

DSP Regional & Urban mobility



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The implications of urban mobility are crucial in France and international in scale. Faced with population growth and the need for mobility, urban transport must adapt its offering in a context of budgetary constraint and the energy transition.

MASTERIS addresses these issues and offers bespoke solutions for all stakeholders involved with urban rolling stock. Network operator, city, organising authority, manufacturer & outfitter or engineering company.

As a subsidiary of SNCF Voyageurs that brings extensive experience with all types of urban

rolling stock - tramway or metro - MASTERIS provides an extensive array of engineering and maintenance services for all life-cycles of the equipment, for example: certification, approval, renovation, repair, modernisation, end-of-life and more.

Our sales team, dedicated to meeting the challenges of the urban market is at your side and at your service.

Our value proposition: Optimise utilisation and the service life of your rolling stock, while ensuring the safety and comfort of passengers!



With close to 15 years of experience and backed by the expertise of the SNCF Group, working together with MASTERIS you benefit from the synergies we offer as a maintainer and an operator. Our operations can be implemented on site, in one of the SNCF Technicentres or in collaboration with well-known partners in the market.

Multi-disciplinary teams at MASTERIS are ready to help you, they can provide a wide range of services, which particularly address 3 key challenges.

1

The ecological transition

Our teams bring solutions for reducing rolling stock energy consumption (HVAC for instance) and supporting development policies for collective urban transport (design and implementation for increasing the carrying capacity of railcars).

2

Optimisation of your budgets

We offer bespoke solutions aimed at extending the service life of your equipment and major structures, implementation of reliable overhaul operations, in close compliance with operating cost or investment cost constraints.

3

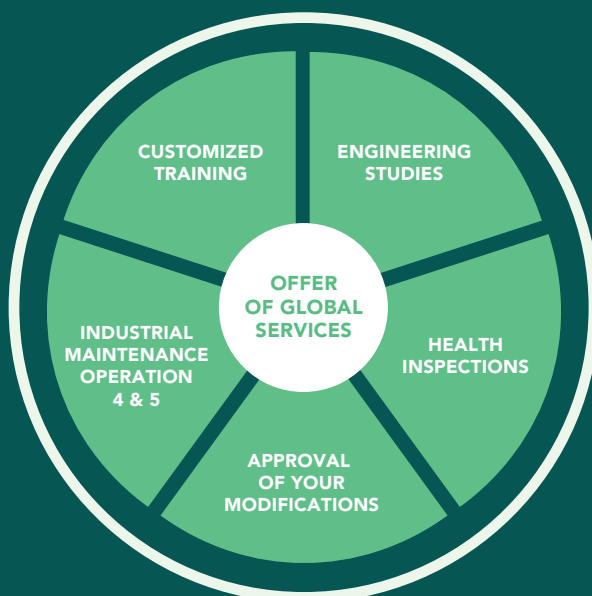
Availability of rolling stock

We minimise fleet downtime through direct intervention at your sites, implementing industrial operations with optimised transit time or aiding the retention of competencies of your maintenance personnel through tailored training courses.

Engineering and industrial expertise at your service

Our pool of skills – in-house and with the support of the SNCF Group – brings together technical experts from throughout the railway industry. We are capable of intervening on any type of guided

urban transport rolling stock: tramway, metro, VAL, funicular, etc. Our experience enables us to provide solutions for the entire rolling stock life cycle.



YOUR KEY REQUIREMENTS

- | | |
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| 1 ASSISTANCE FOR APPROVAL AND AT RECEPTION OF YOUR ROLLING STOCK | 5 MAINTAINING/RESTORING THE POTENTIAL SERVICE LIFE OF YOUR ROLLING STOCK (MID-LIFE) |
| 2 OPERATION AND MAINTENANCE OF YOUR FLEET OF ROLLING STOCK IN COMPLETE SAFETY | 6 TRANSFORMING/MODERNISING YOUR ROLLING STOCK |
| 3 OPTIMISING OPERATION AND MAINTENANCE OF YOUR ROLLING STOCK | 7 REPAIRING ROLLING STOCK (RA) |
| 4 OPTIMISER L'EXPLOITATION ET LA MAINTENANCE | 8 DISMANTLING/RECYCLING YOUR ROLLING STOCK |



Major mid-life renovation for VAL urban tramways and metros

We provide a complete range of industrial services, ranging from simple upgrades to meet standards, to mid-life renovation and on to large-scale transformation for modernising your rolling stock.

