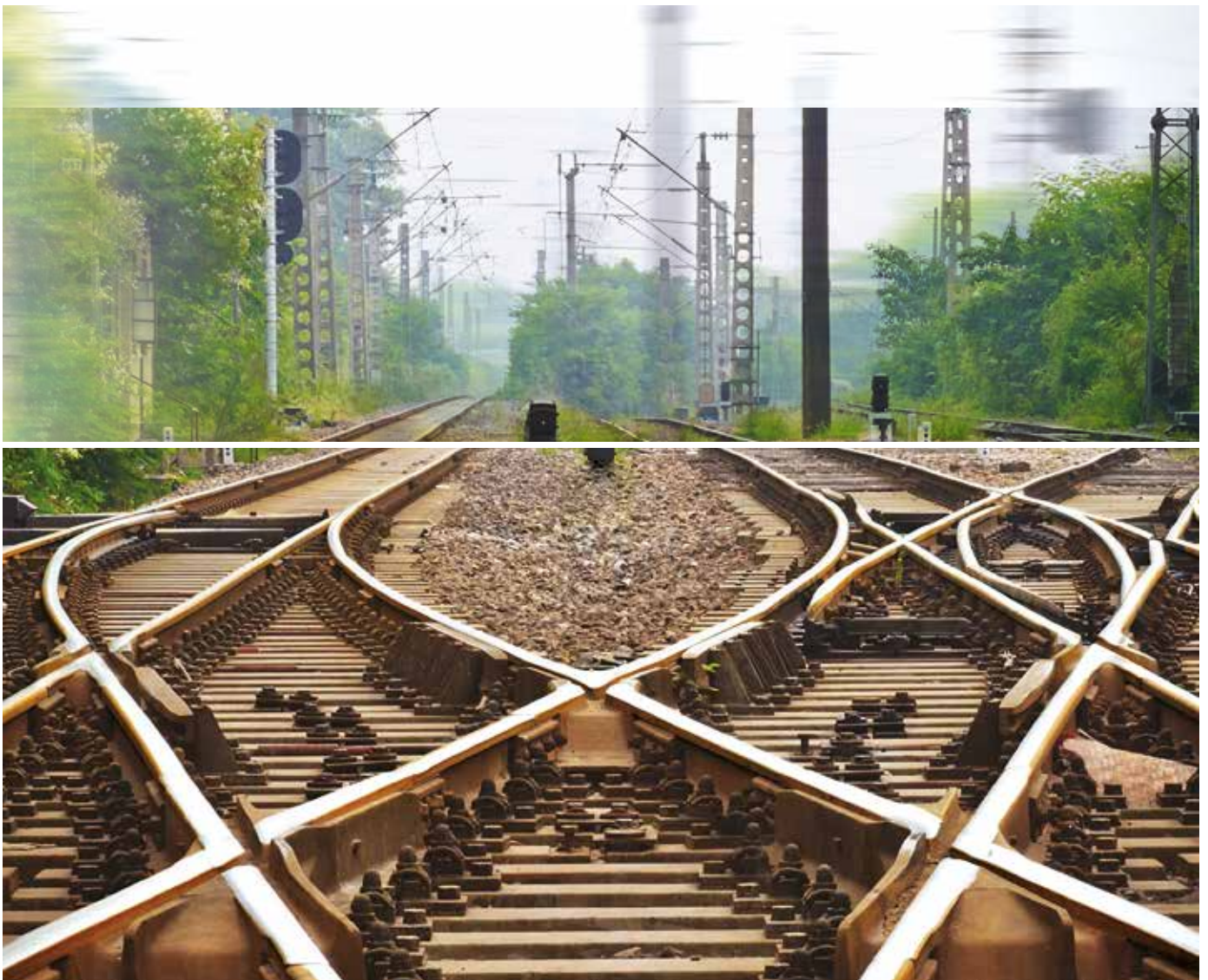


MAIN LINE RAIL

FOCUSED EXPERTISE FOR A SAFE, HIGH PERFORMANCE NETWORK





Trusted Solutions for Rail

Thales provides systems to demanding regional and national rail networks worldwide. Our solutions enable cross-border operations. We specialise exclusively on IT-based critical solutions that harness our Group's experience in satellite and aviation navigation as well as security.

