GROUND TRANSPORTATION

Innovation at the core of global mobility
Ground transportation networks – high speed and main line rail, metros and roads – are vital to maintaining economic prosperity and welfare in an increasingly crowded world.

Urbanisation is fuelling rapid increases in demand for transport. Not just within cities, but between cities and across frontiers as well. To meet growing demand, a number of complex needs must be addressed:

**Respond to globalisation.** Growth in rail freight is outpacing passenger traffic. At the same time, there is a need to optimise road transport and reduce its environmental impact.

**Door-to-door journeys.** Deeper integration between different modes of transport is vital. To make true multimodal travel a reality, passengers need personalised, real-time information – all the way from home to their final destination.

**Deliver sustainable operations.** Escalating cost pressures and carbon reduction targets mean transport operators need to find ways to reduce energy demand and transform business efficiency.

**Enhance infrastructure.** Signalling equipment on many rail networks is now more than 40 years old. Modernisation is needed to increase line capacity and enhance safety, with fast, easy journeys at a lower cost than ever.

**Meet changing expectations.** Personal mobile devices and new fare media are transforming passenger expectations. For operators, these technologies offer the potential to forge stronger customer relationships, with enhanced information, user-friendly payment modes and easier journeys.

Advanced electronic systems – signalling, communications, supervision, security and ticketing – will play a vital part in meeting these challenges. Choosing a trusted and expert technology partner is therefore essential.

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900 million

Cars and light vehicles worldwide by 2015. The number of cars is expected to increase by 35% in the next 10 years.

82%

Projected increase in transport fuel demand by 2050. Technology and policy innovations could limit this increase to just 30%.

1.5 million

Weekly increase in the world’s urban population. By 2050, 60% of people will live in cities.

100

Megacities* by 2050, up from 22 today.

50%

Main line rail traffic growth by 2020.

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* Metropolitan areas with a total population in excess of ten million people.
**Get the most out of your infrastructure**

Thales is committed to providing its customers with technological solutions and services to operate their infrastructure at higher capacities and with ever greater efficiency.

Our innovative and integrated solutions promote the seamless movement of passengers and goods, with faster, safer, smoother journeys and lower costs. These solutions deliver proven business benefits, including significant energy savings and capacity enhancements.

**Signalling**
- Train control systems: Thales’ SelTrac CBTC
- Route control systems: LockTrac
- Rail field equipment: FieldTrac

**Supervision and communications**
- Traffic management systems
- Operation Control Centres
- Supervision of infrastructure and equipment
- Communications including backbone, Wi-Fi and TETRA
- Passenger information and comfort
- Security and video surveillance
- Road traffic management

**Revenue collection**
- Multimodal fare collection
- Contactless ticketing including EMV and NFC mobile
- Business analytics
- Parking
- Road congestion charging
- Clearing house

**Supervision and communications**
- Traffic management systems
- Operation Control Centres
- Supervision of infrastructure and equipment
- Communications including backbone, Wi-Fi and GSM-R
- Passenger information and comfort
- Security and video surveillance
- Supervision systems
- Road traffic management

**NATIONAL AND INTERNATIONAL TRANSPORTATION**

Meeting the demand for long distance rail and road travel with advanced automation.

**Signalling**
- Train control systems: Thales’ AlTrac ETCS
- Route control systems: LockTrac
- Rail field equipment: FieldTrac

**Supervision and communications**
- Rail traffic management systems: NetTrac ARAMIS
- Communications including backbone, Wi-Fi and GSM-R
- Passenger information and comfort
- Security and video surveillance
- Supervision systems
- Road traffic management

**Revenue collection**
- Interoperable fare collection including countrywide systems
- Free flow and road tolling
- Road congestion charging
- Parking: Wilix
- Clearing house

**SAFETY & SECURITY EXPERTISE**
Our leadership in the security domain means we have a unique ability to deliver products and solutions with in-built resilience, guaranteeing the safety of operations and the security of people, data and financial transactions.

