



SNCF Group – your global mobility partner

[sncf.com](https://www.sncf.com)

GROUPE 



Jean-Pierre Farandou

Chairman and CEO, SNCF Group

Foreword

SNCF Group is Europe's undisputed champion in high-speed rail. Our total rail network is the world's second densest, and we rank second in mass transit. In short, we're a leader in passenger transport and freight logistics around the globe.

We do business in every area of rail operations and travel, and we're already generating a third of our revenue outside France.

In addition to operating transport networks, SNCF Group offers time-tested know-how in engineering for infrastructure and rolling stock. Our teams are involved in half the world's high-speed rail and metro projects, and 60% of all driverless metro projects.

All of these areas of expertise – and our skill in combining them – are clearly visible in the talents of our 276,000 employees, with a direct presence in over 60 countries and a network connecting 168.

But rail also has three key benefits for the environment: it saves CO₂, it saves energy, and it saves space.

Which makes it essential for decarbonizing the planet, reducing congestion in cities and on motorways, and consuming less green electricity, which is now more costly.

SNCF Group has what it takes to meet the challenge of climate change — rail is a solution.

Every day, all of us are working to make transport more accessible, more convenient and more sustainable. Around the world, the need to move passengers and goods is growing. Markets are more and more globalized, and the digital services we're developing for our customers can benefit people everywhere. For all of these reasons, we're stepping up our growth outside France, aiming to set the gold standard for every area of our business, both at home and around the globe.

In these pages you'll learn more about who we are, what we do and what we can do for you.

With a rare combination of expertise, commitment and flexibility, we have what it takes to help you reach your goals.

Jean Pierre Farandou

LEARN MORE ABOUT SNCF GROUP'S
INTERNATIONAL OPERATIONS



Contents

Who we are

- P. 6 SNCF Group worldwide
- P. 8 Our six core businesses
 - Mass transit
 - High-speed and conventional long-distance transport
 - Freight transport and logistics
 - Network operation and maintenance
 - Stations
 - Real estate

- P. 14 Innovation is our driver
- P. 16 The freedom of mobility for all
- P. 21 Effortless mobility for all
- P. 22 Environment and climate

What we can do for you

Bespoke services

- P. 27 Safety
- P. 28 Station design, development and management
- P. 29 Mass transit
- P. 30 Long-distance rail services

Standalone services

- P. 33 Research and infrastructure engineering
- P. 34 Infrastructure maintenance
- P. 36 Rolling stock engineering and maintenance
- P. 40 Testing, trials and commissioning
- P. 40 Assistant project owner
- P. 42 Modelling transport
- P. 44 Yield management
- P. 45 Developing customer service
- P. 45 Railway security
- P. 46 SNCF Group training



SNCF Group worldwide

SNCF Group is a leader in passenger transport and freight logistics, in France and around the world.



€41.4 bn

in revenue in 2022, **around 40%** from markets outside France



276,000

employees worldwide



with a direct presence in **60+ countries** and a network connecting **168 countries**



15 million

passengers carried daily, in France and around the world, all modes combined

Nearly **€10 bn**

invested in 2022

We focus on 6 core businesses

Mass transit

High-speed and conventional long-distance transport

Freight transport and logistics

Network operation and maintenance

Stations

Real estate



Mass transit

We deliver integrated public transport solutions that promote regional development and meet everyone's needs.

€9bn in revenue and nearly 5m passengers per day for TER regional rail and Transilien services in the Paris Region in 2022.

€6.7bn in revenue and over 3.5bn passengers annually for Keolis in 2022, with nearly 50% on international markets for both figures.

High-speed and conventional long-distance transport

We deliver cost-effective travel solutions — shared and door-to-door — that cater to all passenger needs and budgets, raise the bar for service, and help protect the planet.

€8.5bn in revenue in 2022

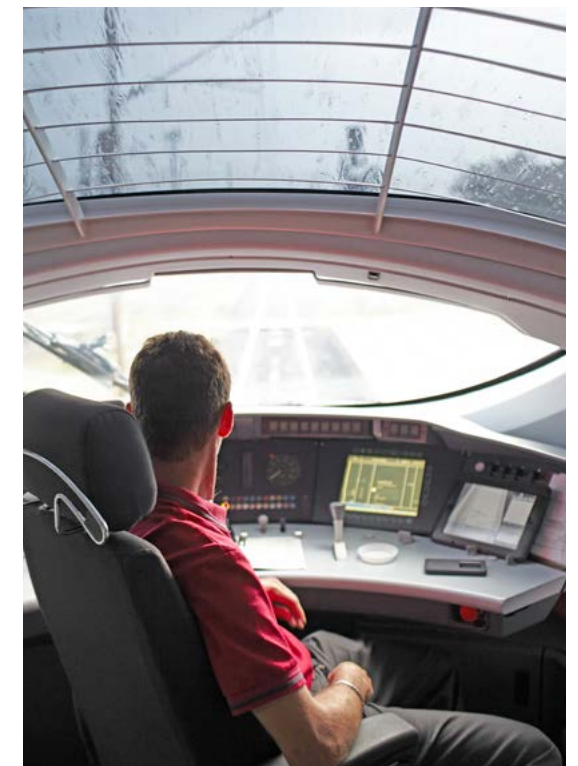
11 high-speed lines covering 2,700 km in France, plus high-speed subsidiaries and alliances elsewhere in Europe:

- United Kingdom — Eurostar, 55% share,
- Belgium — Thalys, 60% share,
- Switzerland — Lyria, 74% share,
- Italy — SNCF Voyages Italia, 100%,
- Germany — DB-SNCF alliance, 50% share.

No.1

operator of driverless metro and light rail systems worldwide

Key players
transilien.com
keolis.com
TER — scan QR code



LEARN MORE ABOUT EUROSTAR



HIGH-SPEED RAIL IN FRANCE



Players involved
Eurostar
TGV Lyria
Thalys
SNCF Group

Freight transport and logistics

Delivering made-to-measure multimodal solutions to customers the world over, combining business performance with environmental protection and safety.

Freight transport and logistics are handled by two SNCF Group businesses: subsidiary Geodis and the Rail Logistics Europe unit.

Rail Logistics Europe provides customized rail and multimodal transport solutions (rail, road, waterways) across the entire supply chain, to clients in Europe and beyond.

It is a major player in decarbonizing freight transport and reducing emissions (generating some €1.4bn a year less than road-based solutions). Key to achieving this is a network that extends throughout western Europe, combining local service, flexibility and savings of scale with four related businesses:

- **Fret SNCF** and the **Captrain Network** manage all aspects of freight transport, from loading wagons to operating freight trains.
- **VIIA** operates innovative rail motorways, with clients loading and unloading semi-trailers directly onto trains.
- **Naviland Cargo** combines rail, road and maritime options to transport client cargos to their destination.
- **Forwardis** operates as a freight forwarder, delivering turnkey solutions and handling all or part of carriers' operations — from wagon rental to liaison with train operators.

Players involved
Geodis
Rail Logistics Europe:
 - Fret SNCF
 - Captrain Network
 - Naviland Cargo
 - Forwardis
 - VIIA



LEARN MORE ABOUT RAIL LOGISTICS EUROPE



Rail Logistics Europe

€1.7 bn

in revenue in 2022

No. 1 rail freight operator in France.

No. 2 rail logistics business in Europe.



Geodis

€13.7 bn

in revenue in 2022, up 20% from 2021 and +68% from 2019

GEODIS — market leader in France, No. 4 in Europe in logistics and No. 6 worldwide for rail freight and logistics.

GEODIS helps clients overcome delivery constraints and optimize logistics in their day-to-day business.

Partnering with users to drive growth across the board, it has built up expertise in all aspects of supply chain management.

- This includes a special focus on 5 areas: supply chain optimization, freight forwarding, contract logistics, and distribution and express deliveries.
- A regional structure gives it global reach, serving all continents with a direct presence in over 60 countries and a network connecting 168.
- Today GEODIS ranks seventh in the world and in Europe in its sector.
- It leads France in distribution and express deliveries.



