



TRUST IN MOTION

General catalogue

TRANSPORT SYSTEMS
TRAINS
BUSES
SIGNALLING
COMPONENTS
SERVICES

Your Way
to Future Mobility

www.caf.net

WHEN YOU TRAVEL IN **GOOD COMPANY**, THE JOURNEY IS ALWAYS BETTER

TRUST IS DEMONSTRATED BY CUSTOMERS' CONFIDENCE IN CAF AS A RELIABLE PARTNER TO RESPOND TO THEIR URBAN AND INTERURBAN MOBILITY CHALLENGES. OUR FIRM COMMITMENT TO CONTINUOUS INNOVATION KEEPS US IN MOTION, CONSTANTLY IMPROVING AND MOVING FORWARD, CONTRIBUTING TO OUR PLANET'S SUSTAINABILITY AND QUALITY OF LIFE FOR ALL.



CAF is one of the international leaders in the design and supply of comprehensive transport systems.

A benchmark in sustainable transport sector, the company offers a wide range of products and services, including the supply of trains, buses, components, signalling systems, services and comprehensive turnkey transport solutions.

It has a history dating back more than 100 years, strongly committed to promoting environmentally friendly transport.

Its closeness to its customers and understanding their requirements is crucial in order to provide solutions adapted to the specific characteristics of each transport authority. High added value solutions, based on ongoing commitment to innovation.



CAF IN MOTION

The CAF Group, with a workforce of over 13,000 people, operates in more than 50 countries around the world.

The company has production facilities in Spain, France, the United Kingdom and Poland in Europe, as well as other factories

in the United States, Mexico and Brazil. It also has various maintenance centres in the five continents.

CAF has earned its customers' trust to undertake the most demanding global projects on the market.

The entire CAF Group team is fully committed to developing high added value solutions that address the specific requirements of each transport authority.

TRANSPORT SYSTEMS
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INTEGRATED MOBILITY SOLUTIONS

**WE LEAD THE DEVELOPMENT OF COMPREHENSIVE
SUSTAINABLE MOBILITY INFRASTRUCTURE PROJECTS**

CAF guarantees the integration and compatibility of all the subsystems in its projects, from civil works through to the operation of railway services, including electrification, signalling, communications and ticketing. Projects are addressed as a whole from an interdisciplinary perspective, managing all the involved complexities so as to provide a turnkey transport solution.



We Make
Your Way Easier

ENGINEERING AND CONSULTANCY

CAF's consultancy and engineering services address urban development goals for different administrations, based on extensive experience in transport, energy, construction and the environment.

COMPREHENSIVE RAIL TRANSPORT PROJECTS

The CAF Group's solutions guarantee proper integration between rolling stock and infrastructures. This integrated project model is based on the optimisation of all three EPC (Engineering-Procurement-Construction) pillars. This approach makes the design, supply and integration of the various sub-systems of the project possible across the board.

FINANCIAL SERVICES

Financing instruments to bring each client's transport strategy to fruition. Comprehensive turnkey projects (EPC/Turnkey) include complex financing systems such as PPPs, concessions, leasing, etc.



TRAINS

EXTENSIVE RANGE OF ROLLING STOCK

CAF designs, manufactures and maintains all types of railway vehicles fitted with state-of-the-art safety, performance and comfort technology. Maximum energy efficient vehicles equipped with innovative solutions, which guarantee optimum reliability over their entire operating lives.



OARIS

HIGH-SPEED AND VERY HIGH-SPEED
TRAINS UP TO 350 KM/H

CIVITY

MODULAR TRAINS FOR REGIONAL AND
COMMUTER SERVICES

INNEO

METRO UNITS ADAPTED TO THE NEEDS
OF EACH CITY

URBOS

SUSTAINABLE TRAMS, LIGHT RAIL
VEHICLES AND TRAM-TRAINS

BITRAC

DIESEL AND ELECTRIC TRACTION
LOCOMOTIVES



ZERO EMISSION BUSES

CREATING SUSTAINABLE CITIES

Through its subsidiary Solaris, the CAF Group incorporates an innovative range of buses and trolleybuses in its urban transport solutions. This is one of the broadest zero-emission vehicle offers on the market, including electric, hybrid and hydrogen buses.

