



INGESYS

ROLLING STOCK AUTOMATION

Ingeteam

Projects

New vehicles



Marathon 111Ed Range
PESA (Poland) · TCMS



Uzbekistan Railways HS Power
Heads Talgo (Spain) · TCMS



Bilbao Tram
Euskotren (Spain) · TCMS



Kardemir Shunting Locomotive
Tülomsaş (Turkey) · TCMS

Subsystems



EMU
Hyundai Rotem (Turkey)
HVAC Control



DEMU
HITACHI (UK)
Galley Automation



High Speed Train · AMTRAK
Alstom (USA)
Toilets Automatron



EMU
CAF (Spain)
RCM (Data Logger)

Fleet refurbishment



UT 3500
FEVE (Spain) · TCMS

Traction control



Stuttgarter Straßenbahnen AG
Voith (Austria)

Remote Condition monitoring



DB project – Axle box
monitoring
Talgo (Spain) · RCM



VG fleet – MVB bus monitoring
Wiener Linien (Austria) · RCM

Services

Services offered:

- Manufacturing facilities and high-level testing to ensure the product's quality and flexibility.
- Application software desing and programming, in accordance with international standards.
- Data monitoring service based on cloud technology for system maintenance.
- 20 years of product availability, guaranteeing repair and maintenance service for 10 additional years.
- Product adaptation to the client's specific requirements.
- Systems engineering.
- Commissioning service.



INGESYS™ is Ingeteam's rolling stock automation platform, which complies with EN50155 and EN45545-2 railway standards.

The INGESYS™ platform responds to the automation and monitoring requirements of both trains (VCU, RIO, RCM, etc.) and onboard subsystems (HVAC, WC, doors, galley, etc.). It offers a modular architecture which can be configured by the user according to their automation requirements. The platform also includes a wide range of interfaces and the most extensive communication buses and protocols in the railway sector (RS232/485, CAN, MVB/WTB, ETHERNET TCP/UDP, ETHERNET/IP, TRDP, PROFINET, etc.). It offers the user different programming tools (IEC61131, C/C++, MATLAB) in order to optimise the time needed to develop control applications.



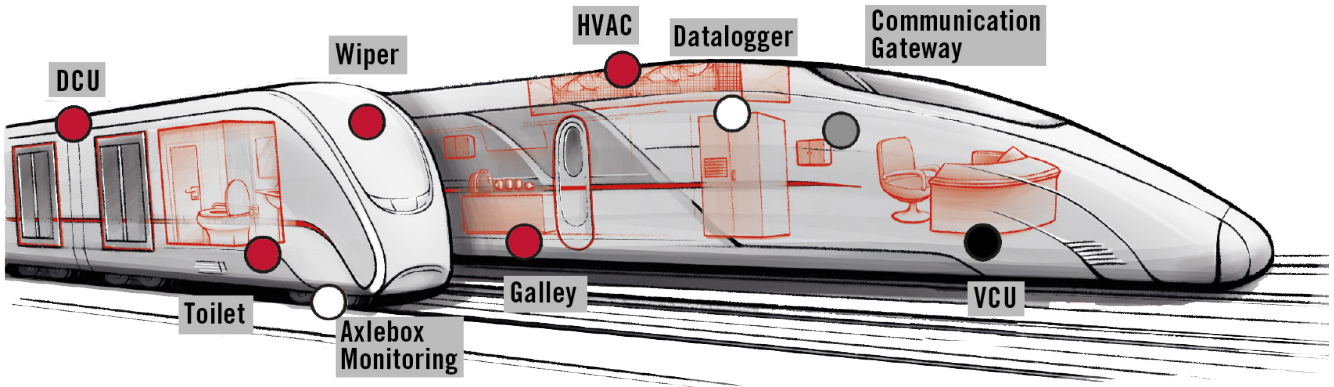
New Vehicles



Subsystems



Fleet Refurbished



Train Control & Management Systems



VCU, RIO, HMI, RCM

INGESYS RC3

- Complete range of racks, power supply modules processors and I/O modules.
- Modular structure.
- Redundant architectures (processors, comms, power supplies).
- EN50155 & EN45545-2 compliant
- I/O concentrated or distributed topology.
- 30 years supply.

Communication Gateway



Communication Gateway

INGESYS GW

- Communications interfaces: RS232, RS485, CAN, MVB/WTB, ETHERNET UDP, TCP/IP, TRDP, ETHERNETIP, CIP, PROFINET, WIFI, GSM.
- Option to include local I/Os.
- Compliance with EN50155 and EN45545-2 traction standards.

Remote Condition Monitoring



Datalogger

INGESYS RCM



Advanced Condition Monitoring Software

INGESYS ACM



Acceleration Sensor

INGESYS SR

- Preventive monitoring and diagnostics system for optimising maintenance task.
- EN50155 and EN45545-2 railway certification.
- Wide range of digital or analog input signal acquisition modules.
- Extensive range of communication protocols.
- Centralised monitoring and analysis tool based on web technologies.
- Actions as a consequence of exceeding thresholds (log generation, sending SMS/ email, digital signal activation, etc.).

