

GROUND TRANSPORTATION SOLUTIONS

## PARTNERING WITH YOU TO DELIVER THE BEST SYSTEMS INTEGRATION





# We understand your business

A deep commitment to deliver projects and address challenges in an efficient way is what sets Thales apart from other companies.

At Thales Ground Transportation Systems, our most important goal is to help you find the right solutions to drive performance and better serve your users.

We understand your business, your issues and your concerns. We know that you must ensure the comfort and the safety of your passengers every day. We also know you are worried about the impact of technological evolutions on your network in the next decade and beyond.

That is why we are focused on helping you get the most out of your investments and achieve your goals. When you work with Thales, you can count on us. No matter what, we will deliver what we promise.

Our offer covers the full portfolio of technologies for low voltage systems: signalling, communications, supervision and ticketing. Advanced integration functionalities facilitate your operations. You can entrust Thales with the management of all your systems, thereby minimising the risks of implementation.

As part of the Thales Group, we have access to the most innovative cyber-security, banking, satellite and geo-spatial technologies, all at the service of ensuring the comfort, safety, security and efficiency of your transportation network.

With Thales, you will have a true partner with extensive expertise in managing complex transportation projects, committed to helping you succeed.





# Solutions for main line rail

When you need to build a new line you can count on our rail systems specialists to help ensure you have a safe, high performance network, now and in the future.

Thales provides systems to highly demanding regional and national rail networks worldwide. Our solutions enable cross-border operations.

Our customers benefit from improved availability, increased capacity, and better predictability and punctuality, resulting in a more appealing overall experience for passengers, as well as better freight management capabilities.

Our solutions will always be tailored to your specific needs and adapted to your unique situation and the local regulations in your country or region.

## Our complete offer for main line rail includes:

### Signalling systems

- > Train control systems – ETCS standard
- > Route control systems
- > Rail field equipment
- > Rail traffic management systems

- > Thales was **FIRST IN THE WORLD** to put into service lines in the ERTMS standard Levels 1 and 2.
- > Thales has equipped main line rail networks in **38 COUNTRIES** across the globe.

### Supervision and communications systems

- > Communication solutions: backbone and radio (GSM-R)
- > Passenger information and connectivity solutions
- > Security and video surveillance solutions
- > Integrated Operation Control Centres

### Revenue collection systems

- > Interoperable fare collection systems
- > Ticketing inspection and validation equipment



- WORLD'S FIRST CBTC system in revenue operation in Vancouver, 1985
- 20 YEARS of re-signalling projects worldwide
- TWO NATIONWIDE fare collection systems running
- Delivered in the MOST CHALLENGING ENVIRONMENTS



# Solutions for urban mobility

Your users demand reliable, appealing and seamless public transportation. Thales has a portfolio of solutions that will allow you to increase your network capacity, optimise punctuality and attract passengers.

Thales has unmatched experience in ensuring metros, light rail, trams and busses run at peak efficiency with very high reliability and availability.

Compatible with any type of rolling stock, Thales turnkey systems for urban mobility provide you a multimodal solution to optimise your network operation and provide easy journeys for your passengers.

Designed for maintainability, all of our systems offer a very attractive Total Cost of Ownership.

And perhaps most importantly, our excellent record of safety and service continuity speaks for itself.

Contact us to find how to boost the performance of your existing network without disrupting operations.

## Our complete offer for urban mobility includes

### Signalling systems

- Train control systems: attended or driverless
- Route control systems
- Field equipment
- LRT & Tramway management control systems
- Traffic management systems

### Supervision and communications systems

- Communication solutions: backbone and radio
- Passenger information and connectivity solutions
- Security and video surveillance solutions
- SCADA solution for fixed asset and traction power
- Operation Control Centres turn-key solutions