Accordingly, CAF guarantees the best solution to customers' requirements in terms of urban transport, especially with regard to electric and multi-mode transport solutions.



PROTECTION AND MANAGEMENT OF RAIL TRAFFIC

CAF also offers comprehensive railway signalling and control solutions, both for infrastructures and on-board equipment.

CAF develops turnkey signalling projects, including testing and commissioning, as well as maintenance of the facilities.



AURIGA

LEVEL 1 AND 2 ETCS & ATO

QUASAR

Q4: ELECTRONIC INTERLOCKING

NAOS

INTEGRATED CONTROL CENTRES

POWER AND CONTROL

CAF has a wide variety of components which provide an overall solution to the requirements of a sector dedicated to intelligent transport; technologically efficient, highly reliable and sustainable solutions.

ELECTRIC TRACTION SYSTEMS

Proprietary traction equipment for direct and alternating currents. State-of-the-art IGBT technology and control with voltage and frequency modulation.

ENERGY STORAGE SYSTEM

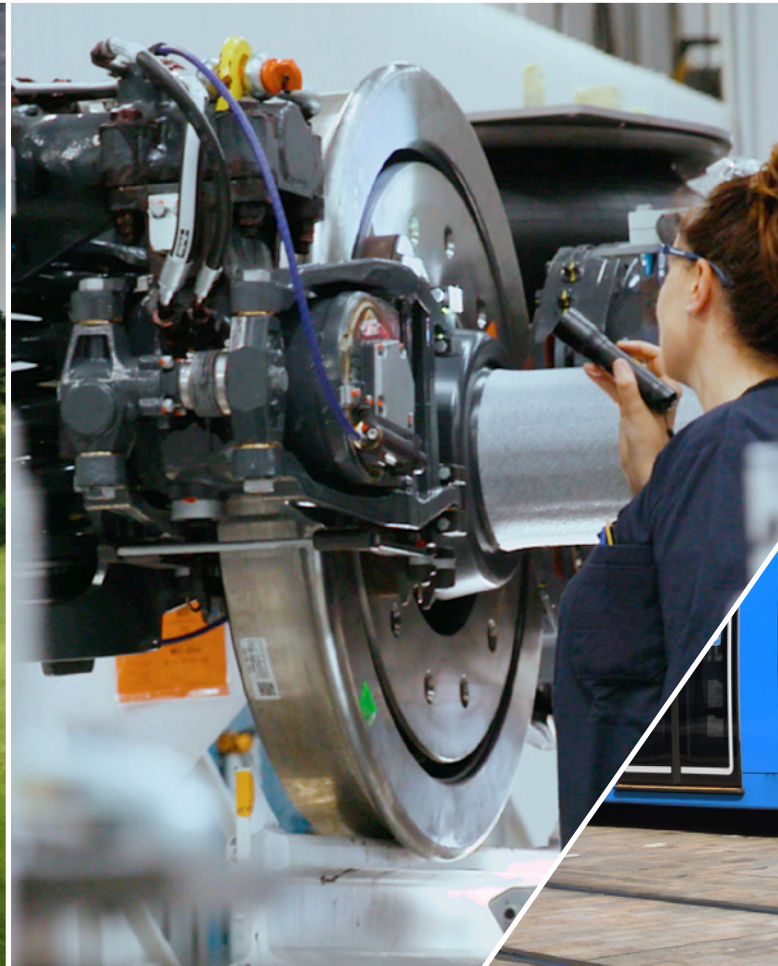
Solutions based on energy storage systems and guidelines for efficient driving practices for the railway industry. High energy efficiency and high reliability.

