



PARIS
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INTERNATIONAL
RAILWAY SAFETY COUNCIL

▶ Crisis Management in a cross-border Railway Line

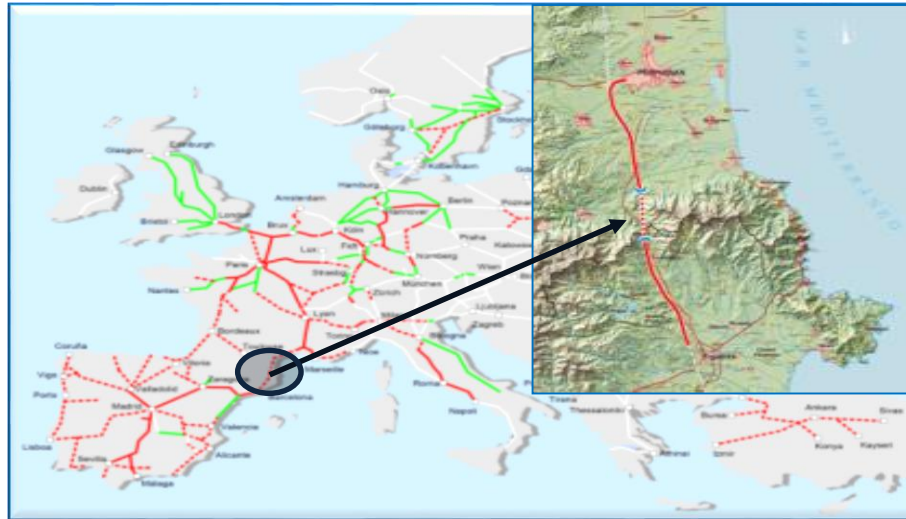
The Case of the Perpignan-Figueras Line...

Petros PAPAGHIANNAKIS – Chief Executive Officer, TP Ferro



WHO IS TP FERRO?

TP Ferro is a rail Infrastructure Manager (IM) operating and maintaining the high-speed line between Perpignan (F) and Figueras (E)



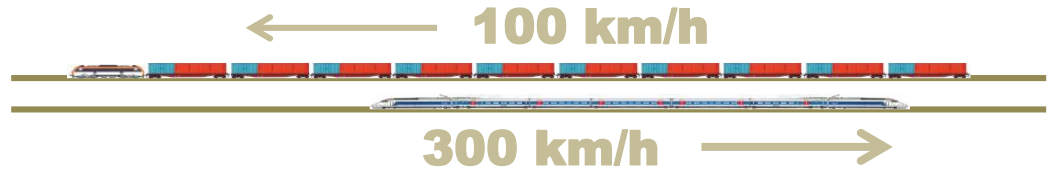
THE LINE...

- ▶ Makes part of the European Core Network
- ▶ It is the sole and unique link with international UIC gage track between Spain and Europe
- ▶ Capacity of more than 100 trains/day, equivalent to 10 million passengers/year and 20 millions of tons of freight/year



INNOVATIONS

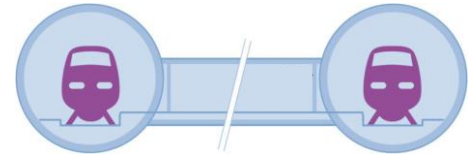
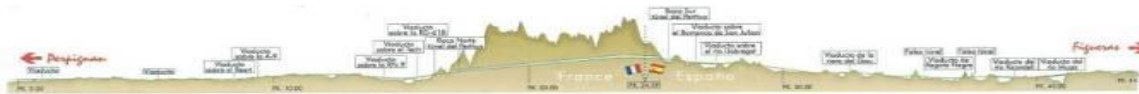
- ▶ Mixed-traffic line



- ▶ Cross-border : in case of accident, rescue operations are carried out jointly by TP Ferro, Spanish and French rescue services



- ▶ Long tunnel below the Pyrenean chain



CHALLENGES

During crisis situations, TP Ferro is attempting to reconcile two antagonistic requirements:

- ▶ minimizing the consequences to mobility in a major European Corridor
- ▶ ensuring the maximum level of safety

... In a very complex environment !

