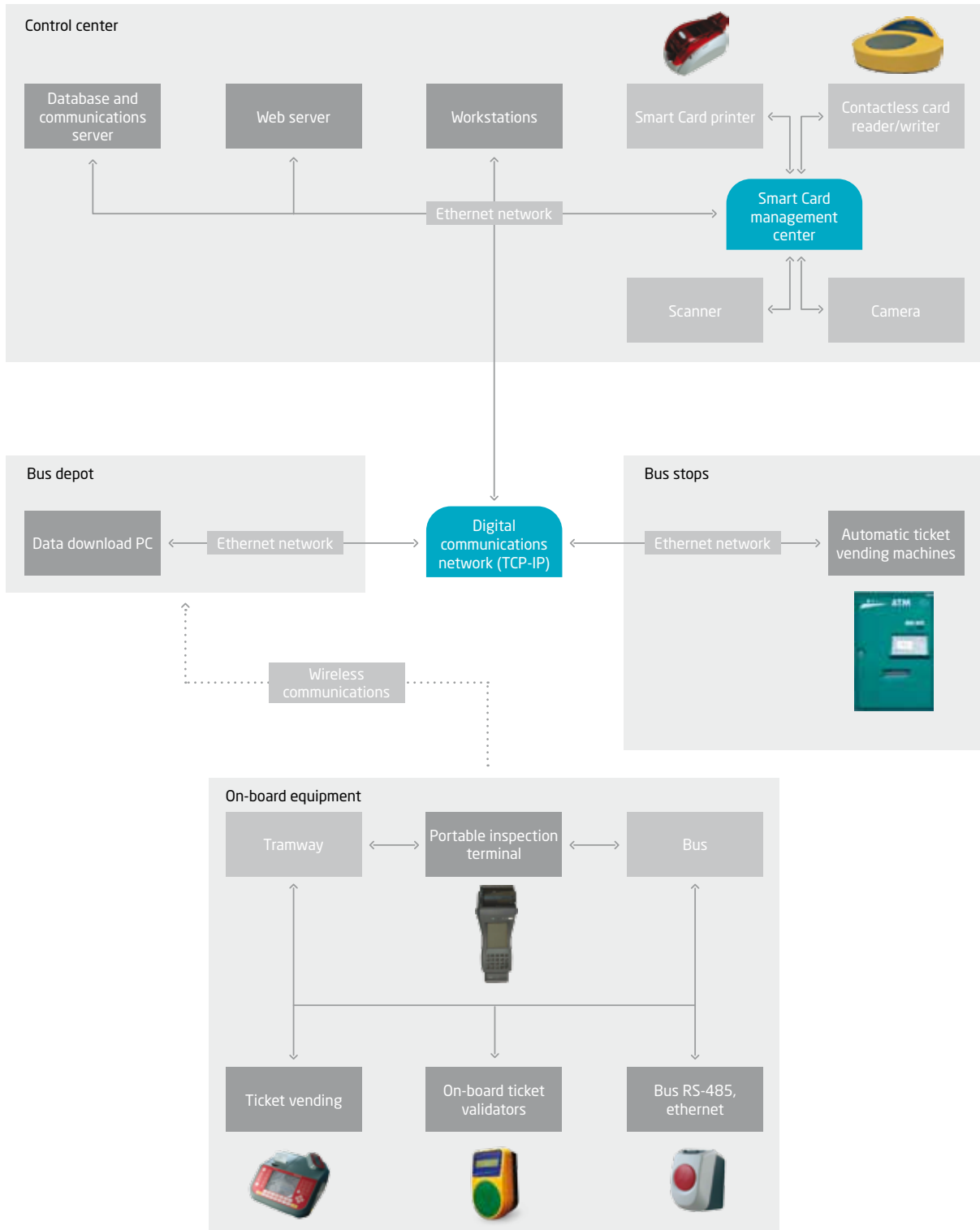
