FRANCE

CLEARSY
Safety Solutions Designer

2021 - 2023

RAILWAY SAFETY
SYSTEMS & PRODUCTS

www.clearsy.com

PLATFORM SCREEN DOORS CONTROL

Device to open and close platform screen doors, safety critical SIL3 or SIL4 systems.
Based on a train track communication: DOF
In operation in PARIS

Just track side system: COPPILOT. In operation in SAO PAULO and STOCKHOLM

CONTROLLER AND SAFETY I/O NETWORK

Safety remote controller and Mixed SIL0, SIL2, SIL4 I/O network: SATURN

DETECTION OF A PERSON IN A GAP

Between platform doors and train: DIL - SIL3
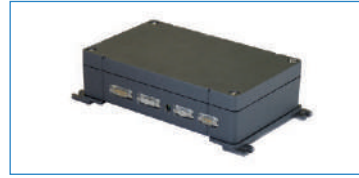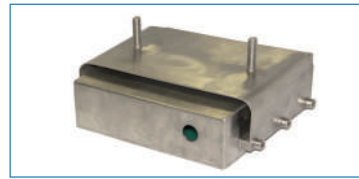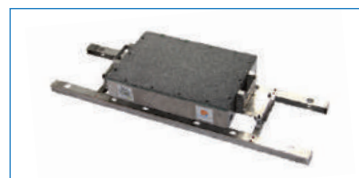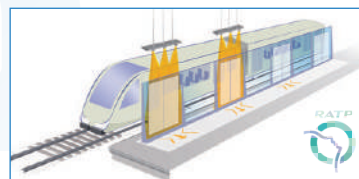
Track safety monitoring

AUTOMATIC TRAIN STOP

Overspeed and zone crossing: KFS

In operation in Paris, Valenciennes, Lyon, Nice, Baku, Corsica

PLATFORM DETECTION

Opening and closing gap filer authorization: GAPS

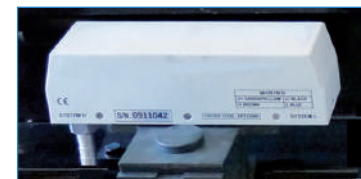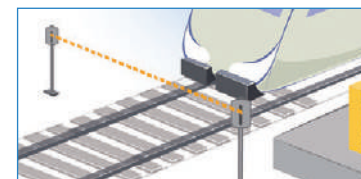## TRAIN DETECTION AND LOCATION

Hyper frequency technology: DNH barrier

SIL4 Axle counter and wheel sensor

Steel wheel: DRF

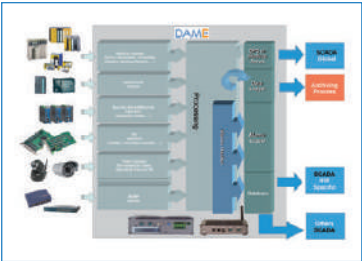Pneumatic train, streetcar, people mover and monorail: DRF MP

SAFETY DISPLAY

ETCS Baseline 3: K-VISION
Programmable platform in option

Partnership: CENTRALP

DATE LOGGER / MONITORING

High-performance railway operation SCADA. Data Logger Master Monitoring system
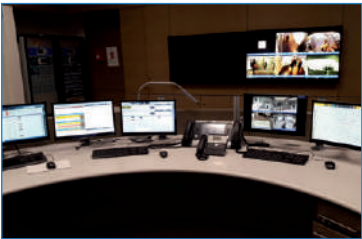

SIL4 VITAL RELAYS

Interface, embedded and interlocking applications: **RS4 technology**

REFERENCES	SIL4 NO CONTACTS	NC CONTACTS
RS4.DIN.202.24V	2	2
RS4.3U.202.24V	2*2 (2 relays 202)	2*2
RS4.DIN.304.24V	3	4
RS4.DIN.402.24V	4	2
RS4.DIN.406.24V	4	6
RS4.DIN.202.110V	2	2
RS4.B.24.0.24	24 contacts right and left	