EARLY WARNING

TP Ferro implements an early warning system of any situation that could potentially lead to a crisis (accident or attack)

- ▶ By technical means allowing an early detection of any unsafe operational situation (fire, derailment, collision)
- ▶ By a permanent monitoring of the IT networks to detect any cybernetic attack
- ▶ By exchange of information with National Security and Defence Authorities regarding potential “attack” risks

RISK MITIGATION

Extensive variety of risks

⇒ Mitigation measures on ALL components of the railway system :

- ▶ Technical components of the infrastructure
- ▶ Human components
- ▶ Organisational components

TECHNICAL COMPONENTS

Line designed following 4 main objectives :

- ▶ High protection and early warning/detection of abnormal situations
- ▶ Minimizing consequences
- ▶ Facilitating the operational response and crisis management
- ▶ Offering high-quality and uninterruptible communications

Several equipment and systems are implemented :

- ▶ Protection systems in the operations' IT networks
- ▶ Safety detectors on both open-air sections and tunnel
- ▶ Secured radio-communication system for TP Ferro's staff (GSM-R)
- ▶ Secured radio-communication system for rescue services
- ▶ CCTV with intrusion detection on the tunnel's portals
- ▶ Crisis rooms, equipped with several control screens and communications equipment hosting the national authorities of the TWO COUNTRIES

HUMAN COMPONENTS

At top level management :

- ▶ direct involvement of the COO : specific authorisation to handle “defence & security” confidential matters and receive confidential notices from the national defence and interior security authorities
- ▶ direct involvement of the CSO : specific authorisation to handle “defence & security” confidential matters (same as above)

At an operational level :

- ▶ Fixed security agents positioned on a 24h/day basis at the critical sites
- ▶ Mobile security agents (patrols) along the line on a 7d/week basis
- ▶ IT Department monitors IT systems to prevent cybernetic attacks
- ▶ Maintenance Department monitors operational safety systems to prevent intrusions
- ▶ Control Center monitors the tunnel on a 24h/day basis by means of CCTV
- ▶ All TP Ferro’ personnel receives a specific training for full awareness of the risks and safety/security measures

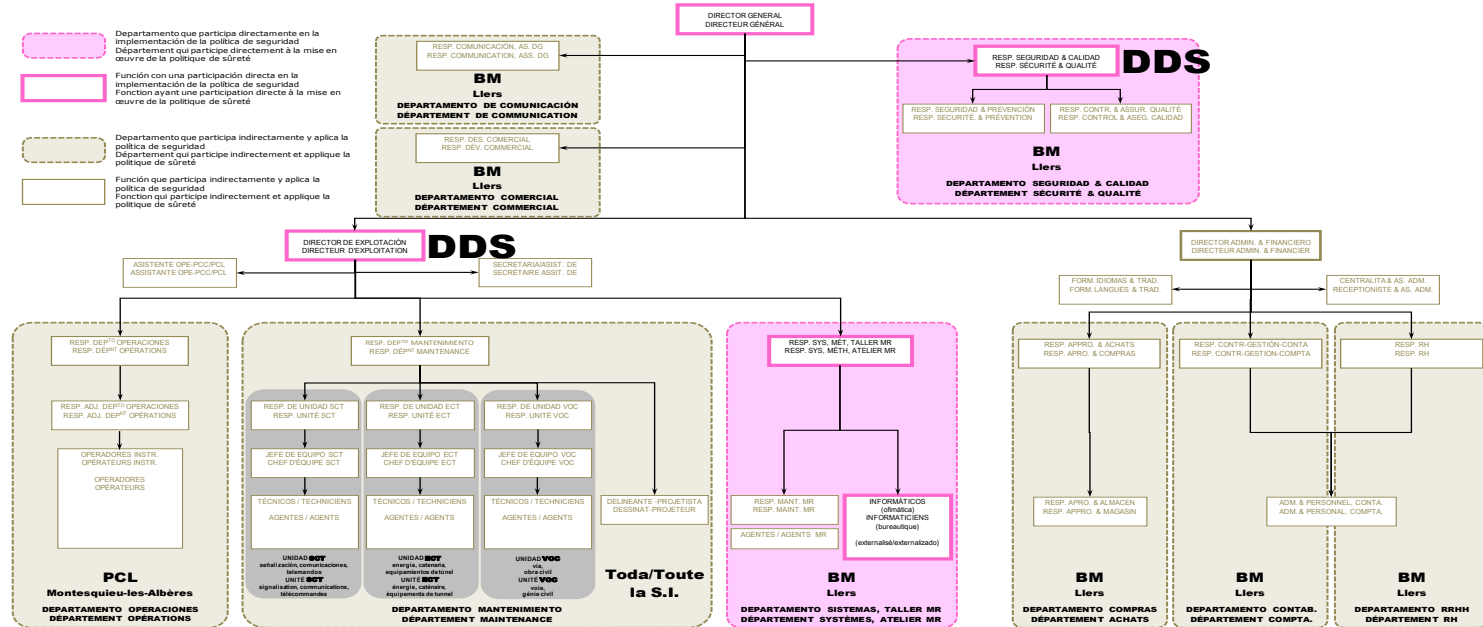
ORGANISATIONAL COMPONENTS (1)