LEARN MORE ABOUT GEODIS

Upply is an all-digital logistics marketplace, created by GEODIS to reset the fundamentals of the supply chain, pioneer a simpler, more efficient and transparent market, and enable shippers, carriers, consultants and other industry professionals to make pivotal decisions instantly.

Its first set of features, named "Smartscan", provides instant freight quotes for up to 100,000 lines, making comparisons easy, and dispenses automatic data-driven market price and trend alerts.

Upply covers a uniquely wide market: air (worldwide), sea (worldwide) and road (for Europe and the US). This is a marketplace in its own right that matches supply and demand in transport capacity.

Network operation and maintenance

We manage, maintain, modernize, and sell access to the French rail network.

€7.1bn in revenue in 2022.

€5.7 bn
invested in 2022

A 30,000 km-strong network, including 2,700 km of high-speed lines

20,000 train paths delivered daily

15,000 passenger and freight trains running on the French rail network every day

Systra (in partnership with RATP)* The benchmark for transport solutions worldwide. Leading the charge as French railway engineering wins markets around the globe, this top designer of rail and metro transport infrastructures continues to expand on international markets.

Systra provides global engineering services for:

- 50% of the world's high-speed rail projects,
- 50% of all metro projects,
- 60% of all driverless metro projects.

Learn more
systra.com

Learn more
snCF-reseau.com



LEARN MORE ABOUT AREP

* Neither RATP, SNCF Group, nor the French State exercise control or exert predominant influence over the decisions taken by Systra's management, particularly in countries where Keolis and RATP Dev are potential candidates for network operation.

Stations

We provide solutions for maintaining and deriving value from station assets, and boosting regional economic growth.

€1.6bn in revenue in 2022

Over 3,000 stations in France

10m people passing through French stations every day

Through **SNCF Hubs & Connexions**, a subsidiary of **SNCF Gares & Connexions**, we're helping partners rethink how stations are managed around the world — developing retail operations, analyzing crowd flows, and optimizing revenues generated by transport hubs.

SNCF Retail & Connexions manages and leases 180,000 sq metres of retail space in town- and city-centre railway stations, as well as a portfolio of 9,000 billboards throughout France.



AREP, a wholly owned subsidiary of SNCF Gares & Connexions, is an interdisciplinary architecture practice specializing in urban development and spatial planning for resilient cities, low-carbon architecture, and eco-friendly design using the latest generation of digital tools. AREP ranks 25th on the World Architecture 100 list.

AREP is expanding rapidly in China, with offices in Beijing, Shanghai, Shenzhen, Wuhan and Chengdu. Employing 1,000 people representing over 30 nationalities, its success rests on its unparalleled versatility, with expertise spanning civil engineering, design and signage, urban development, management of very high-volume crowd flows, and project management and coordination.

This approach aims to open up stations to the city and make them a source of development for services.

AREP is committed to designing spaces that are respectful of the environment and create sustainable wealth — evolving living spaces, adapted to today's uses and capable of adapting to new needs in the future.

Learn more
gares-sncf.fr
arep.fr



Real estate

SNCF Immobilier is a business partner for SNCF Group operations and an active player in the transformation of towns and cities, providing solutions for managing land and buildings.

8.5 million square metres of buildings managed and optimized

100,000 housing units in France

20,000 hectares of land — twice the size of Paris — managed and optimized

Innovation is our driver

To meet the needs of our clients, passengers and carriers, SNCF Group is developing a range of door-to-door mobility solutions — flexible, safe and varied, designed to give rail travel more appeal. Scientific research and new technologies are two major sources of inspiration, as we work to create a rail system that is efficient, largely decarbonized, and capable of delivering transport options adapted to the needs of large urban areas as well as rural environments.

Three connected programmes driving innovation:

Research4Future

Dedicated to identifying disruptive technologies and spearheading scientific discovery in six main areas (telecoms, AI and modeling, cognitive sciences, cybersecurity, robotics and materials), and developing new skills to prepare for the future.

Research4Future's work feeds into projects led by two **innovation units**:

- Tech4rail
- Tech4mobility



LEARN MORE ABOUT INNOVATION



Tech4Rail

Defining the rail system of the future — autonomous, more cost-competitive and low-carbon. And developing and testing major prototypes for this transformation, from autonomous trains to hybrid, hydrogen and battery-powered trains, to innovative light rail options and more.



Tech4Mobility

Fostering and testing innovative solutions for collective mobility (Draisys, Flexys, etc.) to meet regional needs and new applications.



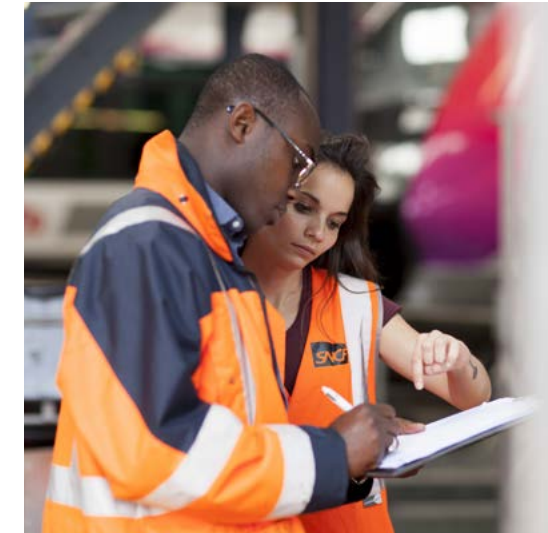


The freedom of mobility for all

Mobility gives people the freedom to work, study, travel and live life to the fullest. It brings individuals and communities together. Through our multimodal model — spanning rail and beyond — we're developing mobility solutions for one and all.

Safety — our #1 priority

SNCF Group is known around the world for its leadership on safety. But we launched a new Group-wide safety policy in 2015 because we want to be even better.



TERRALPHA

TERRALPHA, the new SNCF Réseau subsidiary, aims to make the most of the surplus fibre capacity available through strategic partnerships, using this to help reduce the digital divide in France.

The aim is to offer:

- a premium service carrying data to players in telecoms and digital technologies.
- datacenter links operating at 10 to 100 gigabytes per second.

Network upgrades for tomorrow's rail system

We're boosting capacity across our network to bring passengers even greater freedom of mobility. By upgrading our existing train operation and signalling systems, we'll be able to carry more trains on the same network:

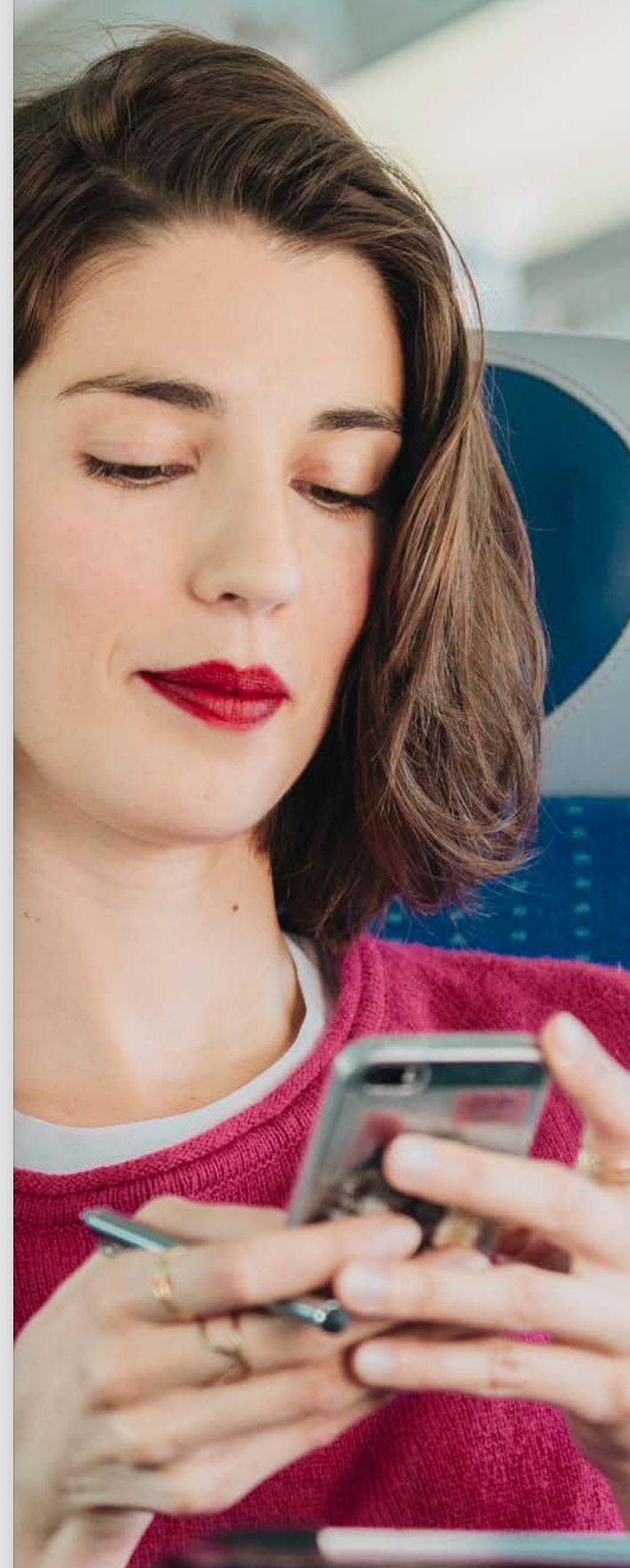
- in 2024 we'll be launching NExTEO, a new train operation system that combines automatic train protection (ATP), automatic train operation (ATO) and automatic train supervision (ATS+) technologies. With this system, hourly capacity on the stretch of our RER E line crossing central Paris will rise from 16 to 22 trains — travelling at 120 km/h.
- we're also deploying Level 2 European Rail Traffic Management System (ERTMS) technology on our Paris-Lyon high-speed line, raising capacity from 13 to 16 trains an hour.

Over the next ten years, we plan to expand network traffic capacity by 25%, measured in passenger-kilometres.

- secure links with possible recovery times of under 50 milliseconds.
- digital tiles that can host and power regional mini-datacenters.
- regional hosting services that can be harnessed for railways or audio-video security.



LEARN MORE
ABOUT TERRALPHA



Mass transit

Upgrading our network is a priority. And SNCF Réseau has been working hard for several years to renovate the rail infrastructure it manages.

By the end of the year, 80% of trainsets were new or renovated under a sweeping €10bn investment programme.

3.5_m

passengers carried each day in the Paris Region

LEARN MORE ABOUT SNCF TRANSILIEN IN GREATER PARIS



Long-distance rail — more speed, more choice

OUIGO, offering basic high-speed service at unbeatable fares, is central to SNCF Group's bid to win new customers in France and Spain — along with conventional service at budget prices in France (see p.30 and 31).



TGV INOUI, our premium high-speed service, delivers comfort, on-board connectivity and outstanding customer care and comfort (see p.30).



Intercités, our conventional long-distance rail service, rounds out our high-speed offer throughout France, and now includes night trains as well (see p. 31).





Effortless mobility for all

If we want customers to embrace sustainable travel, it can't just be greener. It has to be effortless, too. That's why we're using technology to bring all our products and services together in one place.



Mobility as a service

At SNCF we know that intermodality is a priority for customers, and we're putting them first by harnessing the power of digital technology to make it easier and more convenient to travel sustainably on our network and beyond. **SNCF Connect** is a real "assistant" that helps facilitate travel at every stage — purchasing and exchanging tickets, identifying optimum door-to-door itineraries, consulting service updates and notices in real time, and buying or renewing regional cards and travel passes.

Driverless shuttles and trains

At SNCF, we're forging alliances to build the driverless vehicles of the future, as we look to bring more frequent, more flexible and more affordable door-to-door mobility to all. For instance, Keolis is working with its local partner to develop Navly, a driverless electric shuttle, and we're planning to launch the first driverless train prototype in 2023.



LEARN MORE ABOUT
OUR DRIVERLESS TRAIN

Environment and climate

Travelling by train generates up to 50 times less pollution than making the same journey by car. At SNCF Group, we believe that rail is the backbone of sustainable mobility and the key to combining effortless travel with a healthy planet.

Validation and certification tests for the Régiolis Hybrid are currently under way before it enters commercial service for a one-year trial in 2023.

2023



Hybrid train

Our hybrid train combines a diesel engine and catenary power with batteries that recover, store and recycle energy from regenerative braking. The technology can be installed in existing trainsets and requires only minor adjustments to infrastructure and operational rules.

Hydrogen-powered train

These trains run on so-called “clean” hydrogen made from water electrolysis. They produce no CO₂, NOx or particulate emissions, and have a similar range to conventional diesel-powered trains. What’s more, local urban transport operators can share the costs of hydrogen production and refuelling facilities.

We plan to have our first prototypes ready in early 2022.

Lean electrification

Our selective approach to electrification means that we’re only installing overhead wires on the segments of our network where it’s easiest and most cost-effective. We’re also exploring ways to cut costs over the whole life cycle of our infrastructure, from design and installation to operation and maintenance.

And we’ll maintain that infrastructure focus in the future, by switching from catenary-diesel to catenary- and battery-powered hybrid locomotives as we look to keep our environmental footprint as small and green as we can.

Circular economy and responsible procurement

At SNCF, we’re embracing eco-design principles ever faster across our operations — not least at SNCF Réseau, where we’re recovering and reusing more dismantled track and other equipment. We’ve also included sustainability criteria in our tender specifications, and we routinely assess our suppliers’ CSR performance.

Sustainable spatial planning

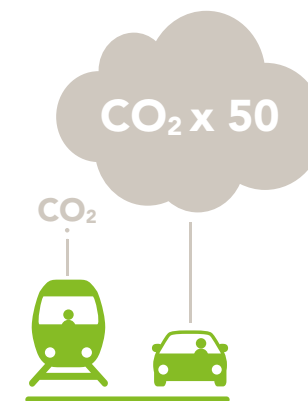
Through SNCF Immobilier, we’re using social innovation to build sustainably, reshape our cities and make a real difference to people’s lives. This includes bringing communities together by building intergenerational housing and erecting future-ready reversible and modular homes.

Social engagement

Our social engagement policy is shaped by four priorities: provide sustainable mobility for passengers and freight, shrink our environmental footprint, put people first, and bring communities together and promote regional growth. Through our SNCF Foundation, we’re supporting education, culture and community outreach projects that help us deliver on our commitments.



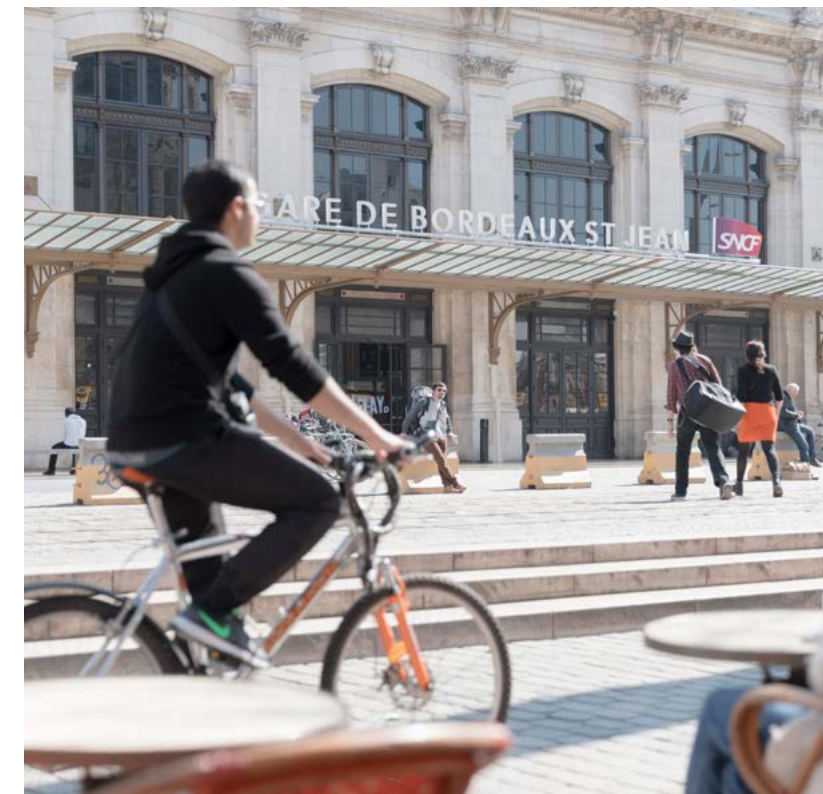
LEARN MORE ABOUT SNCF IMMOBILIER



Travelling by train generates up to 50 times less pollution than making the same journey alone in your car.



