

INTELLIGENT RAILWAYS SOLUTIONS





THINK AHEAD

Railways connect countries, businesses and people and require the most up-to-date engineering solutions. With over **25 years of experience** in the Baltic states, we have the skills and competence to tailor solutions for your needs from analysis through to consultancy and from concept to design and implementation.



Our track record with large rail infrastructure projects is a testimony to our reputation.

Janis Vilmanis
Chairman of the board SIA FIMA

A company of **intelligent** engineering solutions

An international company

FIMA is a leading provider of intelligent engineering solutions in the Baltic region, implementing communications, security, automation and data centre systems as well as **individually tailored solutions** for city infrastructure and the transport and energy sectors.

Ownership

FIMA's main shareholder is MVC Capital Inc., a New York Stock Exchange-listed business development company.

Experienced personnel

Over **500 professionals** from top-flight management to product engineering all work at FIMA.

FIMA group turnover

€81m

FIMA

- › Established in **1992**
- › Over **500** professionals
- › **HQ** in Vilnius
- › Operating in **Lithuania, Latvia, Poland** and **Belarus**

LATVIA **10** years of operation
70 employees
>100 implemented projects of various scopes and sizes

LITHUANIA

BELARUS

POLAND

From the idea to the operating system

Create



Our knowledge in project implementation, development and installation of intelligent engineering solutions is second to none, as is our confidence in offering solutions tailored to client needs.

Integrate



We represent a number of leading global brands and are able to integrate a multitude of products to ensure the seamless operation of multiple systems.

Manage



We have experience in leading large-scale and high-value projects as general contractor as well as in consortium with other partners.

Solutions for the public & private sectors



Transport infrastructure



Security & Defence



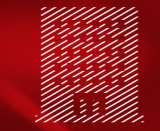
Energy infrastructure



Public administration



Telecommunications



Buildings infrastructure

From the idea
to the operating system

Trusted contractor

National railway companies, border control offices, electricity grid operators, data centre developers and many more have chosen us as their main contractor when it comes to implementing challenging projects.

Expertise in implementation

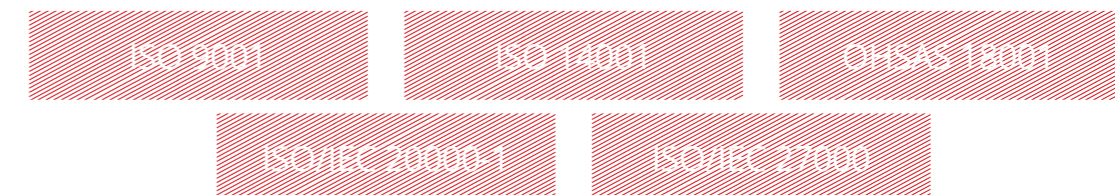
Nearly **15 000 projects** for the public and private sectors completed.

Wide supply of solutions:

- › Railways solutions
- › Intelligent transport systems
- › Information and communications technologies
- › Energy supply
- › Control & display
- › Automation & monitoring
- › Security
- › Data centre infrastructure
- › Other

High standards

Operations complying to **ISO 9001** quality management, **ISO 14001** environmental management, **OHSAS 18001** occupational health and safety management, **ISO/IEC 20000-1** IT service management and **ISO/IEC 27000** information security management standards.





Engineering competence in rail systems that conform to both **Western** and **Eastern** European standards.

Focus on railways

20

years in railways

€39 M

value of the biggest implemented railway project

140

employees are certified to work on rail projects

FIMA group

20 years of experience of designing and installing railway solutions. We lead when it comes to system integration for the modernisation of rail traffic control systems in the Baltic region with a consistent focus on the most up-to-date solutions and complex approaches.

Significant step in Poland



In 2017 FIMA acquired a controlling interest of 68% in Polish company **KZA (Krakowskie Zakłady Automatyki S.A)**, one of the leading Poland's railways signaling automation market players. The transaction gives FIMA access to one of the biggest railway infrastructure markets in Europe.