Several organisational components :

- ▶ Safety/Security bi-national Committee formed by French and Spanish civil defence and interior security authorities + TP Ferro
- ▶ Existence of a specific bi-national rescue plan (PSB) applicable to all
- ▶ Existence of a risk & threats evaluation
- ▶ Contingency and safety plans in case of operational incidents or attacks
- ▶ Specific operations safety and security procedures
- ▶ Guidelines for personnel in case of attack
- ▶ Training of all the personnel against physical or cybernetic attacks
- ▶ Specific “security delegates” to exchange classified information with the national defence and internal security authorities + close cooperation
- ▶ Possibility to request the evaluation of personnel before recruitment by the national defence and interior security authorities
- ▶ Controlled access

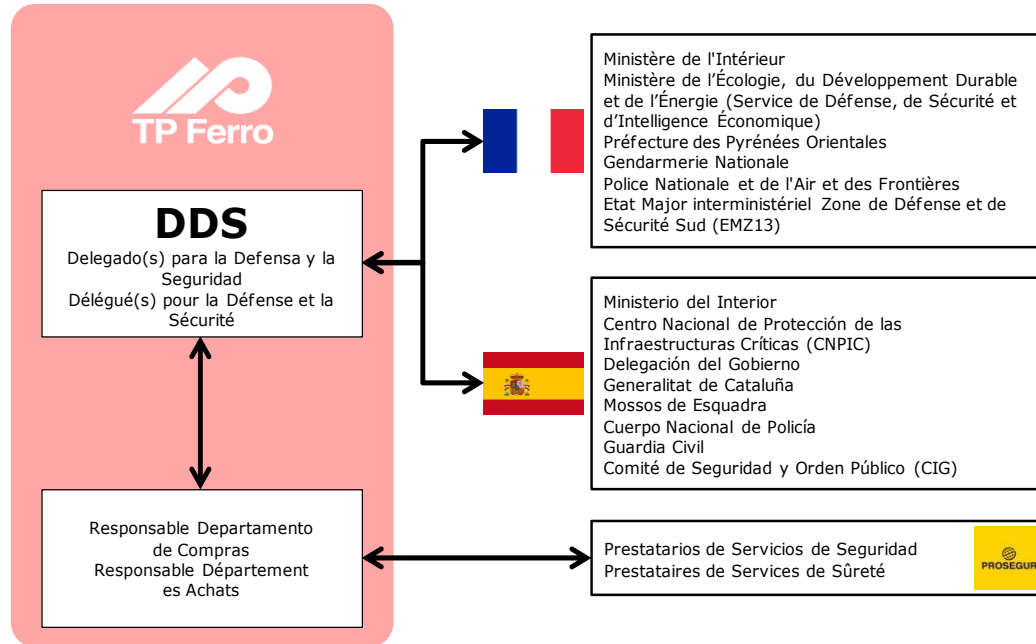
ORGANISATIONAL COMPONENTS (2)

TP Ferro implements a specific organisation chart for security matters



ORGANISATIONAL COMPONENTS (3)

Specific contact persons “DDS” with specific authorisation to handle classified matters for information exchange with national defence authorities

