

ALTEN YOUR ENGINEERING PARTNER FOR RAIL & MOBILITY SOLUTIONS

TOWARDS CONNECTED & INNOVATIVE TRANSPORTS



ALTEN

ALTEN • WORLDWIDE LEADER IN ENGINEERING & IT SERVICES



Over 30 years
of experience



More than **45 000**
employees



Worldwide Presence
in **30 countries**

ALTEN IN RAIL

ALTEN delivers rail & mobility services in more than 20 countries supported by 1,050 engineers & generated a turnover exceeding 92,9 million euros (2021).

Our operating models:

- Engineering Services
- Engineering Outsourcing
- Offshore engineering services

OUR MAIN ACTIVITIES



STUDY & DESIGN

- Mechanical design & electrical study
- System engineering/ RAMS study
- Development of embedded software
- Application development / IT Support
- System Integration & Validation



CUSTOMER SERVICES – SLI

- Maintenance services
- Training
- Technical documentation



PROJECT MANAGEMENT

- Program/project delivery support
- Costing/Planning
- Risk management



PRODUCTION & METHODS

- Industrialisation
- Support for Production activities & Operations
- Qualification process
- Conducting operations
- Tests & entry into service



LOGISTICS & SUPPLY CHAIN

- Performance & Monitoring of suppliers
- Procurement management
- Management of logistics flowstics flows



New Generation Rolling Stock: carrying more passengers, more reliable, faster, more comfortable, all while using less energy.

To ensure the new generation meets these expectations, we support our clients throughout the **V cycle** from design to validation & commissioning, & then throughout manufacturing (*manufacturing methods, quality, supply chain*).

We help **train manufacturers** to develop new platforms & train operators in their heavy maintenance & refurbishment programs.



Automation, increased frequency of trains, safety, real-time positioning & supervision: digitalization is revolutionizing the reliability & flexibility of traffic management.

ALTEN ensures **industrial suppliers** can develop & update their signalling products.

ALTEN carries out specific projects both for **suppliers & infrastructure managers**, adapting products to specific contexts on diverse domains such as software, hardware or network & telecoms.

AREAS OF EXPERTISES

Interiors & bodyshell

Train architecture & subsystems - TCMS

Power modules & braking systems

Tests, validation & commissioning

Manufacturing, supply chain & quality

Train maintenance & overhaul

AREAS OF EXPERTISES

On board units

Human Machine Interface

Trackside

Supervision

Interlocking



INFRASTRUCTURE

Urbanization & demographic growth have led the transport authorities to increase the creation & modernization of transport networks.

Project management: ALTEN is an essential partner managing complex infrastructure projects (*railways, train stations, depots...*).

Studies: ALTEN also lead study phases in diverse technical domains.

Digitalization: ALTEN will continue driving the sector's digitalization & help infrastructure managers to optimize asset use through technological breakthroughs (*IoT, predictive maintenance & other data driven technologies*).

AREAS OF EXPERTISES

Telecoms & low voltage

Civil engineering & tracks

Power & electrification

Project engineering

Digital, IoT



CUSTOMER EXPERIENCE & DIGITAL

Through **Digital Transformation**, the mobility sector is moving towards a global shift in its value chain to increase the mobility of users & offer a tailor-made travel experience.

Aware of these major changes, ALTEN **supports operators, transport authorities & suppliers** as they implement digital technologies (*Big data, Cloud computing, Cybersecurity, IoT, API, etc.*) ALTEN assists these customers in developing new features & interfaces (*MaaS, trip planning, online ticketing, Chatbot, Phygital, etc.*).

AREAS OF EXPERTISES

Telecoms (4G,5G)

Mobile application & embedded services

Real time passenger information systems

Ticketing & retail

Data analysis & governance

Cloud & Infrastructure

OUR SPECIALIZED SOLUTIONS FOR RAIL



Infrastructure



ILS, RAMS, Training



Data analysis



Project management

OUR MAIN CUSTOMERS

ALSTOM

HITACHI

RATP

SIEMENS

SNCF

Learn more about our offer



You want to know more about our capabilities, contact us:

 rail@alten.com



HOW TECHNOLOGY & INNOVATION SHAPES THE FUTURE OF TRANSPORTATION?