We implement leading-edge industrial measures with:

- An integrated offering tailored to your operational requirements.
- Guaranteed production schedule commitments.
- Agile, top-quality industrial and logistical organisation.
- High-capacity technological innovation, acknowledged technical expertise as well as proven work methods and maintenance methods.
- A network of experienced, top-tier industrial partners.

OUR ADVANTAGES

- + A turnkey service offering with provision of an industrial and engineering chain of excellence.
- + Capacity resources distributed throughout the region in order to respond to your varied economic or environmental issues.
- + A local support arrangement to optimise maintenance and the transit time of your rolling stock.

YOUR BENEFITS

- + The guarantee of renovated and modernised rolling stock based on proven standards for mid-life renovation of SNCF rolling stock.
- + With the OPTER renovation program (900 TER units renovated over 10 years), you benefit from unique experience for sustainable improvement of your urban rolling stock, through:
 - improving the passenger experience,
 - increasing availability of your fleet,
 - reducing energy consumption.
- + Our Level 5 Transformation program integrates solutions that optimise your maintenance costs for Level 3 operations.

OUR COMMITMENTS

A VISION OF YOUR PROJECT

Complete project management with a strong contractual commitment regarding industrial quality, costs, and schedules. dans nos technicentres industriels.

We intervene directly at the client's site or we transport your rolling stock to our industrial technicentres.

OPTIMISATION

Extended service life of your assets (up to 40 years).

An upgrade of your rolling stock and components during the renovation operation.

References

KEOLIS Lille

Renovation of the floor coverings for 27 VAL 208 metro railcars

Mid-life renovation for 45 VAL 206 metro railcars

SEMITAN Nantes

Mid-life renovation of 23 Incentro tramway railcars



Appraisal and renovation of the bogies

We provide a service offering featuring:

- An efficient and robust industrial capacity
- A network of experts specialised in the different components of the bogie (shock absorbers, magnetic bearing, etc.)

ENGINEERING:

- Proven technical solutions that extend the service life of your rolling stock (make-or-buy studies).
- Integration of new equipment to reduce noise pollution and extend the service life of your wheels (lubrication of the wheel flange and rail head)

INDUSTRIAL:

- An efficient industrial tool applying the best standards of operational excellence.
- Methods and organisation of a well-trained industrial organisation to guarantee our contractual commitments.

OUR ADVANTAGES

- + A robust industrial facility, efficient and flexible with optimised transit time – as little as 10 working days for one railcar.
- + A client referral for multiple types of urban rail products:
 - Citadis Arpège bogies
 - Citadis Magdebourg bogies
 - TFS bogies
- + An engineering measure to help you with major technical issues associated with running gear.

OUR COMMITMENTS

Delivery reliability for availability of your rolling stock - timing adapted to your operational requirements.

An engineering measure to keep your costs for unscheduled replacement of parts under budget.

References

CITADIS

614 Arpège bogies for tramway, Orléans, Le Mans, Grenoble, Lyon, Toulouse, Rouen 45 Magdebourg bogies for tramway, Orléans

TFS

165 bogies for tramway, Grenoble

MF 77

60 bogies for métro, Paris Ile de France



Appraisal and renovation of door mechanisms

We provide specialised service at the client's facilities to carry out the mid-life renovation of your door mechanisms.

ENGINEERING:

A network of technical experts specialising in different product lines.

Bespoke support for:

- Achieving "good health" status for your door systems with regard to mid-life operation.
- Reducing your supply costs for components (double sourcing and diversification).