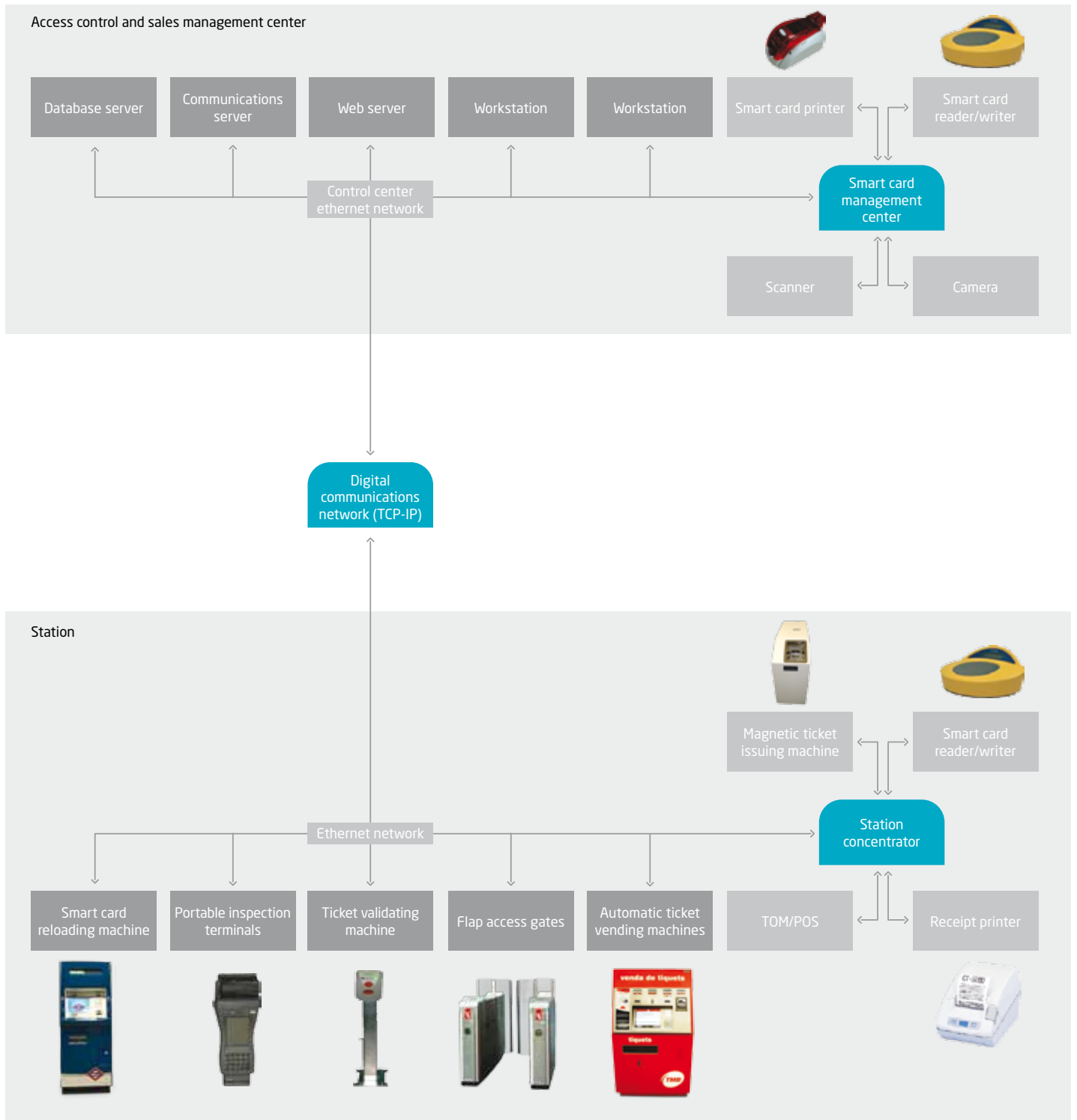