**SERVICES & SUPPORT**
From systems design consultancy to through-life support, maintenance, operator training and business analytics, our services capability ensures optimal operation of the systems we provide — now and for years to come.

**GLOBAL LEADERSHIP POSITIONS**

N° 1 in signalling systems
N° 1 in ETCS (European Train Control System) for main line rail
N° 1 in CBTC (Communications-Based Train Control) for urban rail
N° 1 worldwide in integrated communication and supervision systems
Only provider of nationwide multi-operator and multi-modal fare collection systems
Easier journeys

- Lötschberg and Gotthard Base Tunnels, Switzerland
  Thales’ ETCS Level 2 solution is in operation for the Lötschberg Base Tunnel and is currently being implemented for the new Gotthard rail tunnel – the world’s largest.

- Denmark nationwide re-signalling
  Thales is deploying ETCS Level 2 on 1,200km (60%) of the Danish rail network. This is the first time an entire national network is being modernised with the ETCS system.

- Spain’s high-speed rail network
  Thales’ ETCS signalling and telecoms are deployed on 70% of Europe’s biggest high-speed network. Thales also provides comprehensive maintenance services.

- North-South Railway (NSR), Saudi Arabia
  A turnkey solution for signalling, supervision and communications, security, fare collection systems and associated services. NSR is the world’s largest single implementation of ERTMS for a new network.

- Shanghai Metro, China
  Thales’ SelTrac® CBTC signalling provides smoother journeys for 1.6 million passengers every day on five key Shanghai Metro routes.

- Beijing Metro, China
  Deployment of SelTrac® CBTC train control and LOCKTRAC® PVI interlocking for high performance operations and optimised life cycle cost. Thales’ signalling is also used on the Guangzhou and Wuhan metros.

- London Underground
  Thales adapted its SelTrac® CBTC to the needs of the UK’s century-old underground network, with deployment on the Jubilee Line in time for the London 2012 Olympic Games.

- Mecca Metro, Saudi Arabia
  The Al Mashaer Al Mugaddassah metro provides easier journeys for millions of Hajj pilgrims. Thales delivered its driverless SelTrac® CBTC solution, supervision, communication and security systems for the metro in just 18 months.

- Netherlands nationwide e-ticketing
  Travellers in the Netherlands can journey to anywhere in the country – on any mode of transport – using a single smart card. This nationwide scheme is the world’s first.

- Ecomouv, France
  As a member of the Ecomouv consortium, Thales is deploying an EU-compliant heavy goods vehicle eco-tax collection and control system throughout France.

- Brisbane free flow tolling
  Thales’ electronic non-stop tolling guarantees revenues and improves travel times, with lower emissions and fewer accidents.

Why Thales?

- A trusted partner
  Unique ability to deliver large and complex schemes. Thales always stays with the customer, no matter how challenging the project.

- Technology focus
  As dedicated transport systems specialists, we focus exclusively on mission-critical electronic solutions. Thales has an unparalleled ability to support third-party systems and products, including rolling stock from any manufacturer.

- Complete portfolio
  No other company in the world offers such an extensive portfolio of advanced electronic solutions for ground transportation: signalling, supervision, communications, passenger information, security, fare collection systems and services.

- First for integration
  Our ability to deliver fully-integrated solutions that incorporate all mission-critical electronic systems is unique in the market.

- Proven innovation
  Ability to introduce game changing technologies and innovations that rapidly become established as industry benchmarks. Thales Group files patents on 350 new inventions each year, contributing to an intellectual property portfolio that includes 12,000 patents.

- Continuous improvement
  Exceeding customer expectations with new functionalities that deliver measurable benefits, such as energy savings and capacity gains.

- At your service
  Through-life services including maintenance, upgrades and operations outsourcing to optimise system performance.

- Expert delivery
  Operations in 56 countries with 7,000 specialists and a network of competence centres and integration centres throughout the world.

- Global synergies
  As part of the Thales Group, we draw on best practice and expertise from our aerospace, security and defence domains, with access to extra skills and know-how.