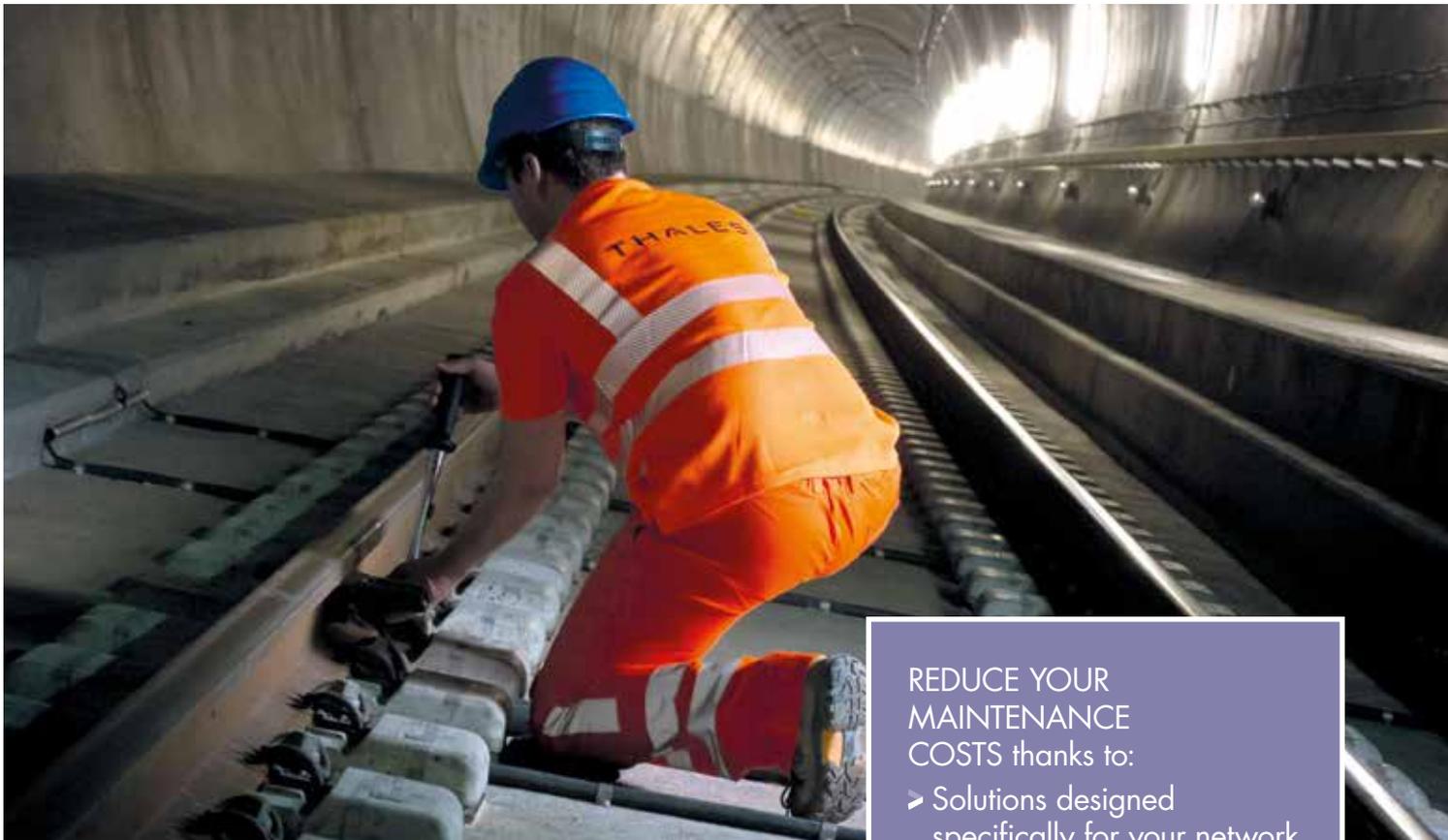
### Revenue collection systems

- Open multimodal fare collection systems
- Innovative ticket validation with contactless bank cards or smartphones
- From field equipment up to cloud-native back-office solutions
- All-inclusive ticketing with road tolls and car park payments



# Lifetime maintenance and support

Expertise, continuous innovation and long-term vision: Thales is at your service with assistance and support throughout the lifetime of your systems, from basic maintenance to the complete design and run of your operation.



- REDUCE YOUR MAINTENANCE COSTS thanks to:
- Solutions designed specifically for your network
  - Full support for any type of system
  - Predictive maintenance
  - Big data analytics

After more than 30 years of serving main line rail and urban transport operators worldwide, Thales has earned its reputation as a trusted and expert partner with a proven ability to support you locally.

With Thales services built into your systems, both your assets and your investment remain optimised. And that's because Thales works with you to optimise and improve services to your asset base.

We can help you boost the efficiency and availability of your systems, control your lifecycle costs, ensure the highest performance from your business-critical systems and enhance your competitiveness so you can take full advantage of every opportunity to better serve your users.

With more than 1,500 men and women in our global network of experts based in service centres in 26 countries, help is always close to you.

#### Our offer for services and support includes:

- Assistance and support across the lifetime of your systems
- Mid-life upgrades
- Network & operations management
- Fare policy management



# 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 experience managing all systems allows us to address issues with a 360° perspective.

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; and to track, anticipate and deliver more value when transporting cargo.

We are investigating how the **internet of things** and predictive analytics could maximise revenues, optimise your operations and investments, and reduce your costs.

We are striving to make possible the smooth and secure interface our traffic management systems with your IT systems, as well as ensuring that our software systems are fully **cloud-compatible**.

We will help you make ground transportation more appealing for both passengers and goods, thereby helping to reduce roadway congestion

as well as limit your country's carbon impact. Thales is proud to have been a founding member of **Shift2Rail**, a European rail initiative driving the search for innovative solutions to the changing transportation needs of today and tomorrow.

As part of the Thales Group, we have access to advanced **cyber security solutions** to help prevent hacking and reduce the risks of threats to your passengers, staff and infrastructure.

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

- 3 BILLION passengers carried annually by Thales SelTrac® CBTC systems
- 85 metro lines over 40 major cities secured by Thales Seltrac® CBTC systems along 2,500 KMS
- 220,000 elements of Thales rail field equipment installed worldwide
- Up to 500,000 control points can be supervised from a single Thales OCC

- ARAMIS Traffic Management System is currently controlling 72,000 KMS of route and 52,000 trains per day in 16 countries of which 4 are total national networks
- Over 50 MILLION ticketing transactions in more than 100 cities are processed daily by Thales

#### THALES IS EQUIPMENT AGNOSTIC

Our solutions work with all rolling stock: Thales is currently powering rolling stock manufactured by Alstom, Ansaldo-Breda, Bombardier, CAF, CNR and CSR of China Railway Rolling Stock Corporation, Kawasaki, Kinki Sharyo, Mitsubishi, Hyundai-Rotem, Siemens, Taiwan Rolling Stock Company (TRSC), Vossloh, Von Roll and more.



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