INDUSTRIAL:

- A mobile, qualified team for intervention on your rolling stock.

OUR ADVANTAGES

- + Turnkey engineering support for:
 - Analysing your technical problems by means of technical appraisals,
 - Implementing processes for specific repairs,
 - Bespoke adaptation of maintenance instructions,
 - Training your maintenance team with regard to troubleshooting methods and specific adjustments.
- + A mobile measure adapted for your transit times to guarantee your operation program.

OUR COMMITMENTS

Delivery reliability for availability of your rolling stock.

Industrial support, engineering and training to ensure safety, optimisation and reliability of your rolling stock.

Local support in the operational management of your project.

YOUR BENEFITS

- + Maintenance adjusted to the real duty cycles of your operations.
- + Engineering support for keeping expenses associated with the handling of obsolescence under control.
- + Turnkey industrial and engineering measures for managing quality, costs, availability, and the safety of your renovated rolling stock.

References

TaM

Mid-life renovation of the door systems on Citadis 401 trams

RATPdev Casablanca

Appraisal and achievement of a healthy state of the door systems on the Citadis 302 trams

KEOLIS Orléans

Overhaul of the drive systems for the doors of the Citadis 301 trams



Appraisal and renovation of the hydraulic brake systems

With the advantages of a new industrial centre of excellence, since 2010 we have offered confirmed specialisation in maintaining the hydraulic brakes of tramways and metros.

We support many French cities in their asset maintenance activities (Lyon, Lille, Grenoble, Montpellier, Bordeaux, Rouen or Toulouse), as well as other European operators (Brussels, Florence and Dublin).

ENGINEERING:

Engineering support for:

- Adapting the nature of the works to your operating conditions,
- Reducing your supply costs for components (double sourcing and diversification).

INDUSTRIAL:

- An industrial and logistics service offering for handling your general overhauls and accident repairs.

OUR ADVANTAGES

- + Optimised transit time of 5 to 10 working days for a complete railcar.
- + A turnkey offering (industrial logistics, engineering and training) to meet your requirements in the areas of quality, costs, lead time and safety.
- + Strong engineering expertise is at your service for resolving major issues and handling obsolescence.

OUR COMMITMENTS

Delivery reliability for availability of your rolling stock.

Industrial support, engineering and training to ensure safety, optimisation and reliability of your rolling stock.

Local support in the operational management of your project.

References

ILEVIA Lille

Since 2011

EQUIPMENT: METRO VAL 208AG, Knorr Bremse. Callipers and brake power units.

SERVICE: Overhaul of the braking subassembly, engineering.

TaM Montpellier

Since 2014

EQUIPMENT: Citadis 401, 302, 402 – callipers and brake power units of the Knorr Bremse brake

SERVICE: Overhaul of the braking subassembly, engineering and training.

TRANSDEV Dublin

Since 2020

EQUIPMENT: Citadis 401 callipers and power units for the Knorr Bremse brake.

SERVICE: Overhaul of the braking subassembly, engineering and training.

Appraisal and maintenance of the HVAC units

Through our technical expertise we have developed innovative solutions that enable increased reliability and maintainability of your thermal comfort equipment.

ENGINEERING:

Specialised in different product lines

Bespoke support for:

- improving the ergonomics and comfort of your operator stations,
- optimising the general overhaul potential of your equipment,
- defining energy-saving solutions,
- anticipating regulation of fluids.

INDUSTRIAL:

An industrial and logistics service offering for handling your general overhauls and accident repairs.

We train your maintenance personnel to perform fault detection operations and functional diagnostics for your routine Level 3 maintenance.



OUR SERVICE OFFERING

- + Industrial repair and renovation (restoration to full potential, detection of faults in the refrigeration circuits).
- + Technical expertise.
- + Modernisation and industrial transformation
- + Preparing the HVAC units and the new parts in the event of obsolescence.
- + Troubleshooting at the client's site (service hotline).
- + Training centre for handling fluids (European Evaluation Centre).