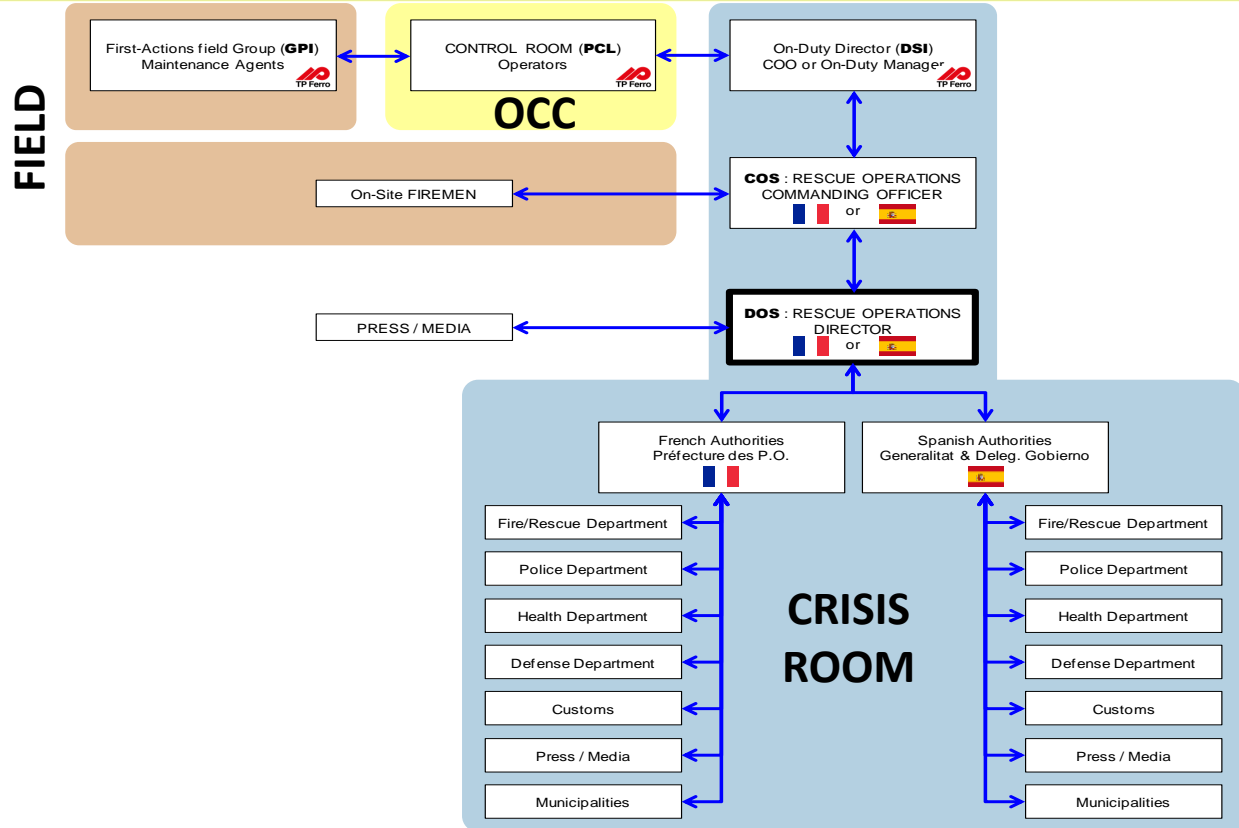


PROTECTION AGAINST ATTACKS

Protection measures are taken against all type of attacks :

- ▶ physical attacks
- ▶ cybernetic attacks
- ▶ know-how protection
- ▶ classified data protection
- ▶ protection of the reputation

GENERAL RESCUE ORGANISATION (1)



GENERAL RESCUE ORGANISATION (2)



FIELD

CONTROL ROOM



CRISIS ROOM



GENERAL RESCUE ORGANISATION (3)

- ▶ Main decision maker: the Rescue Operations Director (DOS)
... French or Spanish according to a territoriality criterion
- ▶ TP Ferro's On-Duty Director (DSI)
- ▶ Rescue Operations Commanding Officer (COS)
- ▶ Fire brigades
- ▶ Police officers
- ▶ Health/ambulance officers
- ▶ Defence officers, etc.