ALTEN VISION OF RAIL SECTOR

Transport sector investments showed a strong resilience during the Covid-19 crisis, demonstrating that it is an essential service. Long-term impact on **mobility habits & railway industry** is still uncertain, nevertheless urbanization will still grow at global level. Some of the changes brought by these developments include increasing saturation of all transport networks & facilities. **Public transportation solutions** are often seen as the most credible options to face these challenges, particularly when considering environmental issues.



GOING GREEN & SUSTAINABLE

The rail sector will continue being a **dynamic market**, driven by the necessity to replace existing old equipment but also to build new fleets & networks to support the development of new green transport offers. On top of this, **consumers' environmental & societal** concerns & habits will positively impact rail transport with the development of night trains & high-speed trains investments for main-land travels.

In urban areas, metros & other public transport services should continue to grow & slowly replace travel in individual cars in major metropolises.

To achieve this shift certain conditions must be met; rail must be **competitive & useful** for both transport authorities & final customers.



BOOST THE ATTRACTIVENESS OF RAIL



Punctuality | Reliability | Comfort | Ability to have a useful & competitive travel time | Reduce perception of high prices | Convenient door to door travels | Integration of rail in Mobility hub

CHOOSING A STRONG ENGINEERING PARTNER TO SUPPORT YOU



In this quest for competitiveness & quality, ALTEN, as major engineering supplier of the sector, has a key role to play together with infrastructure managers, transport authorities, transport operators & industrial suppliers of railway systems.

ALTEN is proactive in developing the rail industry & is heavily involved in innovative projects across **four different domains**:

Rolling Stock

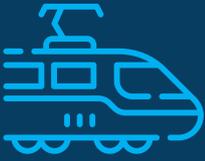
Signalling & Systems

Infrastructure

Customer experience & Digital



ALTEN



INNOVATE IN ROLLING STOCK

The public transport offer will increase in the coming years. Liberalization had a positive impact on the European market & this trend will continue with two major passenger market openings (France and Spain).

Environmental constraints & societal pressure will accelerate fleet renewals & improvements leading to a new generation of trains (hydrogen, batteries...). The Asian continent will rely on new lines & new rolling stocks for its mass transit issues.

ALTEN is already involved in innovative projects & is prepared to support its clients to develop the train of tomorrow.



MODERNIZE THE INFRASTRUCTURES

The infrastructure sector will continue being dynamic in the coming years. In Asia this will mostly concern new metro & main line projects. In Europe, the market will continue focusing on improvement but will also look for new business models to finance construction and maintenance of new train lines, all within the current context of financial constraints.

On top of this, the new rolling stock will require constant adaptation of the infrastructure & empowerment of electrification systems.

ALTEN will keep accompanying its clients in their new projects & will remain a key partner to wisely modernize and monitor their assets.



OPTIMIZE SIGNALLING & SYSTEMS

Signalling will be driven by harmonization, interoperability & digitalization efforts in Europe for way-side & onboard systems (ERTMS mostly). Urban signalling (CBTC) will also represent an important potential area of growth, mostly for new-build infrastructure & in Europe for network automation of existing lines.

In the signalling sector ALTEN already supports major clients & keeps up-to-date with new signalling technologies standards. ALTEN will help its clients to offer more trains in fully safe conditions.



IMPROVE & DIGITALIZE THE CUSTOMER EXPERIENCE

Public transport users have increasing access to a range of transport services offering a broader experience. The mobility sector can no longer be addressed mode by mode but needs to be thought as a system with a diversity of modes. New technologies & MaaS solutions enhances traveler experience & public transport attractiveness.

ALTEN is already investigating this field through innovative projects; data driven technologies are key to better understand travelers' habits & switch to a customer centered approach.



ALTEN