References

RATPdev Brest

Development of a prototype on the Citadis tram:

- Installation of an HMI panel on the driver's desk to improve ergonomics and operational safety.
- Modification of the PLC, ventilation and air conditioning to adapt it to the comfort of the drivers and increase the lever of reliability.

KEOLIS MHI Dubaï

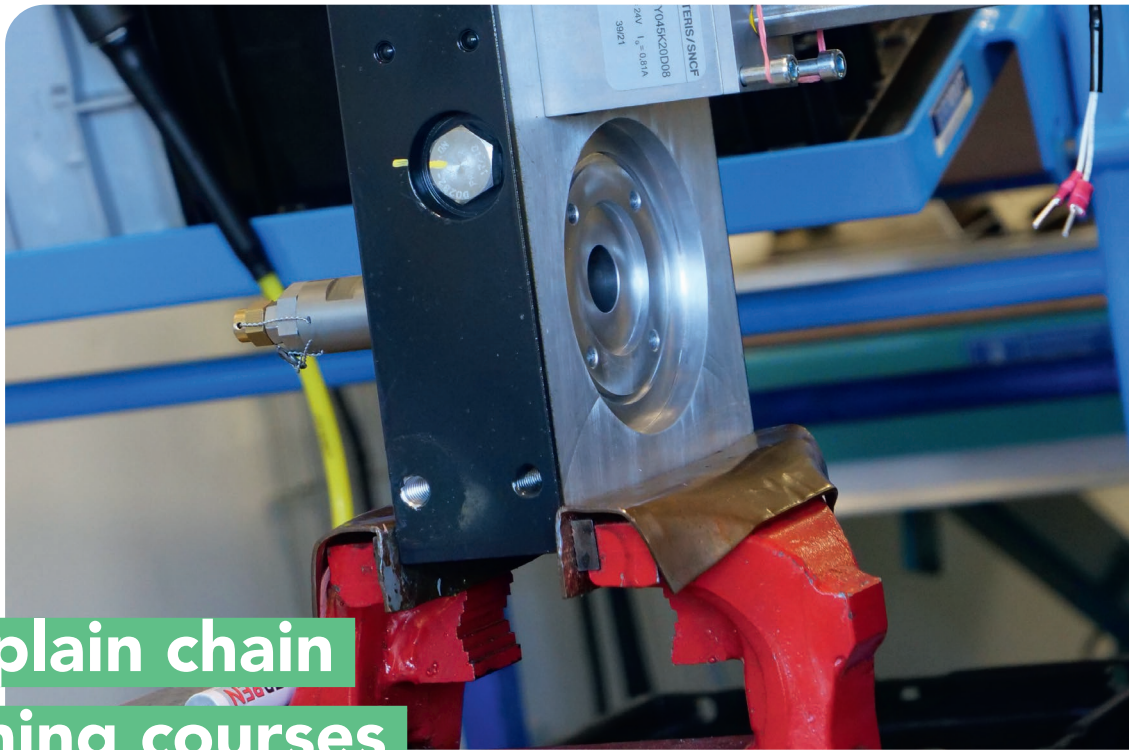
Expert assignment for the metro HVAC system and definition of Level 4 maintenance.

KEOLIS Tours

Implementation of engineering support to ensure reliability of the cabin HVAC units for the problems associated with the safety procedures in hot weather.

KEOLIS Orléans

General overhaul and ensuring reliability of the Citadis cabin HVAC units at 600,000 km.



Supply chain training courses

SUPPLY CHAIN

Combining the advantages of parts supply manager for passenger equipment fleets and agility in spare parts contracts with qualified suppliers, MASTERIS is able to propose spare parts supply schemes for your urban rolling stock.

From a simple component part to the implementation of kitting, we study a supply solution adapted to your needs.

MASTERIS also provides an alternative for managing the obsolescence of your structures. By entrusting us with industrial overhaul services, we can guarantee the durability of your equipment.

In this context, we offer you a turnkey solution with our engineering and admission know-how for rolling stock modifications in order to comply with the regulations of the competent authorities.

