

ESA in partnership with Europe's railways

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Satellite antenna on cabin roof. Credit: ESA

Europe's railway network plays a vital role in keeping our continent on the move. A new ESA initiative is considering the ways that space can add value to the network as it enters its third century of operations.

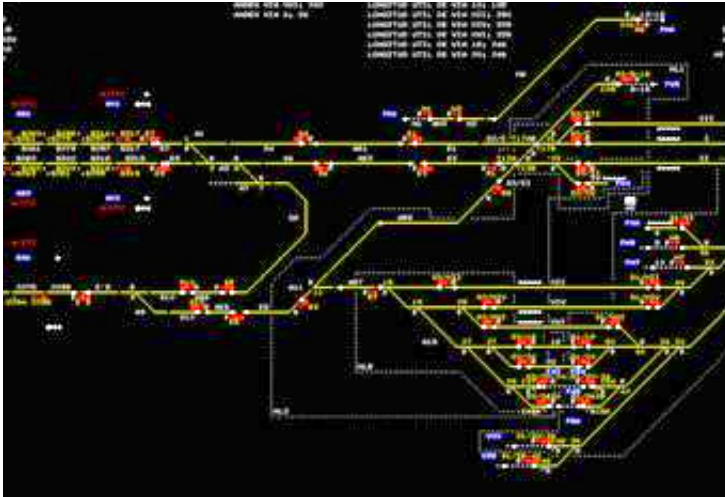
Space4Rail aims to support the railway community by raising awareness of the added value that space systems can deliver, and highlighting ESA funding programmes with the potential to support their use.

Plenty of work has already been done through these programmes, including the use of satellite navigation both to monitor trains and check the integrity of rail infrastructure, provide broadband to train passengers via satellite and harness Earth-observing satellite data to help predict landslides or subsidence.

Space technologies offer multiple means of boosting the capacity, safety and competitiveness of the rail network – and ESA, as a research and development agency, has various programmes dedicated to supporting such activities.

As it can sometimes be difficult for potential partners to find their way around the ESA organisation, Space4Rail has been set up as a one-stop shop for the rail industry to learn about the Agency and submit proposals for partnerships in a simple, streamlined way.

ESA can offer financial and technical support to projects – including access to its specialists and Agency laboratories – while acting as a broker between the space industry, the railway industry and service providers.



Deimos system to track train arrivals, now installed at more than 400 train stations in Spain. Credit: Deimos

ESA is already contributing to the Next Generation Train Control (NGTC) project through a [satellite](#) expert group, providing technical expertise on integrating satnav into future [railway](#) signalling systems.

Coordinated by the European rail manufacturing [industry](#) association UNIFE and supported through the European Commission's Seventh Framework Programme, NGTC is a consortium made up of all the main rail system signalling suppliers, together with mainline operators and infrastructure managers as well as urban [rail](#) operators.

Provided by European Space Agency

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