FIRE SAFETY SYSTEM SUPERVISION

SIL2. Deployed in PARIS

VITAL COMPUTER

CLEARSY SAFETY PLATFORM

To design your own SIL4 system based on this already certified computer
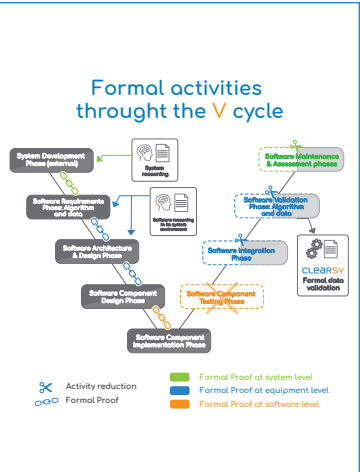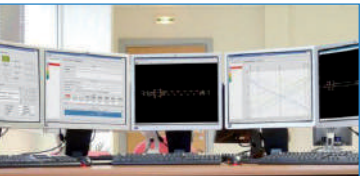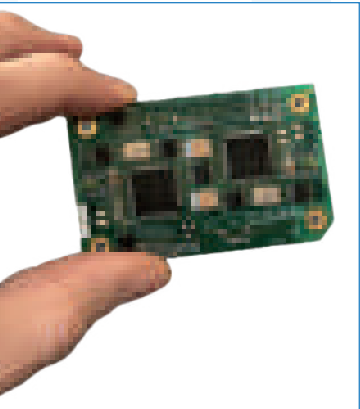

SIMULATION TOOLS AND TEST BENCHES

Various simulators and test bench environment to validate components, on board and trackside; for ETCS baseline 2 to and 3

FORMAL APPROACH FOR CRITICAL SYSTEMS

Up to **« unattended train operation (UTO) »**: Atelier B tool and B method

• System analysis, property proof
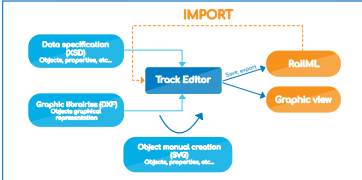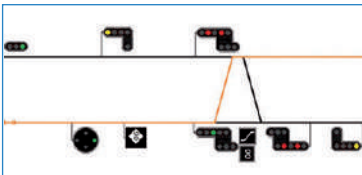
• Automatic production of safety critical code

VALIDATION/ VERIFICATION OF SAFETY CRITICAL DATA
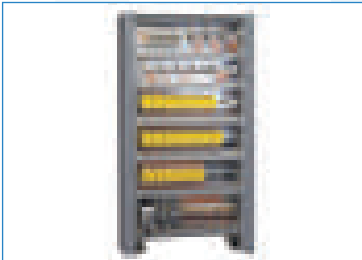
CLEARSY Data Solver

TRACK PLAN EDITOR

to help users implement their track plan, from initial design to commissioning
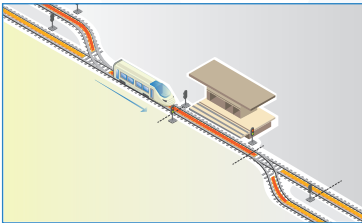

INTERLOCKING

Based on on the shelf PLCs and vital interface relays

SAFE TRAIN LOCATION

Based on a track magnetic loop and a SIL4 vital on board computer

cleaRSY

Safety Solutions Designer

CLEARSY develops its expertise in designing safety systems and software. We offer scalable independent or integrated solutions that meet the highest standards. We control for this purpose B formal method tools and safety intrinsic hardware know-how. Our range of safety systems for the rail industry combines both reliability and availability.
These systems can achieve levels of safety SIL2, SIL3 or SIL4 according to your needs and they are, in all cases, turnkey.

We design custom systems based on your specific needs.

in **CLEARSY**

🌐 clearsy.com

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