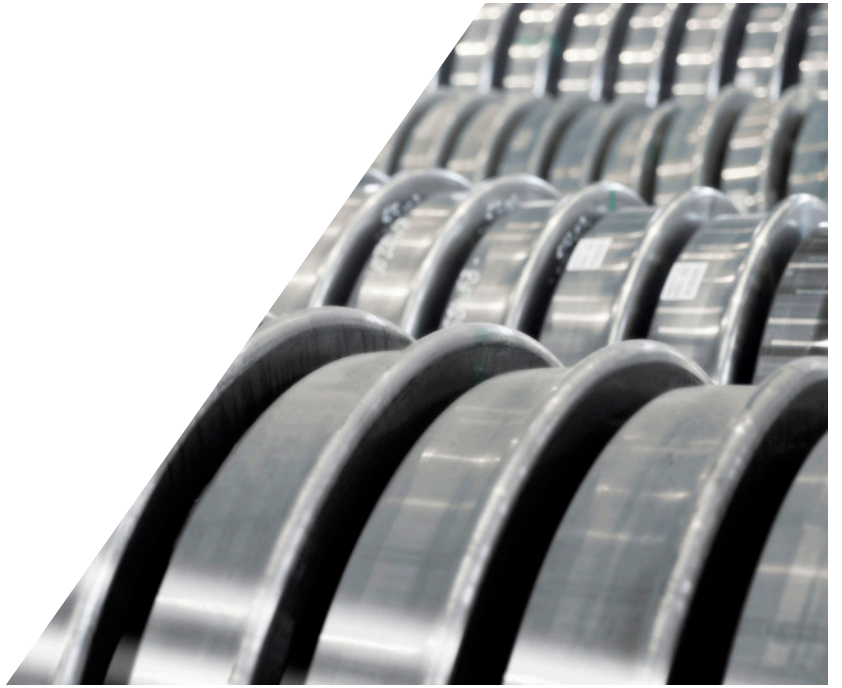
CONTROL AND COMMUNICATION SYSTEMS

Rail vehicle monitoring, comfort and diagnostics. Intelligent Transport Systems (ITS) based on ICT technology.

COMPREHENSIVE ROLLING SOLUTIONS

Design, manufacture and maintenance of wheels, wheelsets or complete axle assemblies including gearboxes for all types of trains.





LEVEL UP THE EXPERIENCE

CAF's maintenance and after-sales activities seek to maximise reliability, availability, maintainability and safety values during fleet operation.

Its range of services covers, besides train maintenance, other requirements such as driver training, maintenance engineering support, rolling stock upgrading and comprehensive spare parts management services, among others.

SMART MAINTENANCE

CAF uses cutting-edge maintenance and optimisation technologies to maximise train service quality parameters and reduce lifecycle costs.

UPGRADE & REFURBISHMENT

Replacing obsolete equipment with new, more efficient systems with lower energy consumption extends train operating life and improves train availability and reliability.

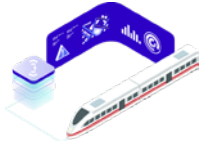
SPARE PARTS & OVERHAUL OF EQUIPMENT AND COMPONENTS

CAF manages the supply of spare parts and components so as to guarantee availability whereby operators and maintenance providers can optimise ownership costs.

DEPOT EQUIPMENT

We provide turnkey projects for the supply of complete depot equipment to optimise bogie maintenance operations.