Whether you need a standalone product or a fully integrated turnkey project, Thales rail systems specialists can help.

Optimise your infrastructure. Boost the efficiency, capacity and reliability of your network: Thales can manage legacy systems while preparing your network for the disruptions of the future.

Start right. Your greenfield project needs a solid and stable partner with the human and financial resources you require.

Get the precise solutions you need. Whether you need to revitalise your existing rail infrastructure or build a new railway line, all our solutions will be tailored to your specific needs. You get systems adapted to your unique situation and the local regulations in your country or region

Benefit from our experience. Between our Group's expertise and our own wide experience, Thales has a unique ability to manage complex engineering projects and deliver fully integrated solutions.

Boost customer satisfaction. Provide your users with more reliable service, more comfortable journeys, shorter door-to-door travel times, better payment choices, mobile connectivity everywhere, personalised real-time information apps and assistance.

A single contact for all rail systems. You can trust Thales to integrate your hardware and IT systems while minimising the risks of interfacing different suppliers.

Ensure safety and security. Thales ensures the safety and the security of people, infrastructures and goods, addressing both traditional physical security threats and new cyber security concerns.

A more appealing overall experience for passengers with improved availability, increased capacity, and better predictability and punctuality.





Signalling solutions



Our signalling technologies significantly increase the capacity, safety and security of your main line rail network. Benefit from improved energy efficiency and a more fluid and seamless movement of people and freight.

Our wide range of rail signalling solutions can revitalise existing rail networks and ensure greenfield installations start off right. Thales can refurbish your legacy systems, increase the capacity of your passenger and freight networks, and accompany you as you plan and build your future network.

ETCS, the European Train Control System. Thales has equipped 27% of the global market with European Train Control Systems (ETCS), a signalling and command-control train system. We are a leader in both level 1 and level 2 ETCS. Our AlTrac family of ETCS solutions is in commercial operation in more than 20 countries around the world.

Route control systems. Thales LockTrac electronic interlocking systems ensure smooth and safe train movements by managing switches, signals, level crossings and other network elements. From small and simple to large and complex, future-proof LockTrac systems are integrated into existing network structures and offer low total life cycle costs.

Rail traffic management systems. Under pressure to deploy more trains on existing tracks and optimise infrastructure use, you need state-of-the-art traffic management systems. Thales NetTrac ARAMIS (Advanced Railway Automation Management & Information System) is the ideal solution to optimise capacity because it automatically detects conflicts and proposes operational solutions.

Rail field equipment. The Thales FieldTrac family of signalling equipment includes axle counters, point machines, LED signals, automatic warning devices and more.

Main line rail operators in Austria, Bulgaria, Denmark, Germany, Hungary, Luxembourg, Saudi Arabia, Spain, South Korea, Switzerland and a dozen other countries trust Thales signalling solutions.



Communications & Supervision



The only way to truly optimise your costs and ensure security is to have fully integrated systems across your entire network. Thales provides high-performance, reliable solutions with proven interfaces.

Integrated communications and supervision systems enable on-demand trains, just-in-time delivery, optimum security and a very long life for your investments. Thales has a range of solutions, and we also integrate systems from third parties so that everything you operate liaises smoothly.

Advanced assets and traffic management. Thales' integrated Operation Control Centre solutions allow you to optimise infrastructures and network operation, minimising movement conflicts. With a Thales system, many standard tasks are automated during normal operations, so your teams can focus on higher-value missions. In the case of an incident or a crisis, you get valuable decision-making support in real time. Our ARAMIS, intelligent asset network and SCADAsoft solutions are operating in over 30 different transport networks worldwide. Furthermore, Thales can integrate your lighting, ventilation and escalator/elevator systems.