380 KM of railway lines modernised or reconstructed	75 stations where interlocking systems were modernised or reconstructed	110 level crossings modernised
1.335 KM of railways integrated into traffic control centres	90 stations integrated into traffic control centre	70 stations equipped with electric point heating systems
29 KM railway section electrified	>140 KM overhead contact line	

OUR COMPETENCE

- — ● Consulting
- — ● System design
- — ● System installation & commissioning
- — ● Client staff training
- — ● Service & maintenance

Introducing technologies provided by

AŽD Praha
Bombardier

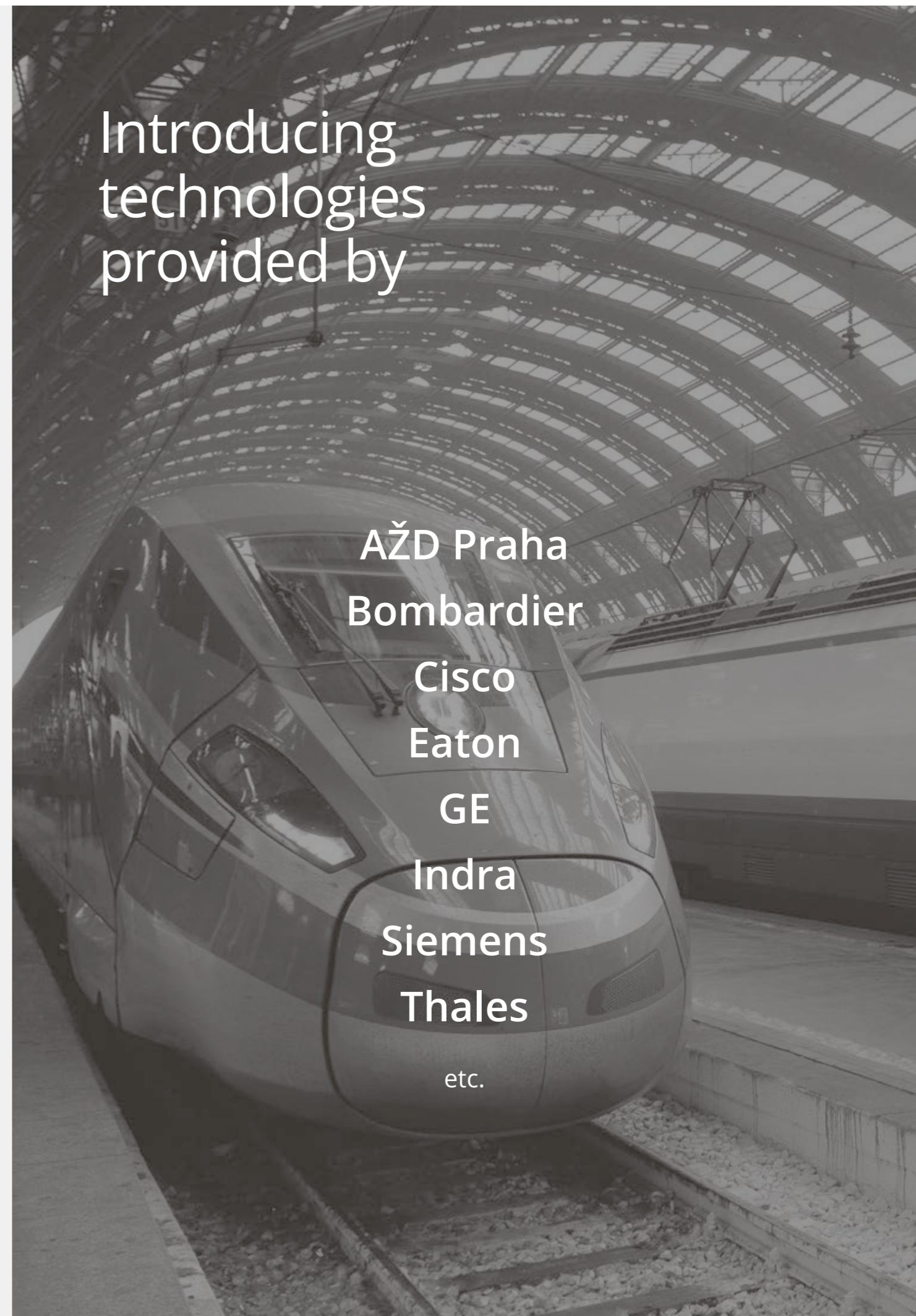