TRAINING COURSES

Our courses, thus we provide the fundamentals of railway maintenance by means of practical and theoretical exercises applicable to all of your urban transport equipment.

TOP 10 TRAINING COURSES

1. Maintenance of bolted joints.
2. Training in complex troubleshooting methods.
3. Awareness of the decontamination of braking circuits.
4. Maintenance of electrical assemblies.
5. Fault detection for refrigeration circuits.
6. Corrective maintenance with implementation of diagnostics.
7. Maintenance of the TCMS data network.
8. Repair of PCBs.
9. Maintenance and diagnostics of the traction system.
10. Awareness of refrigerant fluid legislation.



Our advantages

Since 2009, MASTERIS, a subsidiary of SNCF Voyageurs, has been assisting its clients in the railway industry in France and abroad with all types of heavy and urban railway equipment.

With more than 150 employees, we offer you the benefit of multiple skills and benchmarks from different markets.

Our experienced sales team is specifically dedicated to your challenges. We have set up local management with "key accounts" in order to share our different customer experiences on each of our services.



RAIL & LOGISTICS



VOYAGEURS
OPEN ACCESS
INTERNATIONAL



DSP REGIONAL &
URBAN MOBILITY

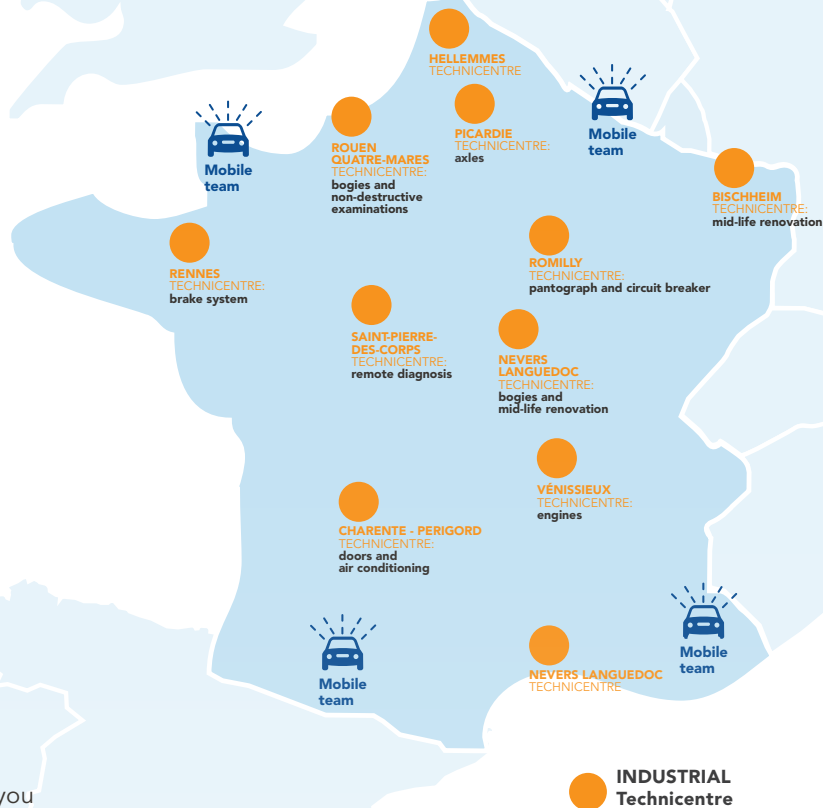


MODERNISATION &
UPGRADES



ENGINEERING, OFFERS & PROJECTS

A NATIONAL NETWORK OF INDUSTRIAL PARTNERS AT THE SERVICE OF INTERNATIONAL DEVELOPMENT



MASTERIS offers you the following advantages:

Its own resources (team of more than 80 engineers)

The SNCF Industrial Technicentres network offering of leading-edge industrial and engineering expertise

Partners throughout the region for industrial operations on site

Availability of a mobile team for on-site troubleshooting.

They trust us

8,3/10



Client
satisfaction
rating



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