COORDINATION BETWEEN AUTHORITIES

Spanish and French national administrations



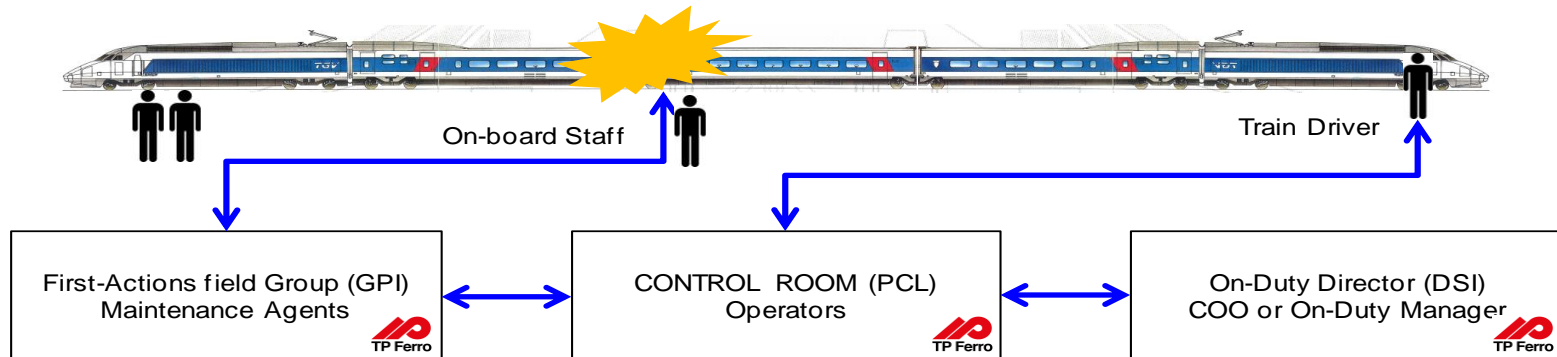
A bi-national Rescue Plan has been signed, it defines:

- ▶ The authority (Spanish or French) that takes the lead of the rescue operations
- ▶ Involved organisations (firemen, police, ambulances, administrations)
- ▶ Communication flows
- ▶ Interfaces with TP Ferro's organisation
- ▶ Decision making process
- ▶ Crisis centres of each national authority (Spain and France)
- ▶ Mobilisation and engagement of human and material resources
- ▶ Operational modes of the rescue operations
- ▶ Continuous improvement, training, simulation, annual rescue exercises

COORDINATION IN THE FIELD

TP Ferro engages various levels of operational response:

- ▶ Control Center (PCL) is the central coordination centre with the people in the field and the trains' onboard personnel (driver and attendants)
- ▶ The On-Duty Director (DSI) is the interface with the authorities and TP Ferro's decision maker
- ▶ First Actions Group (GPI) positioned in the field to assist firemen and trains' staff