Cisco
Eaton

GE

Indra
Siemens

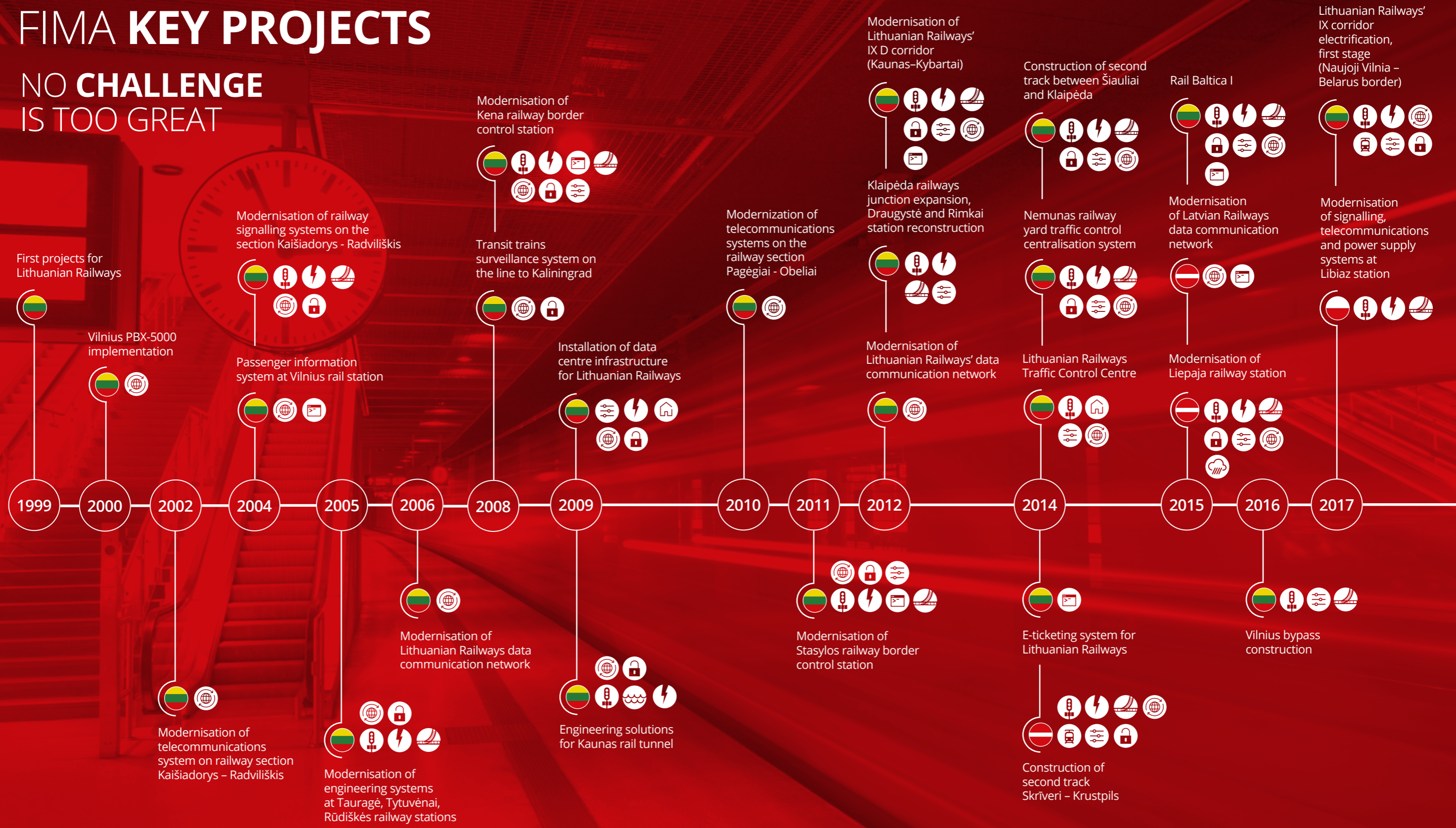
Thales

etc.



FIMA KEY PROJECTS

NO CHALLENGE IS TOO GREAT



- RAILWAY TRAFFIC MANAGEMENT
- SECURITY
- SCADA & DMS
- CATENARY NETWORK
- ELECTRIC POINT HEATING
- POWER SUPPLY
- BUILDING MANAGEMENT SYSTEM
- METEOROLOGICAL SYSTEM
- INFORMATION COMMUNICATION TECHNOLOGIES
- PASSENGER INFORMATION SYSTEMS
- GROUND WATER MONITORING SYSTEM

PUSH THE LIMITS

2010–2014 in **Latvia**
FIMA role: **Subcontractor**

FIMA implemented the most advanced traffic control, telecommunications and power supply systems on the line Skrīveri – Krustpils.