LEARN MORE ABOUT SNCF'S CSR REPORT



Certified to demanding standards

SNCF Group's Corporate Social Responsibility (CSR) policy ranks us 1st in the "Tourism and Travel" sector, and 5th worldwide, all sectors combined.

SNCF Group's CSR efforts and strategy have been recognized by Moody's ESG (formerly Vigeo Eiris), which upgraded the Group's extra-financial rating to 77/100 in 2022 (up 3 points from 2021). This performance puts SNCF Group among the world's top-rated companies, all business sectors combined. EcoVadis rated SNCF Group 79/100, up 2 points from 2021, placing the Group in the top 1% of companies in rail transport.



We've rolled out Environmental Management Systems (EMS) in all entities where risk is present. This includes:

- ISO 14001 certification for our rolling stock and industrial maintenance depots, and for infrastructure-related industrial facilities.
- ISO 14001 certification or equivalent (BREEAM In-Use) for major rail stations.
- purpose-designed EMS for other entities that our business lines have identified as presenting scope for risk.



Bespoke services

From design to operation

Drawing on our long experience in passenger and freight transport, SNCF Group can develop and execute all of your complex projects, from logistics to long-distance rail, mass transit, and station creation and operation.

Safety related services



As recognized experts in rail safety, SNCF Group can help at any stage of your project — whether you're designing a new network or operating an existing one. More specifically, we can:

- analyse existing structures and recommend improvements,
- design a safety management system,
- deliver essential training in railway operation basics,
- set up the processes and draft the safety documents and procedures you need to secure authorizations to operate rolling stock and/or infrastructure.

Why should you choose SNCF Group for your safety needs?

- because we know key rail technologies inside out, and we understand how they've evolved over time,
- because we recognize that human and organizational factors are critically important,
- because we study adverse events to identify where processes need to be improved to minimize safety risk,
- because of Prisme, our tried and tested in-house safety programme.



LEARN MORE ABOUT RAIL SAFETY MANAGEMENT WITH SNCF

Station design, development and management

In its role as a station operator, service provider and asset manager, SNCF Group:

- manages **15,000** departures from over **3,000** multimodal hubs used by **10m** passengers each and every day,
- designs and operates efficient, attractive stations and puts station spaces to work for the cities and regions they serve,
- is transforming stations into appealing, exciting destinations in their own right.

Our wealth of experience means we understand stations in all their facets, from financial engineering and retail development through to project and facility management. We believe that stations should make life easier—for users and operators alike—and work hard to achieve that.

AREP

AREP has made a name for itself as a leader in station design and renovation, harnessing cutting-edge expertise to create hubs that are open to the surrounding city and promote growth in commerce and services. More generally, the company takes on projects that create lasting benefits for the local economy, help preserve the planet, and adapt to changing user needs and habits — both now and in the future.

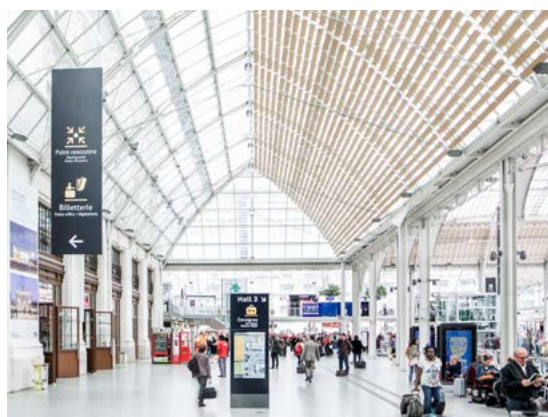
Working with SNCF Hubs & Connexions, AREP has developed comprehensive expertise in architecture, urban development, design, engineering, programming and crowd flow. The firm's holistic vision of station and station-surround design gives it a unique capability to manage complex projects and turn transport hubs into the heart and soul of the communities they serve.



Through SNCF Hubs & Connexions, a subsidiary of SNCF Gares & Connexions, we're helping our partners rethink how stations are designed, developed and managed around the world.

We're experts in:

- planning store locations to achieve the best fit for passenger/pedestrian flow, assessing each station's commercial potential according to the same metric,
- assessing each station's commercial potential according to the same metric,
- launching and managing tenders,
- managing building and fit-out work,
- handling facility management issues,
- managing spaces at transport hubs.



LEARN MORE ABOUT SNCF HUBS & CONNEXIONS



Mass transit

KEOLIS

Our track record speaks for itself: SNCF Group operates the Paris Region's mass transit system, second only to Tokyo's by ridership, and our subsidiary Keolis designs and operates multimodal public transport networks around the globe.

As the world's leading light rail and automated metro specialist, Keolis carries more than 3.4bn passengers a year in 14 countries on four continents, operating and maintaining a dozen transport modes for some 300 transport organizing authorities.



From Boston to Bordeaux, Melbourne to Manchester, and Stockholm to Shanghai, our *Thinking Like a Passenger* programme helps us meet passenger and TOA expectations and needs, delivering an integrated network that combines human and digital solutions tailored to each region.

Drawing on the experience, engagement and responsiveness of Keolis and the entire SNCF Group, we've set up our Mass Transit Academy to equip our own employees — and yours — with the professional skills they need to develop and operate mass transit systems in large cities. Courses cover both infrastructure and rolling stock.



LEARN MORE ABOUT KEOLIS

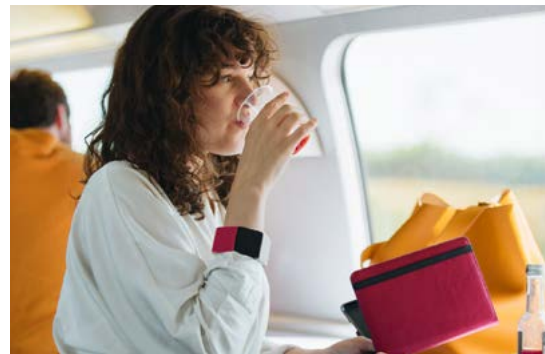


ABOUT SNCF'S MASS TRANSIT

Long-distance rail services

High-speed (300-320 km/h) and classic (200-220 km/h) long-distance rail services: more speed, more choice.

To encourage travellers to make rail their first choice — and promote green mobility — SNCF Voyageurs provides key information on what is at stake. Opting for trains rather than cars helps reduce CO₂ emissions.



OUIGO — HIGH-SPEED RAIL

With OUIGO, SNCF Voyageurs **offers high-speed travel at unbeatable prices in France and — now — in Spain.**

OUIGO

- already accounts for **25%** of all high-speed rail journeys in France each year,
- serves **41** destinations in France,
- offers **all-digital** tickets via phone app.



DISCOVER
OUIGO HIGH-
SPEED RAIL



In the past 4 decades, TGV INOUI trains have carried millions of passengers each year.

For business travel, personal travel and leisure, they serve no fewer than 230 towns and cities in France and across Europe.

As our premium high-speed service, TGV INOUI delivers comfort, on-board connectivity and outstanding customer care.



DISCOVER
TGV INOUI



Intercites range of services, includes day and night travel on conventional lines.



OUIGO has expanded its budget offering by adding new Ouigo Train Classique service to the mix. These conventional trains deliver 2nd-class travel at budget prices year round, serving 14 cities — including many stations in Greater Paris. Passengers travel aboard Corail carriages renovated and re-branded in OUIGO's distinctive fuchsia and blue livery.