On-board systems. General architecture



Automatic fare collections systems. General architecture





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Indra reserves the right to
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ISO 9001:2000





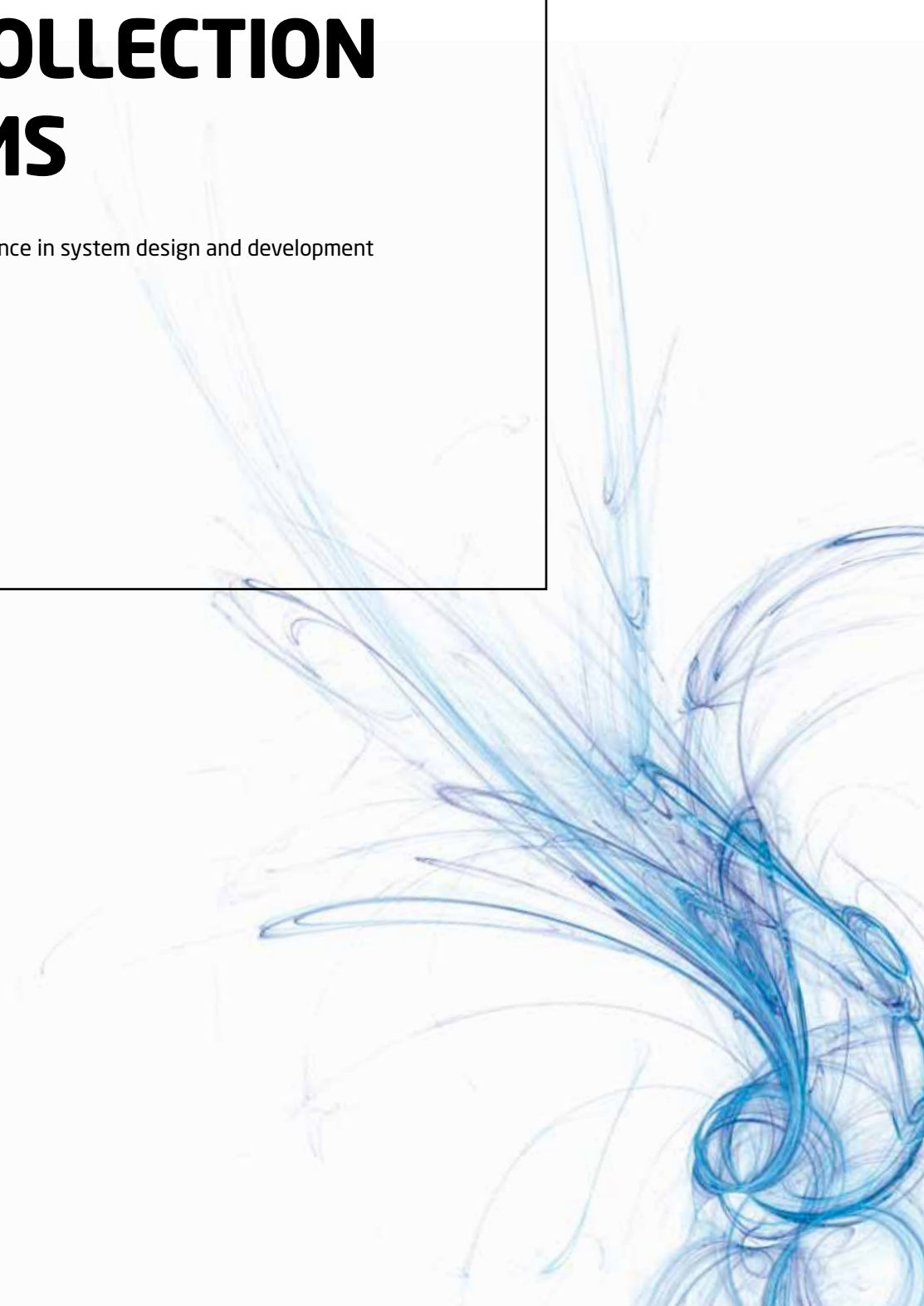
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TRANSPORT AND TRAFFIC

AFC AUTOMATIC FARE COLLECTION SYSTEMS

More than 25 years experience in system design and development

indracompany.com



AFC AUTOMATIC FARE COLLECTION SYSTEMS



Coin and note ticket vending machine



Card only ticket vending machine



More than 25 years experience in system design and development

Ticket vending systems

Indra's ticket vending systems include station and on-board automatic ticket vending machines (ATVMs) and operated sales terminals (booking office machines and portable sales units).