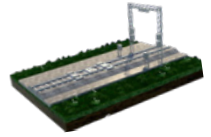




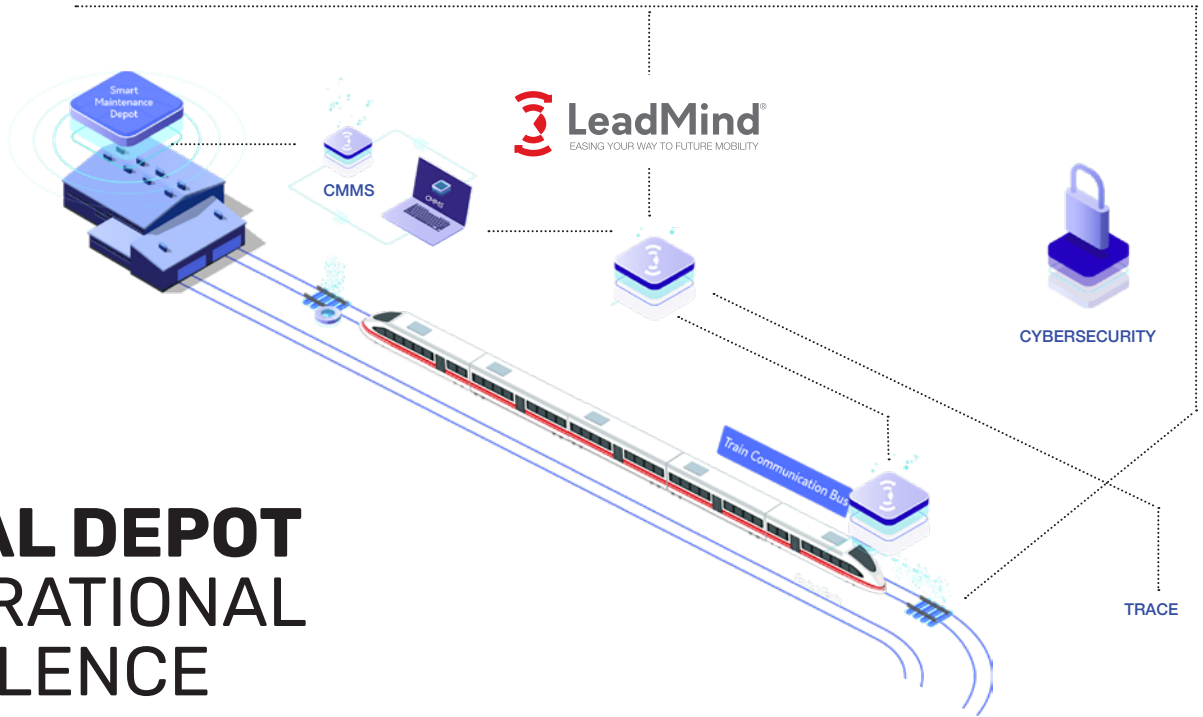
SMART OPERATION CENTER
FLEET MANAGEMENT



ANALYTICS BACK OFFICE
ADVANCED ANALYTICS



INSPECTION STATION
WAYSIDE SYSTEMS



DIGITAL DEPOT & OPERATIONAL EXCELLENCE

CAF offers comprehensive fleet management solutions through the use of advanced analytics methods. A new generation of digital solutions with one goal: to achieve the best performance of the fleet and maintenance strategy.



RELIABILITY AND
AVAILABILITY



REDUCE
MAINTENANCE
COSTS



EXTEND VEHICLE
LIFE CYCLE



OPTIMIZE THE
SAFETY/COST
COMBINATION

WORLDWIDE PRESENCE



MORE THAN
4.800
SUPPLIED
TRAINS

MORE THAN
1.000
MODERNISED
CARS

MORE THAN
1.200
ELECTRIC
BUSES IN
OPERATION

MORE THAN
50
COUNTRIES





ROLLING STOCK

AFRICA

ALGERIA - Regional trains: SNTF DMU - Metros: Algiers Metro
MAURITIUS - LRVs / Trams: Mauritius LRV **TUNISIA** - Regional trains: SNCFT DMU AM800

AMERICA

ARGENTINA - LRVs / Trams: Tren de la Costa LRV **BRAZIL** - Commuter trains: Recife EMU, Belo Horizonte EMU, CPTM EMU S/2000, S/7000, S/7500, S/8000 & S/8500 - Metros: Sao Paulo Metro Lines 1, 3 & 5
CANADA - Calgary LRV **CHILE** - Metros: Santiago de Chile Metro Lines 1 & 5, Santiago de Chile Fully-Automated Metro Lines 3 & 6 **COLOMBIA** - Metros: Medellín Metro **ECUADOR** - Metros: Quito Metro **MEXICO** - Commuter trains: Mexico Suburban EMU, Mexico D.F. - Toluca EMU - Metros: Mexico D.F. Metro NE92, NM02, Line A, Line 1 & 12 - LRVs / Trams: STC Monterrey LRV **UNITED STATES** - Regional trains: Passenger coaches AMTRAK - Metros: Washington D.C. Metro (WMATA) - LRVs / Trams: Pittsburgh LRV, Sacramento LRV, Houston LRV, Boston LRV, Maryland LRV, Cincinnati Tram, Kansas City Tram **VENEZUELA** - Metros: Caracas Metro

