radio continuous commands to each train for the speed to be observed, depending on both train travel and the restrictions of the route or temporary slowdowns. At the same time the train sends its position to the central unit.

Technical characteristics

- Length: 204 km
- Tunnels: 39 km
- Cuttings and embankments: 126.6 km
- Viaducts and bridges: 39 km
- Speed: 300 km/h
- Maximum gradient: 18 ‰
- Minimum curve radius: 5.450 m
- Interconnections: 21 km

Journey time

- Now: 1h 45’
- Future: 1h 05’

The main works

The project envisages the construction of over 600 works of different types (66 cut-and-cover tunnels and 26 bored tunnels, 85 viaducts, 267 embankments, 189 cuttings).

The main works include:

- the Colli Albani tunnel, running a length of 6,625 metres, from kilometre 29.9 to km 36.2 crossing the municipalities of San Cesareo, Palestrina, Rocca Priora and Labico in the province of Rome;
- the Volturno viaduct, 1,632 metres long, runs from kilometre 183.9 to km 185.7 in the municipality of Capua, using a metal span bridge of 35 metres across the river Volturno.

61 municipalities crossed

In the province of Rome:

In the province of Frosinone:

In the province of Caserta:
Rocca d'Evandro, Mignano Montelungo, Conca della Campania, Tora e Piccilli, Marzano Appio, Caianello, Teano, Calvi Risorta, Sparanise, Pignataro Maggiore, Pastorano, Vitulazio, Capua*, Santa Maria La Fossa, San Tammaro, Santa Maria Capua Vetere, Teverola, Carinaro, Gricignano d'Aversa, Succivo, Marcianise, Orta di Atella.

* municipalities not crossed through but involved in construction

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