Technology partner

Bombardier

FIMA share in the project: **€17.8m**

Construction of **second track** Skrīveri – Krustpils

A second track was introduced on the railway line Skrīveri – Krustpils because the line had reached capacity.

FIMA implemented the most advanced systems on a new section of track on the line Skrīveri - Krustpils and also modernised the systems on the existing one. Over the course of the project, FIMA was responsible for the design and installation of traffic control, telecommunication, and power supply systems. The project comprised reconstruction of five stations and four open lines, implementation of signalling systems on 15 level crossings and installation of nearly 300 brand new signals.

Solutions:

- › Traffic control centralisation
- › Points and signals interlocking
- › Automatic line blocking
- › Electric point heating
- › Power supply and lighting
- › Level crossing signalling
- › Catenary network
- › Loudspeaker communication and staff warning
- › SCADA
- › Security alarm
- › Other

RECORD-BREAKING PACE

2014–2015 in **Latvia**
FIMA role: **Member of consortium**

**Complex construction work on site
that was completed in 7 months.**

Technology partner

Thales

FIMA share in the project: **€10.4m**

Modernisation of **signalling system** at Liepaja railway station

Liepaja railway station, one of the main Latvian rail junctions and a gateway to the port, had reached its operational limits because of outdated signalling and power supply systems.

FIMA was responsible for installation of the microprocessor-based points and signals interlocking, level crossing signalling and power supply systems as part of the modernisation of Liepāja Station. This involved installing new transformer substations, installing points and a level crossings lighting system, as well as the installation of new traffic lights around Liepāja Station. FIMA specialists were also in charge of linking the Liepaja traffic management system to the Riga Dispatch Centre and the installation of electric point heating and automation systems.

Solutions:

- › Traffic control centralisation
- › Points and signals interlocking
- › Level crossing signalling
- › Semi-automatic line blocking
- › Electric point heating
- › Power supply and lighting
- › SCADA
- › Security alarm
- › Access control
- › Video surveillance
- › Meteo station
- › Other

NETWORK OF **EFFORT**

2014–2015 in **Latvia**

FIMA role: **Member of consortium**

A very significant modernisation of Latvian Railways data transmission and information systems over a short period of time. More than 180 infrastructure objects upgraded by FIMA.

Technology partners

Cisco

FIMA share in the project: **€2.1m**

Modernisation of **data transmission** network for Latvian Railways

Latvian Railways data transmission infrastructure is crucial for the further development of an integrated transport system, improving railway traffic safety and contributing to the growth of freight volume. The project implemented by FIMA and its partners was the largest such upgrade of communication systems in the history of Latvian Railways. FIMA undertook the design and construction of a fibre-optic based main data transmission network, local network in stations, power supply, voice over IP communication and two-way railway station loud speaker communication systems.

Solutions:

- › Data communications network
- › Audio announcements system

ELECTRIC BOOST

2014–2016 in **Lithuania**
FIMA role: **General contractor**

**First catenary network in Lithuania
in more than 40 years implemented.**

For overhead contact line construction,
FIMA owns and operates overhead
line rolling wagons.

FIMA share in the project: **€26.4m**

Railway electrification project

FIMA designed and constructed a new catenary network on a 28.6 km section of track including construction of foundations and the erection of all the necessary metalwork. The project also included the installation of a brand new traction substation, power supply network and SCADA control system. More than 1500 pillars with cantilevers were erected and more than 120 km of overhead contact line was strung on the section from Naujoji Vilnia to the Belarus border including three railway stations. Special machinery was used for stretching the carrying cable and overhead contact line quickly and accurately.

Solutions:

- › Catenary network
- › Traction substation
- › Power supply network
- › Uninterrupted power supply system
- › Points and signals interlocking
- › Automatic line blocking
- › SCADA
- › Data communications network and security
- › Video surveillance
- › Perimeter control
- › Other

ON TRACK TO WESTERN EUROPE

2013–2015 in **Lithuania**
FIMA role: **Subcontractor**

One of the most complex transport infrastructure projects involving a number of works running simultaneously on different sections of track completed in very short period.