ASIA

HONG KONG - Commuter trains: Airport Express Line - Metros: LAR Hong Kong Line, MTRC **INDIA** - Metros: New Delhi Airport Rail Link **MYANMAR** - Commuter trains: Myanma Railways DEMU **PHILIPPINES** - LRVs / Trams: Manila LRT Line 1 **TAIWAN** - LRVs / Trams: Kaohsiung Tram

EUROPE

BELGIUM - Metros: Brussels M6 Metro, Brussels Fully-Automated Metro - LRVs / Trams: De Lijn Tram, Liège Tram **ESTONIA** - LRVs / Trams: Tallinn Tram **FINLAND** - Commuter trains: SM4 VR Finnish Railways EMU - Metros: Helsinki Metro S/M300 **FRANCE** - Regional trains: Provence DMUs, Corsica DMUs, Blanc Argent DMUs, SNCF EMU - LRVs / Trams: Montpellier Tram, Nantes Tram, Besançon Tram, Saint-Étienne Tram - Locomotives: RATP - Locomotives - Commuter trains: Double-deck EMUs RATP **GERMANY** - Commuter trains: Schönbuchbahn EMU, ZV VRR and NWL BEMU - LRVs / Trams: Born LRV, Freiburg Tram, Essen LRV **HUNGARY** - Regional trains: Passenger Coaches MAV - LRVs / Trams: Debrecen Tram, Budapest Tram **IRELAND** - Regional trains: Iarnród Éireann S/2900 DMU, Intercity Ireland Passenger coaches **ITALY** - Regional trains: Sardinia DMU, Civitavecchia Regionale Autonoma Friuli Venezia Giulia, Civitavecchia Ferrovie, Rome Metro MA300 & MB400, Napoli Metro Line 1 - LRVs / Trams: Cagliari Tram **LUXEMBOURG** - Trams: Luxembourg Tram **MONTENEGRO** - Regional trains: Civitavecchia **NETHERLANDS** - Commuter trains: Civity NS - LRVs / Trams: GVB S/M4 LRV, GVB Urbos Tram, Utrecht Tram **NORWAY** - High-speed trains: Oaris Flytoget - LRVs / Trams: Oslo Tram **PORTUGAL** - Commuter trains: Double-deck EMUs - LRVs / Trams: Lisbon Tram **ROMANIA** - Metros: Bucharest Metro **SERBIA** - LRVs / Trams: Belgrade Tram **SPAIN** - High-speed trains: RENFE S/104, ATPRD S/120 & AVR **SWITZERLAND** - Regional trains: RENFE EMU TEMD S/449, DMU TDM S/599, TRD S/121 - Regional trains: RENFE EMU S/61 - Commuter trains: RENFE EMU S/446, S/447, Double-deck S/450 & CIVIA, Euskotren EMU, FGC EMU, FEVE DMU, SFM EMU, RENFE hybrid trains and EMUs - Metros: Madrid Metro S/2000, S/3000, S/5000, S/6000, S/8000, S/8400, Barcelona Metro S/2100, S/3000, S/4000, S/5000 & S/6000, Bilbao Metro, Palma de Mallorca Metro - LRVs / Trams: Bilbao Tram, Granada Tram, Málaga Tram, Sevilla Tram, Valencia LRV, Vitoria Tram, Zaragoza Tram, Chiclana Tram Train - Locomotives: Bitrac, Locomotive BB 3000 V, S/292, C'C' 3,000 V & BB200 **SWEDEN** - Regional trains: Civity AB Transitio, Civity Nordic SJ AB - LRVs / Trams: Stockholm Tram A35 & A36, Lund Tram **SWITZERLAND** - Locomotives: Scheuchzer Locomotives **UNITED KINGDOM** - Regional trains: Caledonian Sleeper coaches, Civity Northern Franchise, Civity TransPennine Express Franchise, NIR S/3000 & S/4000 DMU, Civity West Midlands, Civity Wales & Borders Franchise - Metros: Docklands Light Railway - Commuter trains: Heathrow Express EMU, Northern Spirit EMU - LRVs / Trams: Edinburgh Tram, Birmingham Tram