Over the last 25 years, Indra has designed, developed, manufactured and supplied more than 40 different models of state-of-the-art ATVMs. These machines are extremely reliable, versatile, robust, user-friendly and entirely customisable according to each customer's needs.

Features

- Ticket issuing system:
 - Plain paper tickets
 - Magnetic stripe tickets (high or low coercivity)
 - Smart paper tickets (ISO 14443 Type A & B)
 - Smart cards (contact and contactless ISO 14443 Type A & B)
 - Smart tokens (ISO 14443 Type A & B)
 - In any format (Edmonson, ISO, fanfold, cutouts, custom...)
 - And material (paper, plastic...)
 - 2, 3 or 6 ticket rolls per machine
- Designed for use in stations and on board buses and trains
- Smart card add-value feature
- Thermal or dot matrix printing
- Payment system: coins, banknotes, credit/debit cards (EMV), contact smart cards, contactless smart cards
- Industrial PC-based control unit
- Real-time operating systems (Unix, Linux, Windows)
- Software easily adaptable to any fare scheme and/or intermodal transport policy
- Flexible communications capabilities: serial, LAN Ethernet, Wi-Fi, GPRS...
- Customisable and user-friendly graphical interface and design:
 - Adapted to people with disabilities (ADA and DDA-compliant)
 - Braille signs and voice-guided menu navigation system
- Security: strong stainless steel cabinets, reinforced hinges and locks, sensors, real-time monitoring and alarm system

Access Control Systems

Indra's access control systems include several types of gates specially designed for public transport and public venues (theme parks, stadia...) operators. Our vast experience enables us to offer each of our clients a specific solution ensuring optimal values of passenger flow, comfort, reliability and durability, whilst minimising fraud.

All of our systems are always developed and manufactured following the strictest of quality controls and customer requirements.

Features

- Access gates:
 - Sliding-door flaps
 - Turnstiles (in-station and on-board)
 - Special wide gates for disabled people
 - Brushed stainless steel finish
- Built-in gate ticket validators:
 - Magnetic stripe tickets (high or low coercivity)
 - Smart paper tickets (ISO 14443 Type A & B)
 - Smart cards (contact and contactless ISO 14443 Type A & B)
 - Smart tokens (ISO 14443 Type A & B)
 - Thermal or dot matrix printing
- Flexible communications capabilities: serial, LAN Ethernet, Wi-Fi, GPRS...
- Anti-fraud photocells
- Operational modes:
 - High-speed mode
 - Constant flow mode
 - Anti-panic mode
- Locally or remotely-loaded software and hotlist updates
- Adapted to people with disabilities (ADA and DDA-compliant)



Flap access gates



Access control



Access control (Turnstiles)

On-board systems

Our fare collection solutions include equipment specifically designed to be used in buses, trains and trams. These are automatic ticket vending machines, ticket validators, driver consoles and turnstiles.

Special on-board conditions (i.e. vibrations, high operating speeds) have led to the development of specific systems and products that perfectly cover the needs of any transport operator within this sector. These products and systems are adequately complemented with those aimed at other transportation means and, therefore, offer global and integrated solutions for the different intermodal scenarios.

Features

- Automatic ticket vending machines:
 - Payment: coins, banknotes, credit/debit cards (EMV), contact smart cards, contactless smart cards
 - Ticket issuing system: plain paper tickets, magnetic stripe tickets (high or low coercivity), and smart paper tickets (ISO 14443 Type A & B)
 - GPRS modem connection to central system
- Ticket validators:
 - Magnetic stripe tickets (high or low coercivity)
 - Smart paper tickets (ISO 14443 Type A & B)
 - Smart cards (contact and contactless ISO 14443 Type A & B)
 - Smart tokens (ISO 14443 Type A & B)
 - Thermal or dot matrix printing
- Driver consoles:
 - Control all on-board equipment
 - Built-in smart card ticket validator
 - TFT colour screen
 - Thermal printer
- Flexible communications capabilities: serial, LAN Ethernet, Wi-Fi, GPRS...
- High-resistance plastic and metal casings and cabinets
- Flexible, reliable, robust and user-friendly