DISCOVER
INTERCITÉS

NIGHT TRAINS

Night trains serving 6 destinations in France aboard carriages renovated in our maintenance depots. Budget-conscious passengers save a night's hotel and take full advantage of their day once at their destination.



DISCOVER
INTERCITÉS NIGHT
TRAINS



DISCOVER
NIGHTJET

SNCF Group has signed an agreement with rail operators in Germany, Austria and Switzerland to re-introduce night trains across Europe, including NightJet service between Paris and Vienna.

SNCF Group's broad-based expertise makes us the partner of choice for all long-distance rail travel. And because France's rail network is so densely packed, we've become specialists in combining the competing demands of urban, suburban and long-distance services, especially for door-to-door mobility solutions.



Systra*—a world leader in transport infrastructure design

Systra's specialists plan, design, supervise, test, commission, deliver and maintain mass transit and mobility solutions in 80 countries around the globe. Over the past 60 years, the company has built up a store of expertise that spans all areas of transport, from project management to system integration. Its engineers have played a key role in half of the world's high-speed rail and metro projects, and in 60% of driverless metro systems around the world.

systra.com

* Neither RATP, SNCF Group, nor the French State exercise control or exert predominant influence over the decisions taken by Systra's management, particularly in countries where Keolis and RATP Dev are potential candidates for network operation.

Standalone services

Expertise across the entire service chain

If you need highly specialized expertise, SNCF Group's engineers can deliver solutions in a wide range of areas, from design & build to operation and maintenance of infrastructure and rolling stock. But also project management and assistance, traffic projections and development of transport plans, yield management, customer service, safety and training.

Research and infrastructure engineering



At SNCF Réseau, we design and maintain every part of our infrastructure, using a systems approach to keep France's rail network running smoothly and efficiently. Our engineers:

- design, monitor and maintain train operation and signalling systems,
- are well-versed in high-speed rail design and maintenance standards, designing track and line-side equipment and conducting post-incident reviews,
- design, maintain and monitor non-standard structural works,
- design the SNCF catenary, and conduct post-incident reviews and inspections.



LEARN MORE ABOUT OUR CATENARY SOLUTIONS

Infrastructure maintenance



At SNCF Réseau, we keep the French network safe, operational and profitable by:

- drafting and reviewing corrective, scheduled, condition-based and predictive maintenance policies for every part of our conventional and high-speed network,
- using Artificial Intelligence (AI) to analyse and process infrastructure measurement data,
- modelling upgrade and ageing rules for our systems and components, so we know our predictive maintenance policies are based on reliable data.

We use the latest technologies to measure and predict the health of our network, so we can refine our maintenance policies and practices accordingly. Those technologies allow us to:

- measure track geometry and inspect signal boxes and catenaries without disrupting commercial service,
- inspect GSM-R signalling systems at 140km/h
- check network health using sensors fitted to commercial high-speed trains,
- use drones to inspect catenaries and structural works, and process the data they collect.

These services are performed by SNCF Réseau, and by our Eurailscout and Altametris subsidiaries.

Because safety comes first, our SFERIS subsidiary has devised a range of solutions to keep our engineers safe as they maintain and upgrade our network while trains are running.



LEARN MORE ABOUT
THE IRIS 320 TRAINSET



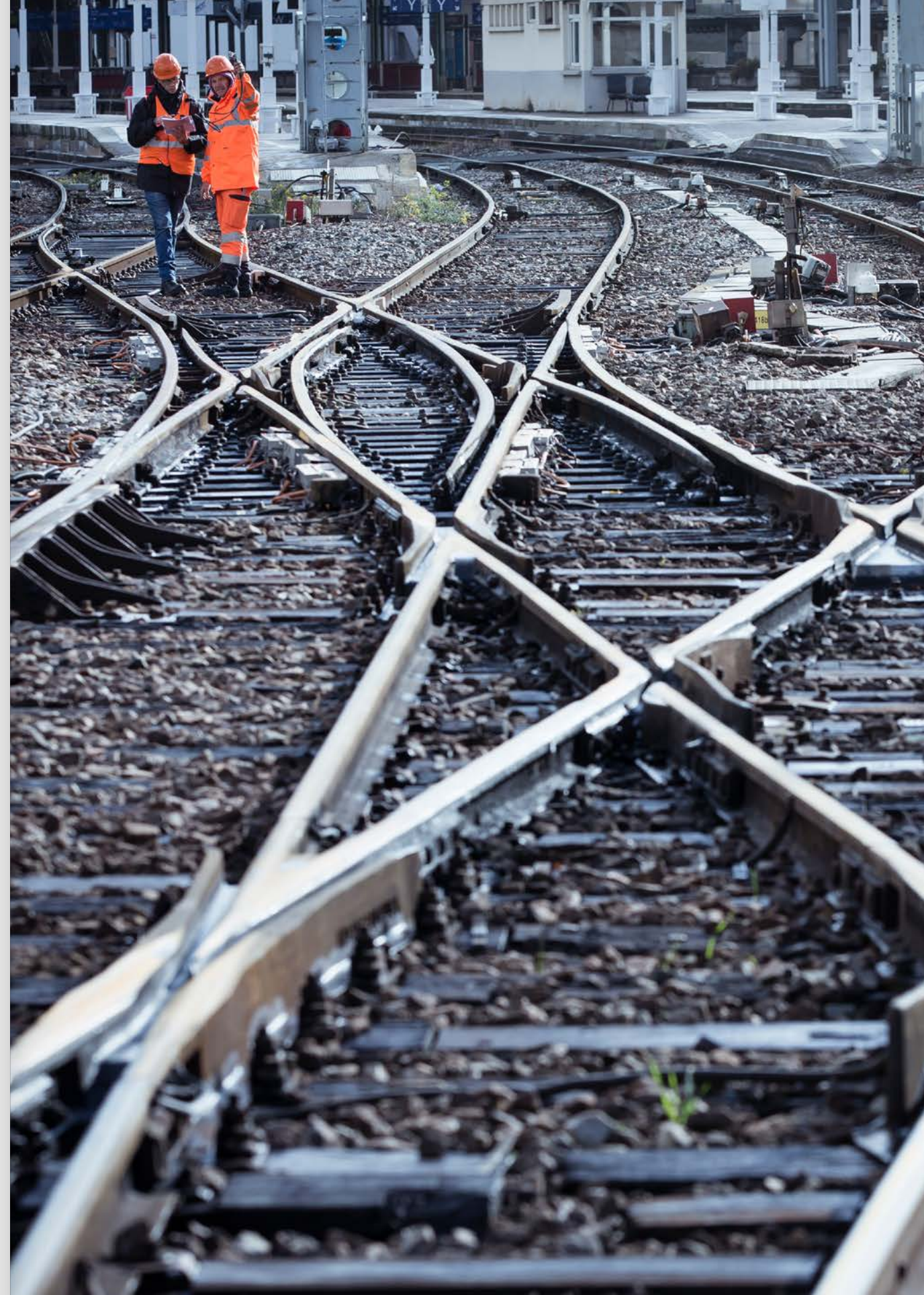
DISCOVER ALTAMETRIS



DISCOVER SFERIS



DISCOVER
EURAILSCOUT



Rolling stock engineering and maintenance



We have extensive experience in specifying operator requirements, setting maintenance rules, analysing performance, and conducting every conceivable kind of test. We're experts in rolling stock:

- safety
- reliability
- maintenance
- interoperability
- comfort.

MASTERIS works with over

180

rail industry players in France and around the world

MASTERIS keeps rolling stock in peak condition

A wholly-owned SNCF Group subsidiary, MASTERIS helps customers address maintenance issues throughout the life of their rolling stock, from upgrades, refurbishing and repairs to commissioning and certification.

Its expertise covers nearly 90 rail specialities, offering all clients made-to-measure service that improves equipment by drawing on the SNCF rolling stock division's know-how and experience.