Passenger information and comfort. Offer your travellers an enjoyable and reassuring environment thanks to train and station information, help points and more. The Thales Passenger Information Service software platform manages heterogeneous input sources and coordinates information across multiple channels.

Telecom networks. Every system needs a dedicated telecommunications network. We can supply you with specialised telecom infrastructures, including backbone, optical networks and radio (GSM-R, TETRA, LTE). Thales DigiMax, for example, is an innovative TETRA solution that meets demanding safety requirements.

Passenger and infrastructure security. Our new-generation video solution maximises physical and cyber security in stations, at waysides and on board. Other Thales solutions can detect abnormal behaviour, congestion zones, fire, smoke, intrusion and more.

Only a communications & supervision solution that integrates all of your systems will enable you to optimise life cycle costs and realise constant savings on running costs. The more intelligence you build into your infrastructure, the more effectively it can perform.



Services

By choosing Thales, you get guaranteed access to the expertise you need to keep things running safely, smoothly and efficiently throughout the lifetime of your system.

For more than 30 years, Thales has been a leader in services for main line rail operators. We have a service portfolio tailored to your needs and our network of service experts guarantee help is always close at hand.

Thales provides complete maintenance support to reduce costs, upgrades to boost performance and operation support for smooth running.

Furthermore, Thales has highly innovative service offerings including predictive maintenance and intelligent asset management.

For the entire life of your solutions, you can be confident that Thales will be at your service.

OUR SERVICE OFFER COVERS

- Rail signalling and train control
- Supervision & communications
- Ticketing & fare collection
- Passenger information systems
- Information systems
- Asset management
- Fixed & mobile networks
- Interoperability testing for ETCS
- Access control for sensitive sites



Fare collection

Fare collection services and equipment are essential to reducing fraud while guarantying the safety of your passengers and ensuring security of their financial transactions.

Tested and proven, our fare collection offer covers design, equipment, integration, maintenance and operations.



Ready for tomorrow

Thales is already working on the solutions you will need to successfully face the disruptive challenges of the future.

The most important potential disruption of the future is **digitalisation**, and Thales is ready to support your transition.

Our work with **big data** and **business analytics** will permit you to find new ways to use information about passengers and train journeys to help you deliver more personalised and more customised services.

We are examining the many ways that predictive algorithms, machine learning and the **internet of things** could be used to further reduce your maintenance and operational costs.

We are striving to make it possible to smoothly and securely interface our traffic management systems directly with your IT systems, as well as ensuring that our software systems are fully **cloud-compatible**.

Passengers increasingly want the ability to plan and purchase multi-modal door-to-door journeys: we are working to make that easier to provide and manage.

Choosing Thales is choosing a partner with extensive internal expertise and a wide variety of contacts both within and beyond the rail industry, all committed to helping you succeed.

We are proud to have been a founding member of **Shift2Rail**, a European initiative developing digital innovation and designing the future European rail systems. We will help you make transportation more appealing for both passengers and goods, thereby helping to reduce roadway congestion as well as limit your country's carbon impact.

We are also working on **cyber security solutions** to help prevent hacking and reduce the risks of threats to your passengers, staff and infrastructure.



Rail References

AMERICA

Mexico

EUROPE

Austria
Bosnia-
Herzegovina
Bulgaria
Croatia
Czech
Republic

Denmark
Finland
France
Germany
Greece
Hungary
Italy

Latvia
Luxembourg
Netherlands
Norway
Poland
Portugal
Romania

Slovakia
Slovenia
Spain
Switzerland
Turkey
United
Kingdom

AFRICA

Algeria
Egypt
Morocco
Nigeria
South Africa
Tunisia

MIDDLE EAST

Saudi Arabia

ASIA PACIFIC

Australia
China
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