Subsystem Automation



HVAC, DCU, Galley, Wipers...

INGESYS IC2

- Control system designed for controlling train's subsystems.
- EN50155 and EN45545-2 railway certification.
- Wide range of digital/analog input and output modules.
- Communication buses and protocols: RS485, CAN, WTB/MVB, ETHERNET TCP/UDP, ETHERNET/IP, TRDP, PROFINET, etc.
- IEC61131-3 compatible programming tools (C/C++ and Matlab /Simulink).
- Built-in web server.

EUROPE

Ingeteam Power Technology, S.A.
Avda. Ciudad de la Innovación, 13
31621 Sarriguren (Navarra) - Spain
Tel.: +34 948 288 000
Fax: +34 948 288 001
e-mail: solar.energy@ingeteam.com
bess.energy@ingeteam.com

Ingeteam S.A.
Parque Tecnológico de Bizkaia
Edificio 106
48170, Zamudio (Bizkaia) - Spain
Tel.: +34 944 039 710

Ingeteam S.r.l.
Via Emilia Ponente, 232
48014 Castel Bolognese (RA) - Italy
Tel.: +39 0546 651 490
Fax: +39 054 665 5391
e-mail: italia.energy@ingeteam.com

Ingeteam SAS
140 Rue Carmin - Le Naurouze B
31670 Labège - France
Tel.: +33 (0)5 61 25 00 00
Fax: +33 (0)5 61 25 00 11
e-mail: france@ingeteam.com

Ingeteam, a.s.
Technologická 371/1
70800 Ostrava - Pustkovec
Czech Republic
Tel.: +420 597 476 820
Fax: +420 59 732 6899
e-mail: czech@ingeteam.com

Ingeteam GmbH
Grand Bateau - Zollhof 6
D-40221 - Düsseldorf, Germany
Tel.: +49 (0) 211 78177950
e-mail: deutschland@ingeteam.com

Ingeteam Poland Spzoo

Ul. Koszykowa 60/62 m 39
00-673, Warsaw, Poland
Tel.: (+48) 22 821 99 30
e-mail: polska@ingeteam.com

Ingeteam LTD.
1st Floor, Midas House, 62 Goldsworth Road,
Woking, Surrey GU21 6LQ - United Kingdom
Tel.: +44 (0) 141 488 5290

NORTH AMERICA

Ingeteam Inc.
3550 W. Canal St.
Milwaukee, WI 53208 - USA
Tel.: +1 (414) 934 4100 / +1 (855) 821 7190
Fax: +1 (414) 342 0736
e-mail: usa@ingeteam.com

Ingeteam Power Technology S de RL de CV
Av. Ejercito Nacional Mexicano 351, Chapultepec
Morales, Granada, Manuel Hidalgo
CP: 11520
Ciudad de México, México
Tel.: (+52) 55 6586 9930
e-mail: proveedores.iptm@ingeteam.com

SOUTH AMERICA

Ingeteam Ltda.
Rua Estácio de Sá, 560
Santa Genebra
Campinas - SP
CEP: 13080-010; São Paulo - Brazil
Tel.: (+55) 19 30 37 37 73
e-mail: brazil@ingeteam.com

Ingeteam Chile SpA
Balmoral n.º 309, Piso 10º, Oficina 1008,
7561282 Las Condes
Santiago, Chile
Tel.: (+56) 229 253 825
e-mail: chile@ingeteam.com

ASIA

Ingeteam Power Technology Shanghai, Co. Ltd.
Room 2606-F, No.360 South Pudong Road
China (Shanghai) pilot free trade zone
C.P 200120
Tel.: +86 139 1622 4886
e-mail: liu.yimin@ingeteam.com

Ingeteam India Pvt. Ltd.
Survey No. 111/1-111/3 & 111/5-111/7,
Village No.155, Mambakkam Village,
Chennai - Bangalore Main Road,
Sriperumbudur Taluk,
Kancheepuram District - 602106,
Tamilnadu, India

Ingeteam Power Technology S.A. UAE Branch
Al Bateen tower c6 Bainunah 1st floor
Street 34
Abu Dhabi - UAE
Tel.: +971 2 207 6666

Ingeteam Power Technology S.A.
Thailand representative office
100/67 Vongvanij B Building, 22nd floor,
Rama IX Road., HuayKwang,
10320 Bangkok
Te.: +66 22461798
e-mail: Thailand.pga@ingeteam.com

Ingeteam Vietnam CO., LTD
Spaces Building, 28A Tran Hung Dao Street,
Phan Chu Trinh Ward Hoan Kiem District,
Hanoi City, Vietnam

AUSTRALIA

Ingeteam Australia Pty Ltd.
accelerate Centre, Building 239
Innovation Campus, Squires Way
North Wollongong, NSW 2500 - Australia
Tel.: +61 429 111 190
e-mail: australia@ingeteam.com

Ingeteam

www.ingeteam.com