On-board ticket vending machine



Mobile ticket validator



Driver console

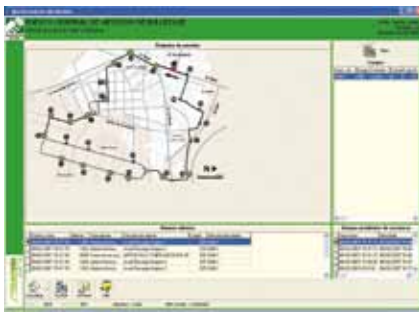


Ticket validator

Central control systems and clearing systems

Indra is one of the largest fare collection systems integrators in the world, and the absolute leader in the Spanish market. Since 1986, Indra has been successfully developing and delivering dozens of automatic fare collection and access control projects. Our reference list includes all large public transport operators within Spain, and is further complemented with customers in many other countries around the globe, for instance Argentina, Belgium, Chile, China, Greece, Mexico, Portugal, the United States, and Venezuela.

Indra offers transport operators a complete end-to-end range of products and tailor-made systems for fare collection, including the central control



Parla control centre

system (CCS), the smart card management system, the multi-operator clearing system, the station computers, automatic and operator-assisted ticket vending machines, access control equipment, and on-board systems.

Real-time control, monitoring and administration of the entire fare collection system hardware and software is done from the CCS. The CCS user interface is friendly, intuitive and web-based. Equipment and CCS data is securely processed and stored in the system database, and then converted into useful information for the transport operators' financial, planning and operational departments. This allows for superior levels of efficiency, productivity, flexibility and customer satisfaction.



Mexico suburban train

Features

- High data security
- Open architecture
- Fully upgradeable and expandable
- Flexible communications capabilities: serial, LAN Ethernet, Wi-Fi, GPRS...
- Web-based, friendly user interfaces
- Easy and fast implementation of fare scheme changes
- Intermodal multi-operator financial clearing system
- Working development (information management, maintenance, configuration)
- Enhancement of customer service quality
- Fraud and evasion control



St. Louis metro control centre

Main clients

Argentina

Trenes de Buenos Aires (TBA)

Belgium

STIB (Brussels Metro)

Chile

Empresa de los Ferrocarriles del Estado (EFE)

Metro de Santiago

Metro Regional de Valparaíso (MERVAL)

China

Binhai Mass Transit

Shanghai Metro

Czech Republic

Prague Transport Company

Egypt

Cairo Metro

Greece

Attiko Metro

India

Mumbai Metro One

Mumbai Monorail

Delhi Airport Metro Express

Mexico

Suburbano de México

Portugal

Atlantic Ferries

Metropolitano de Lisboa

Spain

ADIF

Alicante Tramway

ATM (Barcelona)

Barcelona Tramway

Bilbao Tramway

Consorcio de Transportes de Bizkaia (CTB)

Consorcio de Transportes. Área de Sevilla

Consorcio de Transportes. Área de Málaga

Consorcio Transportes Asturias (CTA)

Consorcio Regional de Transportes de Madrid

De Blas y Cía.

Empresa Malagueña de Transportes (EMTSAM)

EMT (Fuenlabrada)

EMT (Madrid)

Entitat de Transport Metropolità de Valencia

EuskoTren

Ferrocarriles de Vía Estrecha (FEVE)

Ferrocarrils de la Generalitat de Catalunya (FGC)

Ferrocarrils de la Generalitat Valenciana (FGV)

Metro Barcelona

Metro Bilbao

Metro Ligero de Madrid

Metro Madrid

Metro Valencia

Mintra

Parla Tramway

RENFE

Transports Metropolitans de Barcelona (TMB)

Transportes Urbanos de Sevilla (TUSSAM)

Valencia Tramway

United States

Capital Metropolitan Transport Authority

Metro St.Louis

Venezuela

Alcaldía de Caracas (Caracas Municipality)

Metro de Maracaibo