



Clearsy

Provides safety critical systems and softwares

Fersil is the railway activity of
Clearsy



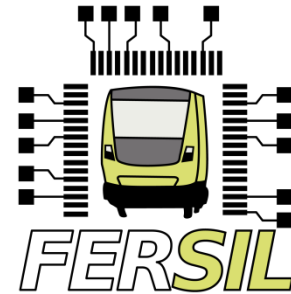
Clearsy



- Provides safety critical systems SIL2 to SIL4
- Provides safety critical softwares SIL2 to SIL4
- Uses the B formal method to develop it
- Provides the safety cases
- Develops the software toolkit development :
Atelier B, used by Alstom and Siemens to develop
ATP Safety critical systems



Railway Customers



THALES

vossloh



ALSTOM

ENIM

FORCLUM



SIEMENS

AREVA



Clearsy



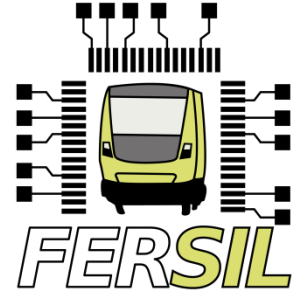
develops and distributes

SAFETY SYSTEMS

- DOF1
- COPP
- KPVA
- KFS

B FORMAL METHOD TOOL

- ATELIER B

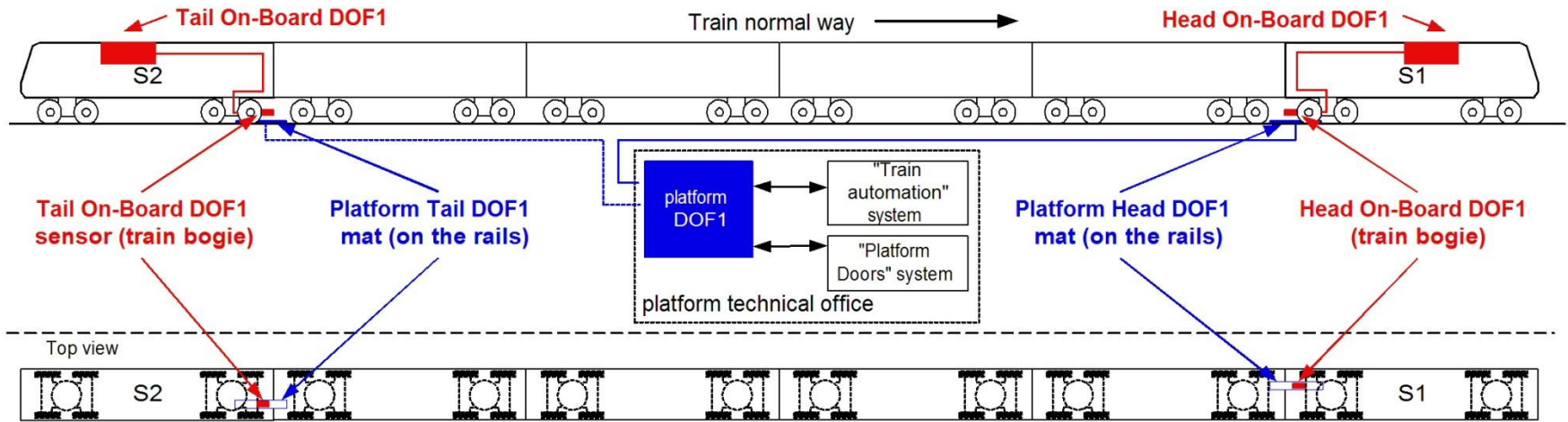


DOF1 System – SIL3/4

Paris Line 1

- opening and closing platform screen doors system
- Safety critical SIL3 system
- To be installed on all the line 1 of Paris, currently in test in many stations
- SIL4 authorization of the opening and closing train doors