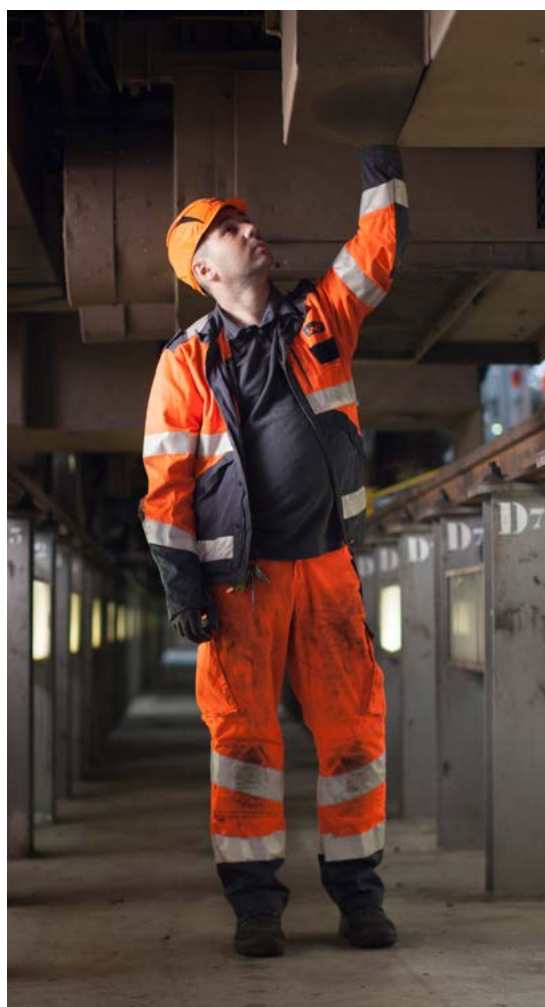


LEARN MORE ABOUT MASTERIS

LEARN MORE ABOUT ROLLING STOCK MAINTENANCE



ROLLING STOCK ENGINEERING CATALOGUE AT A GLANCE



SNCF Technicentres — the factories of the future

At our 35 maintenance depots across France, engineers maintain 17,000 rolling stock units spanning every part of our operations, from mass transit (Transilien and TER regional trains) and long-distance services (Intercités and high-speed rail), to logistics and maintenance of the French network. We are constantly adapting our maintenance policies and practices to make sure our rolling stock is safe, comfortable and ready when it's needed. This includes:

- deploying mobile maintenance teams,
- introducing new digital tools, using more remote telediagnosics technology and smart devices,
- rolling out operational excellence standards,
- handling large-scale upgrades and refurbishments.

We take each trainset apart after it's been in service for 15-20 years, inspect the components, and refurbish or replace them to give our rolling stock a new lease of life.

Thanks to this refurbishment and upgrade policy, our rolling stock stays at the cutting edge of technology and in tune with the times — and we deliver safer, smoother mobility for all. And each time, we retrofit new design features and technologies developed by our engineering teams — making our trains easier for disabled passengers to access, installing on-board WiFi and passenger information systems, or revamping carriage interiors.



LEARN MORE ABOUT OUR ROLLING STOCK DIVISION



LEARN MORE ABOUT PREDICTIVE MAINTENANCE



Partnering to produce the train of the future

At SNCF group we meet customers' current requirements but also consider how their needs will evolve in years to come. And we're innovating and rethinking rolling stock design to build the trains of the future. In 2016, for instance, we teamed up with Alstom to design a greener, more cost-efficient high-speed train that will be introduced into circulation in France by 2024.

Our new TGV M model:

- is 97% recyclable
- runs on 20% less energy



LEARN MORE ABOUT THE HS TRAIN OF THE FUTURE



Rolling stock engineering

With 1,700 engineers and technicians, the rolling stock engineering team is hard at work improving trains' operational performance through a system-based approach that ensures full control of all interfaces. Thanks to digital technologies — big data and the Internet of Things — and innovative methods, SNCF Group is involved in every stage of its rolling stock's life cycle:

- R&D and engineering studies,
- pre-purchase specifications,
- performance and other tests,
- predictive maintenance,
- parts replacement,
- regeneration and upgrades,
- on average, 15 patents filed annually.



ROLLING STOCK ENGINEERING AT A GLANCE



Testing, trials and commissioning

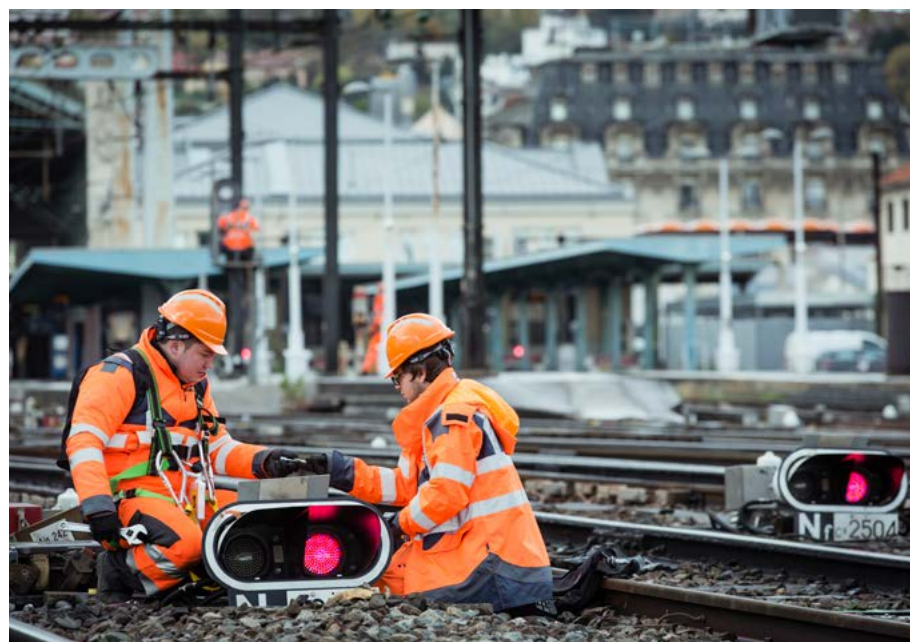
We handle testing and commissioning of all railway components — infrastructure, rolling stock and equipment.



Eurailtest is an Economic Interest Grouping (EIG) founded by SNCF Group and RATP to market their combined expertise in testing heavy and urban light rail systems and sub-systems.

It offers two kinds of service:

- Type approval and qualification for rolling stock and infrastructure. Eurailtest's specialists can guide clients through the complex, demanding regulatory process — selecting and performing tests, compiling relevant documentation, providing expert opinions, and securing type approval for their equipment or rolling stock.
- Metrics, consultancy and expert analysis. Eurailtest's expertise spans mechanics, electrics, physics-chemistry, acoustics, and health, safety and the environment.



Assistant project owner (apo)

SHADOW OPERATOR SERVICES

We oversee and advise on infrastructure development and management, as well as on "rail operator" aspects of complex conventional and high-speed projects.

Over the past 40 years, SNCF Group has pioneered high-speed rail in France, opening a total of 11 lines. And we've been operating rail services across every segment of the market for more than 80 years. Our deep understanding of the rail system, coupled with our holistic approach, makes us the natural choice for managing complex rail projects. Example: we formed a public-private partnership with two well-established private infrastructure management firms to build two LGV Atlantique lines linking Paris to Brittany and to south-western France. Both new lines opened in mid-2017, demonstrating our ability to handle complexity and embrace new ways of working.



LEARN MORE ABOUT EURAILTEST



Africa's first high-speed line

SNCF Group acted as a shadow operator on behalf of ONCF, Morocco's national rail operator, helping plan, build and launch the country's first high-speed line.

The 200-km double-track line, which opened at the end of 2018, carries trains at 320 km/h between Tangier and Kenitra and is expected to raise ridership to 6 million — a four-fold increase. Thanks to project organization that is a mirror image of ONCF, SNCF and ONCF teams worked together for over 10 years to successfully transfer know-how tailored to the local context.

But our involvement didn't end once the line opened. Instead, SNCF Group's involvement continues in 4 main areas:

- through a joint training centre in Rabat, which accommodates over 5,000 trainees each year,
- through a joint venture (40% owned by SNCF Group) in Tangier to maintain high-speed trainsets,
- by providing infrastructure maintenance and on-going traffic management support for at least two years through SNCF Réseau,
- by assisting with technical aspects of conventional and high-speed rail systems.