MAINTAINING SAFETY DURING CRISIS

CHALLENGE Maintaining safety while minimising impact to mobility

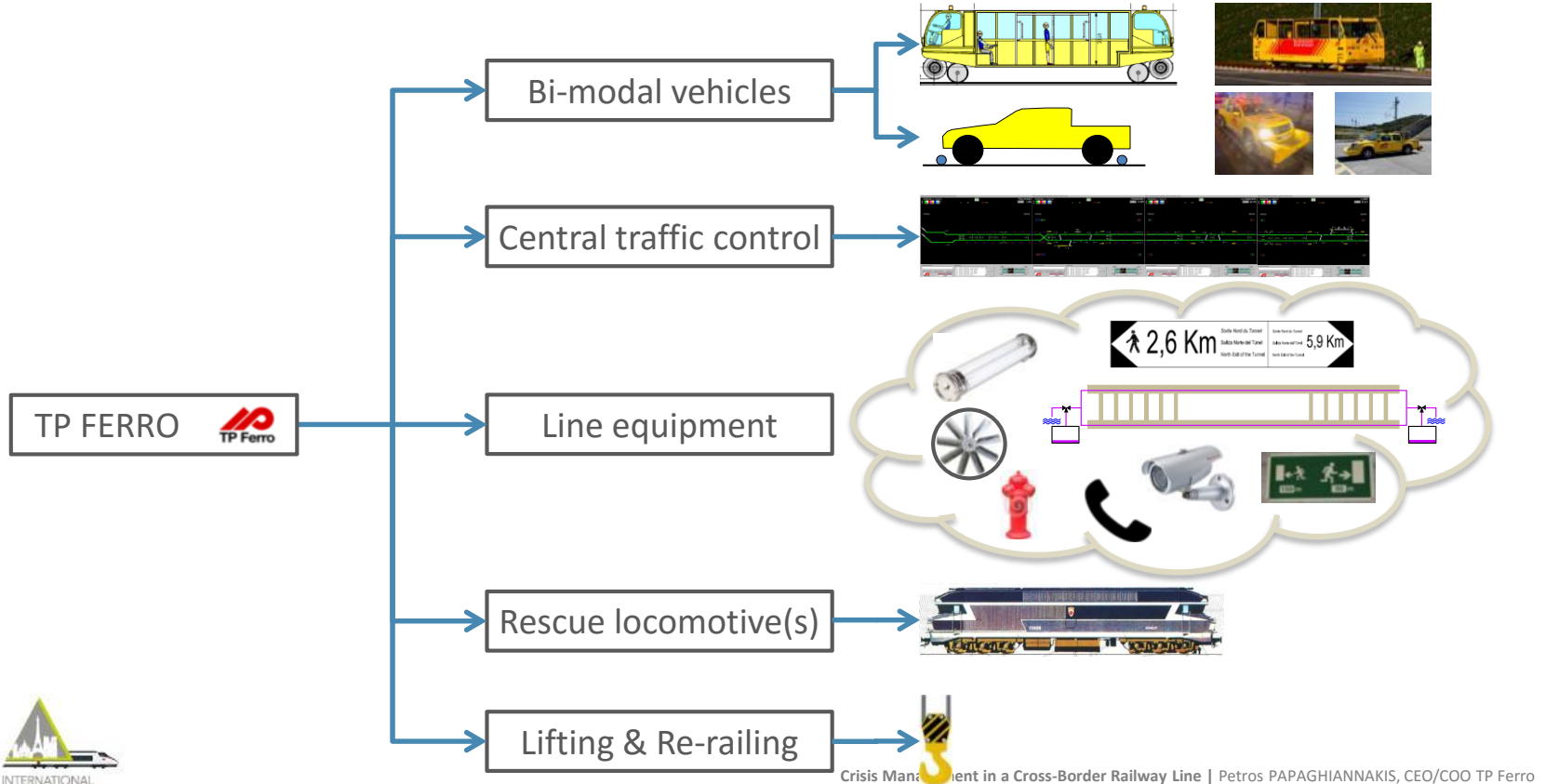
Ensuring Safety:

- ▶ operational measures to avoid other trains to enter the incident zone
- ▶ safety during movement of rescue vehicles
- ▶ lighting inside the tunnel
- ▶ ventilation of the tunnel to evacuate smoke
- ▶ evacuation under safe conditions
- ▶ permanent communication and information exchange