Technology partners

AŽD Praha, Bombardier, GE

FIMA share in the project: **€28.7m**

Rail Baltica I

The aim of the project Rail Baltica I was to construct a track of a new gauge (1,435 mm) and in parallel to reconstruct the existing gauge line (1,520 mm) connecting the city of Kaunas with Poland. FIMA contributed with the reconstruction of the systems that supported the Eastern European gauge track. The reconstruction of traffic control, telecommunications, power supply and other systems was carried out on the section of 108 km including 9 stations.

This was an exceptional project due to the scope of the work needed and the fact that all of it had to be carried out simultaneously. New gauge track construction and the reconstruction of the existing line comprised 7 separate projects and 14 contracts with five general contractors. Rail traffic continued to run while the work was carried out.

Solutions:

- › Traffic control centralisation
- › Points and signals interlocking
- › Level crossing signalling
- › Automatic and semi-automatic line blocking
- › Electric point heating
- › SCADA
- › Power supply and lighting
- › Technological and enterprise communications
- › Loudspeaker communication and staff warning system
- › Data communications networks and security
- › Visual passenger information systems
- › Audio announcements and evacuation warning
- › Video surveillance
- › Other

PROJECTS OF ANY SCALE

2009–2012 in **Lithuania**
FIMA role: **Leader of consortium**

The largest and most complex railway modernisation project in Lithuania, including a large number of components, systems and work on a 110 km section of rail track.

Technology partners

AŽD Praha, Eaton

FIMA project value: **€38.6m**

Modernisation of the Lithuanian Railways IX D corridor

Part of the Lithuanian national strategic rail development plan, the railway corridor IX D project saw FIMA and its partners designing and upgrading signalling, telecommunications and power supply systems at Kaunas station, on the Palemonas–Rokai–Jiesia detour and on the line between Kaunas and Kybartai. A computerised rail traffic control system meant that all management of rail traffic, signalling and the power supplies at all stations and level crossings could be managed from the Vilnius traffic control centre.

This project was unique because of its scope and the complexity of engineering involved – a large number of components and systems were used and the length of track was 110 km. FIMA was responsible for managing more than 50 sub-contractors during the project.

Solutions:

- › Traffic control centralisation (microprocessor-based)
- › Points and signals interlocking
- › Level crossing signalling
- › Electric point heating
- › Power supply and lighting
- › SCADA
- › Technological and enterprise communications
- › Data communications networks & security
- › Security alarm
- › Fire alarm and extinguishing
- › Video surveillance
- › Other

EVERYTHING UNDER CONTROL

2010–2014 in **Lithuania**
FIMA role: **Subcontractor**

Introduction of centralised traffic management and control along all Lithuanian rail network.

Partner with

Indra

FIMA share in the project: **€4.4m**

Lithuanian Railways traffic control centre

Lithuanian Railways implemented a significant project which involved the creation of a Traffic Control Centre, enabling the company to manage its technological processes on the national railways network as well as a number of different signalling technologies.

To fulfil its role in the project, FIMA designed and installed two independent SCADA management systems. The first – a power supply control system – is used to manage and control the power supply on the rail network from a central location. The second – an electric traction control system – is used to manage and control the catenary network's substations and involved the installation of 20 substation control systems (RTU).

Lithuanian Railways uses a variety of rail traffic control systems and there is limited interoperability between them. FIMA has successfully put in place the necessary interfaces for these systems at more than 30 legacy stations and integrated them with the rail traffic control centre system.

All of the systems that were installed are future-proofed and ready for further development of the rail management infrastructure and catenary network.

Solutions:

- › SCADA
- › Traffic control centralisation
- › Axle counting
- › Data communications networks and security
- › Building management system

CHALLENGE AT THE **FRONTIER**

2003–2005; 2006–2008; 2007–2011 in **Lithuania**
FIMA role: **Member of consortium**

Expansion and modernisation of rail stations as part of strengthening the EU's external border as required by the Schengen Treaty.

Technology partner
Bombardier

FIMA share in the project: **€14.5m**

Construction of Kena and Stasylos railway **border control** stations

The new border inspection posts on the railway at Stasylos and Kena were established as required by the Schengen Treaty. The projects were extraordinarily demanding because of the security, scope and complexity of the systems implemented. Three separate projects at Kena and Stasylos stations were implemented over a period of time. FIMA provided engineering systems, including micro-processor-based points and signals interlocking, traffic control and a level crossing signalling, communications systems in a new passenger transport inspection post as well as security and other engineering solutions for new buildings. A new state border perimeter security system was introduced.