LEARN MORE ABOUT SNCF'S CONTRIBUTION TO AFRICA'S FIRST HIGH-SPEED LINE



Modelling transport

Services to meet every need

At SNCF Group we employ time-tested modelling methods to forecast traffic patterns and predict rail project profitability. This includes:

- predicting trends and forecasting demand elasticity in response to various mobility drivers,
- modelling traffic for specific projects or substantial changes to short-, medium- and long-distance rail offers, and estimating shifts from one mode to another,
- modelling how traffic will be shared between operators,
- assessing the reliability of traffic forecasts so that operators planning a new project or intending to overhaul rail provision are fully aware of the risks and opportunities,
- using modelling to inform decision-making around new station projects.

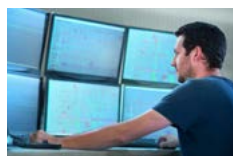
Building on our solid track record on rail projects in France, we've deployed our expertise across all these areas elsewhere in the world — in Morocco (Tangier-Kenitra high-speed line), in the United Kingdom (East Coast Main Line), in India (Mumbai-Ahmedabad High Speed Rail Corridor), and in Italy (NTV).

Designing and implementing transport plans

As recognized experts in every aspect of rail operations, from timetabling and transport planning through to real-time traffic management, we:

- work with transport organizing authorities and operators,
- stress-test transport planning arrangements,
- draw up contingency plans to keep services running when network performance is affected by extreme weather, reduced capacity, rolling stock availability or other factors,
- optimize track occupancy in stations,
- conduct regular performance analyses,
- assess punctuality and identify ways to improve on-time performance,
- assist with technical aspects of railway system operations.

OVERVIEW OF MODELLING SOLUTIONS FOR RAILWAY OPERATIONS



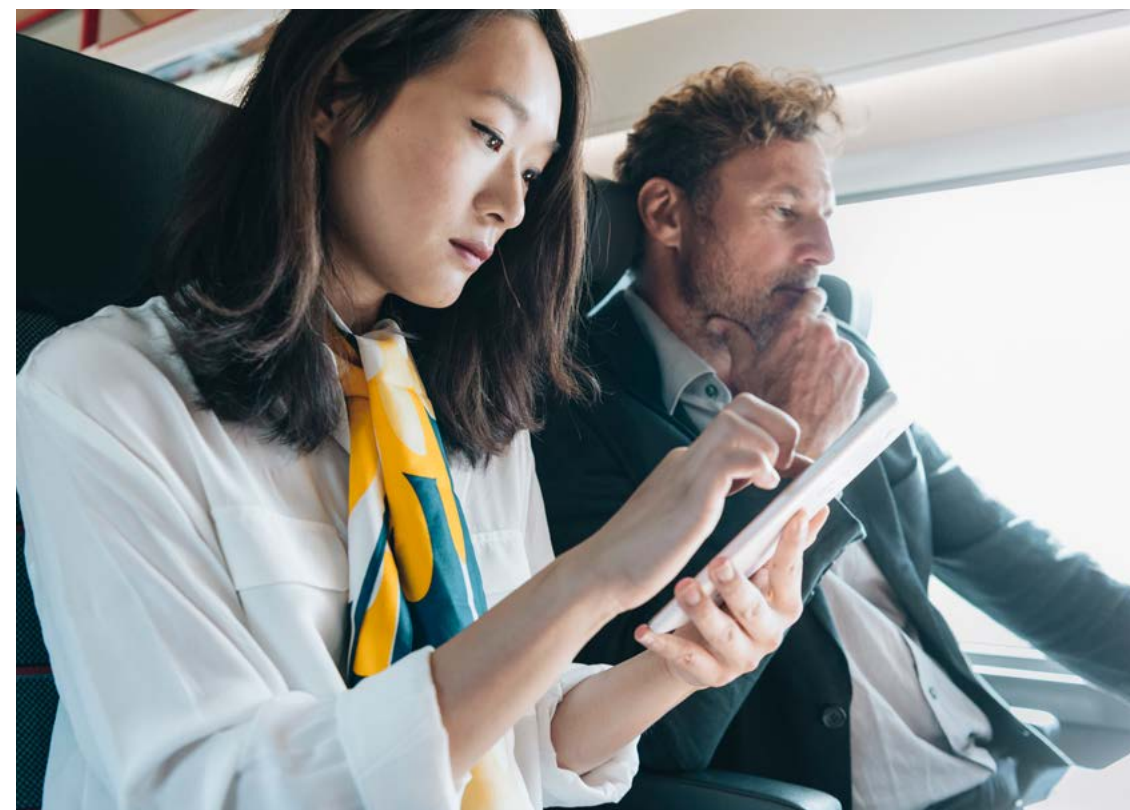
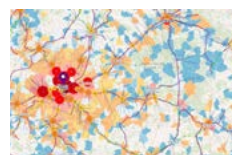
DISCOVER HOW TO OPTIMIZE A RAIL TRACK OCCUPATION DIAGRAM



LEARN MORE ABOUT SNCF RÉSEAU'S CONSULTANCY SERVICES



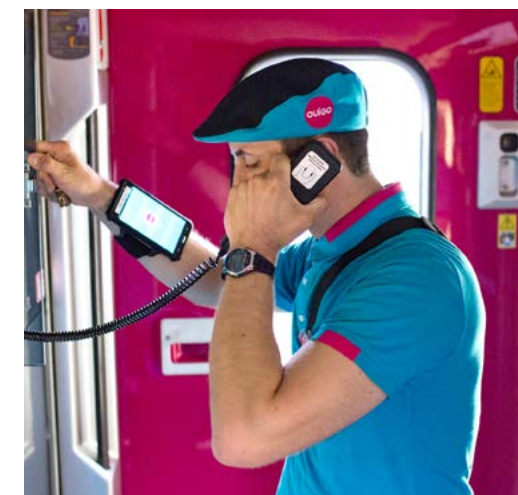
SNCF RÉSEAU & DATA



Delivering quick, reliable passenger information

At SNCF Group we're using digital technologies and tapping into our customer database to keep passengers better informed. This includes:

- sending passengers real-time text-message alerts to let them know about delays, route changes and other incidents and events affecting high-speed trains
- encouraging customers to report delays and overcrowding issues via SNCF Connect, so we can keep other passengers informed
- measuring how quickly we let our customers know about delays across our network, and how reliable that information is—each and every day
- sending daily push notifications via SNCF Connect to ask passengers whether they're satisfied with the information they receive about Transilien and TER regional services
- making on-board announcements from our Transilien operations centres
- installing next-generation operations centres in major stations to manage on-time performance and passenger information.