MIDDLE EAST

ISRAEL - LRVs / Trams: Jerusalem Tram, Tel Aviv Tram **SAUDI ARABIA** - Regional trains: SRO Push-pull train, SAR Push-pull train **TURKIYE** - High-Speed trains: TCDD High-Speed train - Commuter trains: Izmir EMU - Metros: Istanbul Metro, Istanbul fully automated metro - LRVs / Trams: Antalya Trams **UNITED ARAB EMIRATES** - Etihad Rail Push-pull train

OCEANIA

AUSTRALIA - Regional trains: TfNSW Regional Trains - LRVs / Trams: Sydney Tram, Canberra Tram, Newcastle Tram, Parramatta Tram **NEW ZEALAND** - Commuter trains: Auckland Transport EMU

SIGNALLING

ARGENTINA - Control center for Roca Line - ADIF S.E. **AUSTRALIA** - ERTMS N2 on-board signalling system for Transport for NSW **BELGIUM** - Signalling system and control center for Liège Tramway **BULGARIA** - ERTMS N1 signalling system for NRIC **CHILE** - Signalling system and control center for EFE **CZECH REPUBLIC** - ERTMS N2 signalling system for Plasser & Theurer **EGYPT** - Signalling system and control center for ENR **ISRAEL** - Signalling system and control center for Jerusalem Tramway (J-NET) **MEXICO** - ETCS N2 on-board signalling system and Toluca Line control center with ATO for SCT **MOROCCO** - Signalling system for Casa Station port and SCADA remote control system for ONCF **NETHERLANDS** - ERTMS N2 signalling system & ATO Pilot **NEW ZEALAND** - ERTMS N1 on-board signalling system and ATO for Auckland Transport **POLAND** - ERTMS N2 on-board signalling system for PESA **SLOVENIA** - Signalling system for the Ministry of Infrastructure **SPAIN** - Signalling system (Conventional, ERTMS N1 & N2), CTC and telecommunication for ADIF - Signalling system and telecommunications for FEVE - SCADA and signalling system for Metro Madrid - Signalling work for ETS **TAIWAN** - Signalling system and control center for Kaohsiung Tramway **TÜRKIYE** - Conventional and ERTMS N1 signalling system for TCDD - Antalya Light Rail System **UNITED KINGDOM** - ERTMS on board system for ARRIVA and Keolis-Amey **URUGUAY** - ERTMS N1 on-board signalling system for CCFC

SERVICES

AUSTRALIA - Maintenance of Canberra and Parramatta Tramway with LeadMind **BELGIUM** - Maintenance of Liège Tramway with LeadMind **BRAZIL** - Maintenance of CPTM EMUs series 2070, 8000 with LeadMind **CHILE** - Maintenance of L1, L3 and L6 metro trains for Santiago Metro with LeadMind **COLOMBIA** - Modernization of Metro Medellín **EGYPT** - Modernization of Cairo Metro Line 1 **FRANCE** - Refurbishment of RATP EMUs - Refurbishment of metro trains for SYTRAL **GERMANY** - Maintenance of Schönbuchbahn EMUs (ZVS) and VRR and NWL BEMUs in Nordrhein-Westfalen with LeadMind **ITALY** - Maintenance of Sardinia DMUs, Cagliari Tramway, Palermo Tramway, Metro Roma and Trenitalia's Intercity's **MEXICO** - Maintenance of Suburbano Mexico EMUs and Metro Mexico Line 12 **NEW ZEALAND** - Maintenance of Auckland Transport EMUs **SAUDI ARABIA** - Maintenance of SAR regional trains with LeadMind **SPAIN** - Maintenance of Metro Madrid (s/3000, s/8000, s/9000), Metro Mallorca, Bilbao & Vitoria Tramway, Granada Tramway, Cadiz Tram-Train - Maintenance with LeadMind: MetroCentro Seville, Zaragoza Tramway, RENFE very high-speed trains s/120 and s/121, DMUs s/599, s/594 and s/598, EMUs s/449 and s/446 and CIVIA EMUs - Refurbishment of s/2000, s/3000 and s/4000 trains for TMB **SWEDEN** - Maintenance of Arlanda Express trains, Krosataget and Umea-Lulea regional trains. Maintenance of Snälltåget and SJ passenger cars, high-speed trains X2000, Lund Tramway with LeadMind, SJ and Green Cargo locomotives **UNITED KINGDOM** - Maintenance with LeadMind: Northern Arriva EMUs, Edinburgh Tramway, Caledonian Sleepers, West Midlands DMUs and Docklands Light Railway. Maintenance of TPE EMUs, NIR DMUs and W&B DMUs **UNITED STATES** - Maintenance of Maryland LRVs with LeadMind