DOF1 SIL4



sensor



On board DOF1



Automaton



mat



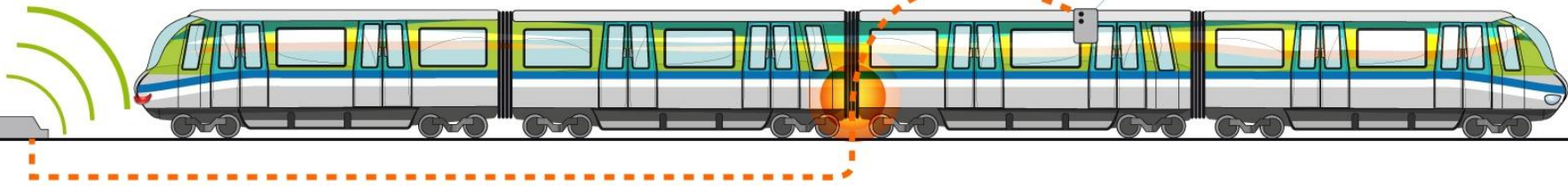
KPVA



Independant system control of speed train ;
installed in all the lines in Paris

Sharp Breaking control when overspeed

KFS Block



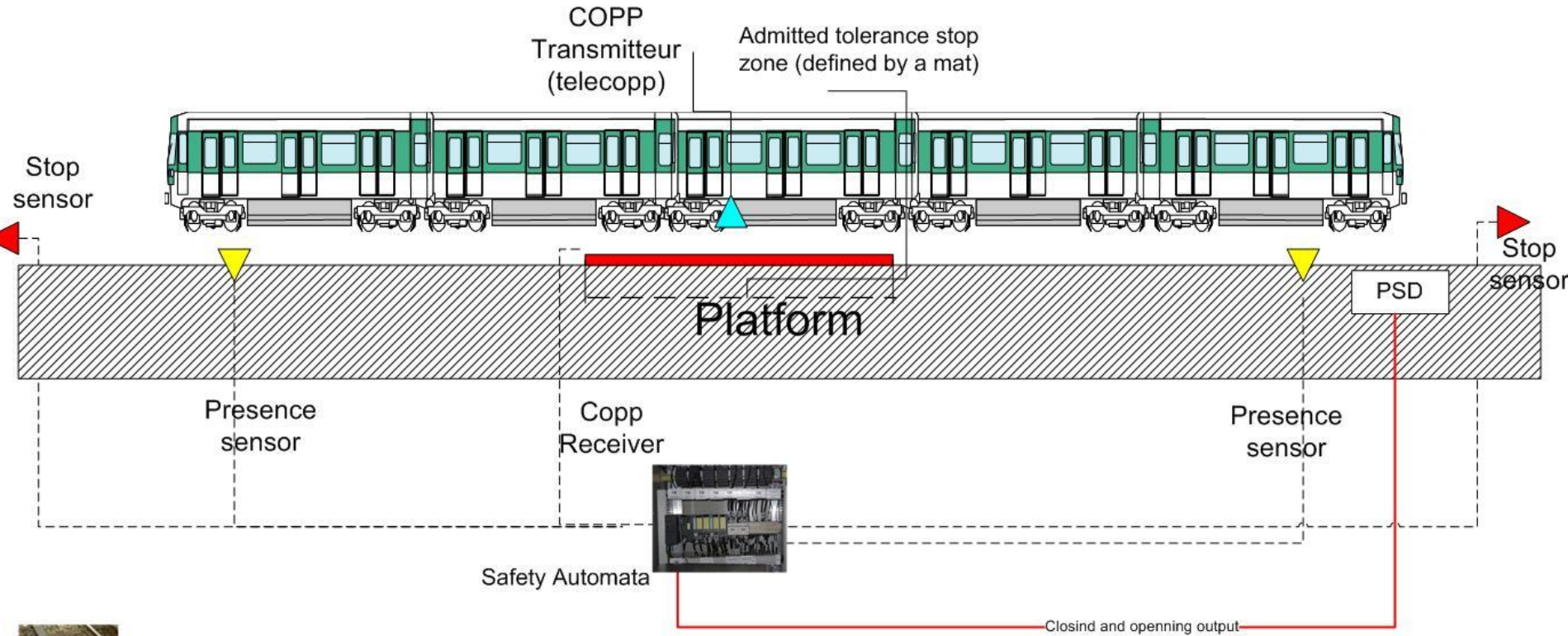
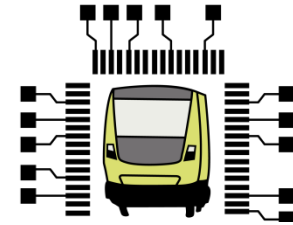
Beacon

COPP System – SIL3

Châtillon – Montrouge

- opening and closing platform screen doors system
- Safety critical SIL3 system
- In Châtillon station (line 13 of Paris)
- Included in the Automatic Turnback system
- Controlling the presence of the train stopped in the station, in the available zone

COPP SIL3



Mat : loop antenna, defines the admitted stop zone



Speed sensor (radar) : to ensure that the train is stoped



COPP tranceiver : transmission of the opening and closing train doors informations



Infra-red presence sensor : to confirm the presence of the train



Automatic Turnback

Châtillon - Montrouge



DAAT-KFS



System to stop the train
when it goes across a closed signal (red)



Sharp Breaking control when crossing signal
KFS Block

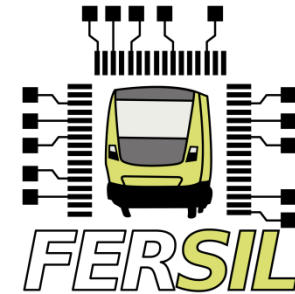


Ground KFS Beacon



KFS sensor

B formal method in the world





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