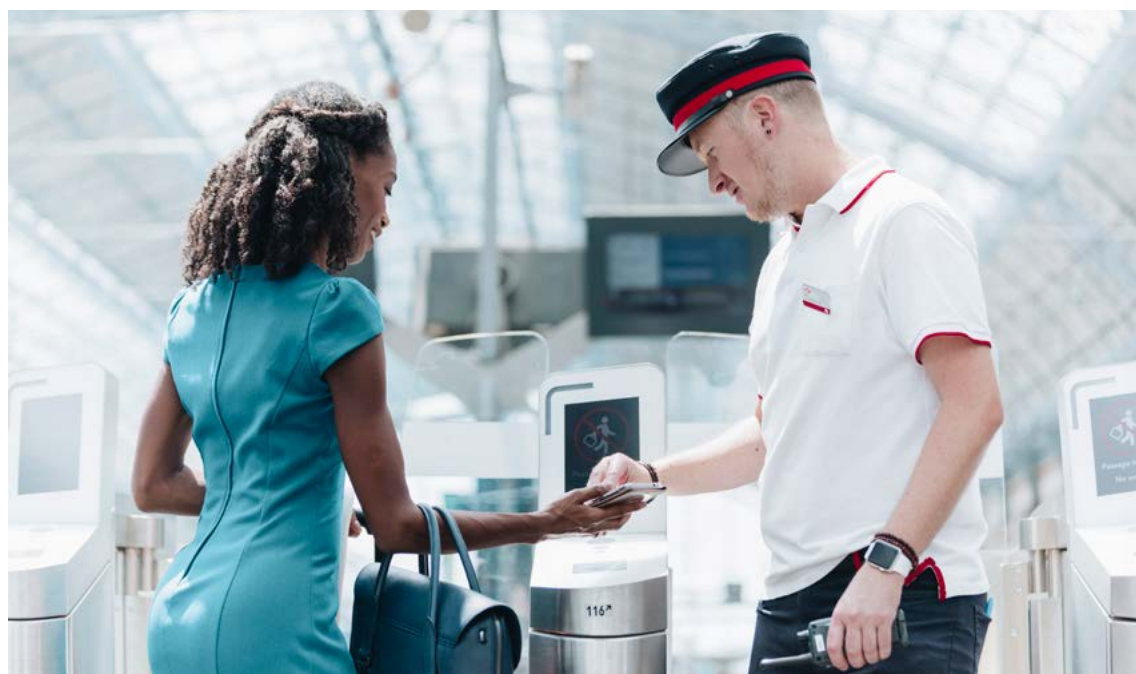
Yield management

Yield management involves allocating service capacity according to current and potential demand with a view to maximizing revenue, and is widely used in the airline, car rental and hospitality industries.

At SNCF Group, we've been honing our expertise in this area for over 30 years. Striking just the right balance between supply and demand is vital in an industry such as ours, where fixed costs are high. As a rail operator, we face a two-fold challenge: extracting maximum value from a finite resource (the number of seats on our trains), and catering as best we can to different classes of demand (such as peak and off-peak journeys, low-cost fares, and passenger services).

By practising yield management, we're boosting train occupancy rates, maximizing our revenue, preventing overcrowding on peak trains, and encouraging more people to choose off-peak services.

As a result, fewer SNCF trains are under-occupied. And because we're running a more efficient service, we're also doing our part to protect the planet.



Developing customer service

We're mainstreaming data-driven services and digital technologies across our operations. For SNCF Group, customer service lies at the heart of everything we do. That's why we've developed a whole suite of services for our passengers:

- end-to-end encrypted service on SNCF Connect,
- Junior & Cie, our service for unaccompanied children,
- home luggage pickup,
- on-board catering,
- our Ector valet parking service,
- WiFi on all new and upgraded high-speed trainsets.

Other services include:

- seamless electronic ticketing system for commuters with NFC*-enabled smartphones, replacing the Navigo pass and paper tickets in the Paris Region,
- soon, season tickets and passes will be reloaded directly as travellers pass through validation points,
- emails and push notifications, via SNCF Connect, to keep us in close touch with each customer in our constantly updated Customer Relationship Management (CRM) database,
- ticket barriers that tell passengers if a travel pass is valid.

At Transilien, which provides rail services to Greater Paris, we're using digital technologies to nudge customers in the right direction — encouraging them to treat their fellow passengers considerately and showing them how everyone has a part to play in making mass transit a seamless, enjoyable experience for all.

* NFC: Near Field Communication

LEARN MORE ABOUT NFC TICKETING



LEARN MORE ABOUT RAIL SECURITY BY SNCF



Railway security

At SNCF, we've adopted stringent security measures — drones, sniffer dogs for illegal drugs and explosives, strict access control systems, comprehensive incident review, and our own remote security operations centre based on our experience and know-how. We can review your existing arrangements or advise you on how to:

- set up a security team,
- keep your premises secure,
- prevent security breaches along a section of track or line.

SNCF Group training

We provide comprehensive training for railway professionals.

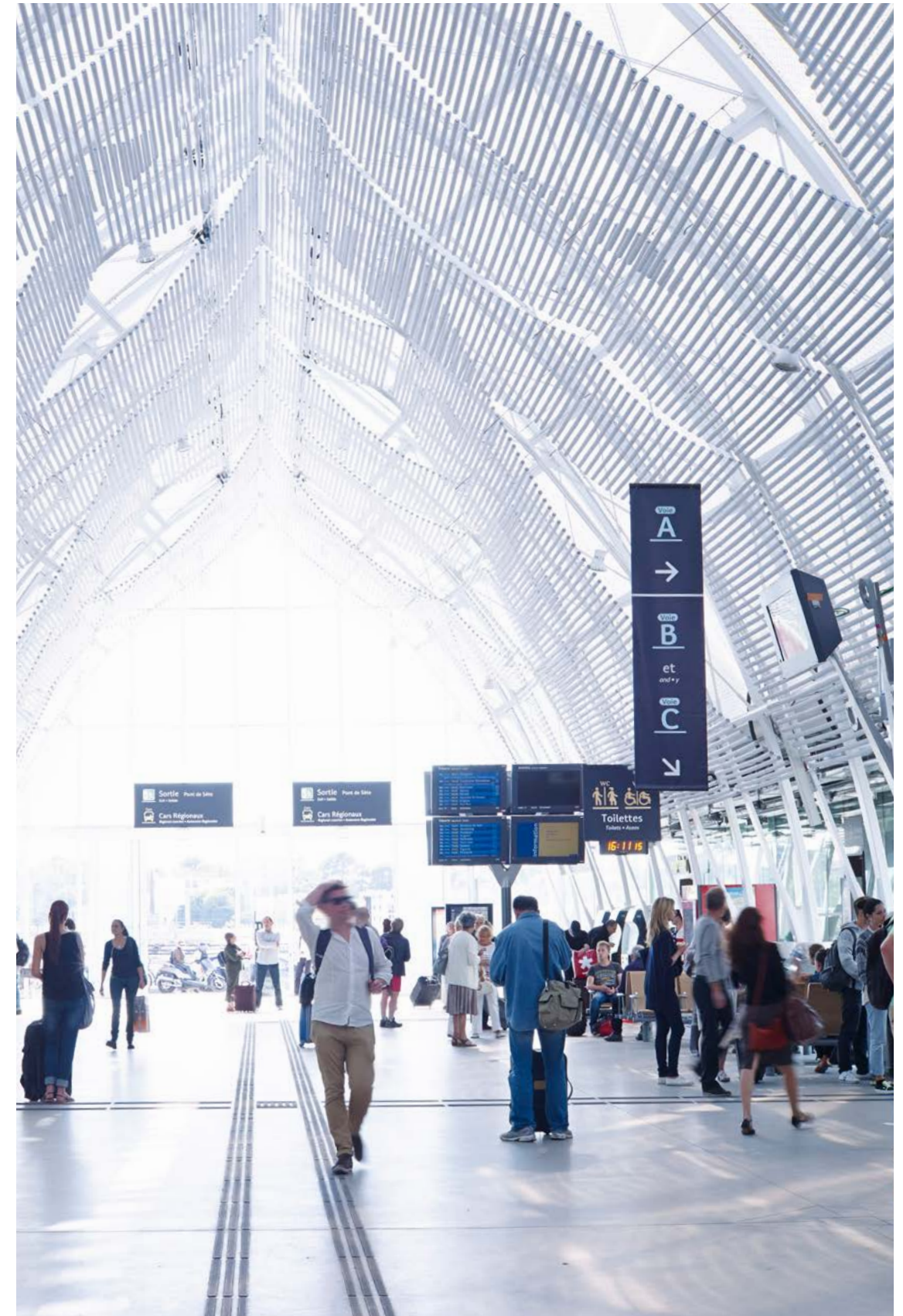
To date, we've designed most SNCF Group training programmes for our own employees.

Taught by a network of corporate universities and training centres, courses cover the structure and operation of railway systems, safety, driving, maintenance, and more, including highly technical subjects such as infrastructure design.

Today we are delighted to offer our most essential programmes — a core component of the operational excellence that has won recognition around the world — to professionals throughout the rail sector.

The Institut de Formation Ferroviaire (IFF) is a unique partnership between SNCF Group and Office National des Chemins de Fer du Maroc (ONCF) in the field of railway training.

LEARN MORE ABOUT IFF





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