TURNKEY & ENGINEERING

AUSTRALIA - Parramatta Tramway: Full steering and EPC execution of communications systems, signalling, energy and electrification, lower energy collection system and design and construction of workshops - Trains for Transport for NSW: Full project management and EPC execution of the rolling stock maintenance workshop **BELGIUM** - Liège Tramway: Full project management and EPC execution of the communications and energy systems **ISRAEL** - JNET Tramway: Full project management and EPC execution of communications systems, control traffic, energy and catenary, Tel Aviv Purple Line: Full project management and EPC execution of rolling stock, signalling, energy and communication systems **LUXEMBOURG** - Luxembourg Tramway: Design and construction of the charging system of trams without catenary (SCIE) **MAURITIUS** - Mauritius Metro Express: Full project management and EPC implementation of tramway signalling and control systems **MEXICO** - Toluca EMU: Integral management and EPC execution of electromechanical systems **SPAIN** - Zaragoza Tramway: Design and construction of the charging system of trams without catenary (SCIE) and electrification **TAIWAN** - Kaohsiung Tramway: power supply, telecommunications, control systems and catenary-free power supply

TRACTION, CONTROL & ENERGY STORAGE SYSTEMS

AUSTRALIA - Control and traction systems for TfNSW **BELGIUM** - Control and traction systems for STIB Brussels **COLOMBIA** - DC to AC Modernization for Metro Medellín **FRANCE** - SIL2 Train Control & Management System for SNCF **GERMANY** - Control, Traction and Energy Storage Systems with Li-Ion for ZV VRR & NWL **INDIA** - GTO to IGBT modernization for Indian Railways **INDONESIA** - Control and traction systems for Jabodetabek **ITALY** - GTO to IGBT modernization for Trenitalia **LUXEMBOURG** - Control, Traction and Energy Storage Systems with supercaps & Li-Ion for Luxtram **TAIWAN** - Control, Traction and Energy Storage Systems with supercaps for Kaohsiung **USA** - Control and traction systems for MTA Maryland, DC to AC Modernization for Norfolk Southern and Knoxville Locomotive Works

ELECTRIC & HYDROGEN BUSES

CZECH REPUBLIC - Ostrava **FRANCE** - Paris **GERMANY** - Berlin, Hamburg, Koblenz, Nürnberg, Offenbach am Main, Würzburg, Suhl, Köln, Wuppertal, Freiburg **HUNGARY** - Paks **ITALY** - Milano, Venezia, Bolzano **LATVIA** - Jelgava **LITHUANIA** - Taurage, Jonava **NETHERLANDS** - Apeldoorn, Zuid-Holland **NORWAY** - Oslo **POLAND** - Godzianow, Greboszow, Jaworzno, Katowice, Konin, Koźnice, Kutno, Miechow, Ostroda, Ostrow Wlkp, Oswiecim, Poznan, Radom, Sochaczew, Tychy, Warszawa, Pila, Bielany, Boleslawiec, Krakow, Wloclawek, Sosnowiec, Rybnik, Szczecin, Szczytno, Lublin, Malbork, Ostroka, Palecznica **ROMANIA** - Craiova **SPAIN** - Barakaldo, Barcelona, Bilbao, Madrid **SWEDEN** - Gavle, Sandviken **SWITZERLAND** - Luzern, Zug
For Solaris complete bus portfolio, please visit: www.solarisbus.com

PRODUCTION SITES

SPAIN - Beasain, Irún, Zaragoza, Castejón, Linares, Lérica **FRANCE** - Bagnères-de-Bigorre, Reichshoffen **POLAND** - Bolechow **BRAZIL** - Hortolandia **MEXICO** - Huehuetoca **UK** - Newport **USA** - Elmira NY



HEADQUARTERS

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SCAN TO VISIT
OUR CHANNEL