Solutions:

- › Traffic control centralisation
- › Points and signals interlocking
- › Automatic and semi-automatic line blocking
- › Technological and enterprise communications
- › Loudspeaker communication and staff warning system
- › Electric point heating
- › Power supply and lighting
- › Uninterrupted power supply systems
- › SCADA
- › Video surveillance
- › Perimeter control
- › Security alarm
- › Fire alarm and extinction
- › Clock system
- › Other

ON THE **SECOND** TRACK

2012–2014 in **Lithuania**
FIMA role: **Subcontractor**

Introduction of a second track to increase the line's capacity and speed of both freight and passenger trains, saving time, reducing noise, pollution and risk of accidents.

Partner with
Indra, Siemens

FIMA share in the project: **€7.1m**

Construction of **second track** on the rail sections between Šiauliai and Klaipėda

The objective of the project was to increase traffic throughput on the 16.6 km sections of railway between Šiauliai and Klaipėda. FIMA implemented a number of new systems on the new second track and reconstructed the systems on the existing track, including traffic control, point heating, telecommunications, power supply and lighting.

The works also included reconstruction of signalling systems at three stations and installation of three double track block posts on open lines.

Solutions:

- › Points and signals interlocking
- › Level crossing signalling
- › Automatic line blocking
- › Electric point heating
- › SCADA
- › Power supply and lighting
- › Technological and enterprise communications
- › Loudspeaker communication and staff warning
- › Data communications networks & security
- › Video surveillance

SAFETY IN MIND

2016–2017 in **Poland**
FIMA role: **Subcontractor**

Facilitating passenger travel, freight and safety on Polish railway section.

Partner with
Skanska

FIMA share in the project: **€1.6m**

Modernization of signalling, telecommunications and power supply systems at **Libiaz railway station**

Being part of a consortium working on modernising infrastructure at the Libiaz railway station in Poland, FIMA was responsible for the upgrading of the signalling, communications and power supply.

FIMA's responsibilities included the design of the rail signalling system, installation of signalling equipment and a semi-automatic line blocking system on the interim stations between Libiaz and Chelmek and Libiaz-and Chrzanow. It also installed axle counting, point and signal interlocking and electric point heating, emergency braking, station lighting and all of the necessary cabling.

A total of nine kilometres of track and 22 points were renovated and the station's platforms were redesigned.

Solutions:

- › Points and signals interlocking
- › Level crossing signalling
- › Semi-automatic line blocking
- › Axle counting
- › Electric point heating
- › Power supply and lighting

TICKET TO RIDE

2012–2014 in **Lithuania**
FIMA role: **General contractor**

An integrated electronic booking and ticketing system for Lithuanian railways was introduced for the first time.

FIMA share in the project: **€1.3m**

E-ticketing system for Lithuanian Railways

Lithuanian Railways' booking and e-ticketing system, which was implemented by FIMA, integrates multiple methods of ticketing. It ensures that bookings and ticket sales at rail stations and online are managed by the same system and also provides completely automated accounting. The system has an interface with the company's SAP data management system as well as a module that provides journey updates and pricing information for passengers.

During the project, all ticket offices were equipped with the new ticketing software. The on-board ticket sale system was also renewed, providing train controllers with new devices for ticket sale and verification of tickets sold online.

Solutions:

- › Specialised software
- › Website
- › Cash machines
- › Ticket checking equipment

SOLUTIONS FOR EVERY TASK



Railway traffic management:

- › Traffic control centralisation
- › Points and signals interlocking
- › Level crossing signalling
- › Locomotive control automation
- › Automatic rolling-stock control
- › Automatic and semi-automatic line blocking
- › Axle counting



Catenary network



Electric point heating



SCADA & DMS



Power supply:

- › Power substation equipment and installation
- › Power supply network
- › Uninterrupted power supply systems
- › Lighting equipment



Information communication technologies:

- › Technological and enterprise communications
- › Loudspeaker communication and staff warning
- › Data communications networks & security
- › Data centres
- › Video conferencing



Passenger information systems:

- › Visual passenger information systems
- › Audio announcements and evacuation warning
- › E-ticketing
- › Clock systems



Security:

- › Security alarm
- › Access control
- › Fire alarm and extinguishing
- › Video surveillance & analytics
- › Perimeter control

Other:

- › Parking systems
- › Meteorological systems
- › Building management systems
- › Ground water monitoring systems
- › Automatic gauge control systems
- › Other

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