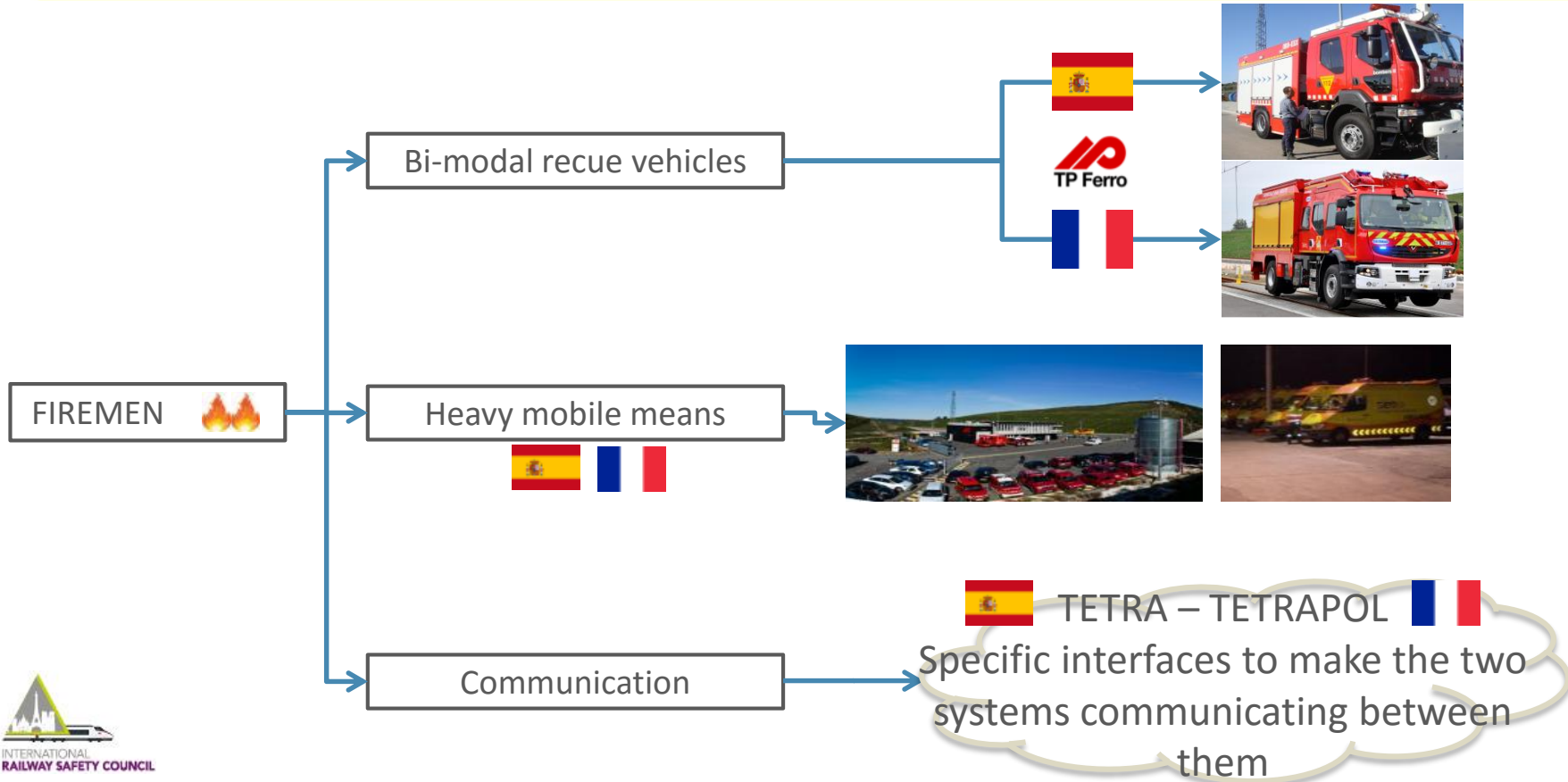
Returning quickly in nominal situation:

- ▶ chose the most adapted crisis treatment strategy
- ▶ establishing measures allowing the traffic to resume as soon as possible even in degraded mode
- ▶ anticipating
- ▶ be reactive

MAINTAINING SAFETY DURING CRISIS (1)



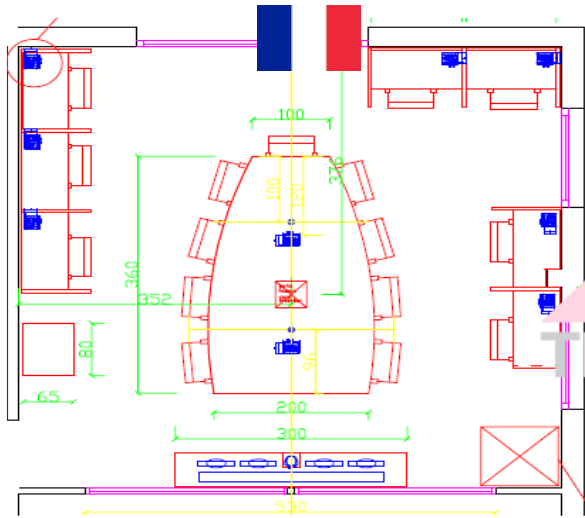
MATERIAL MEANS DURING CRISIS (2)



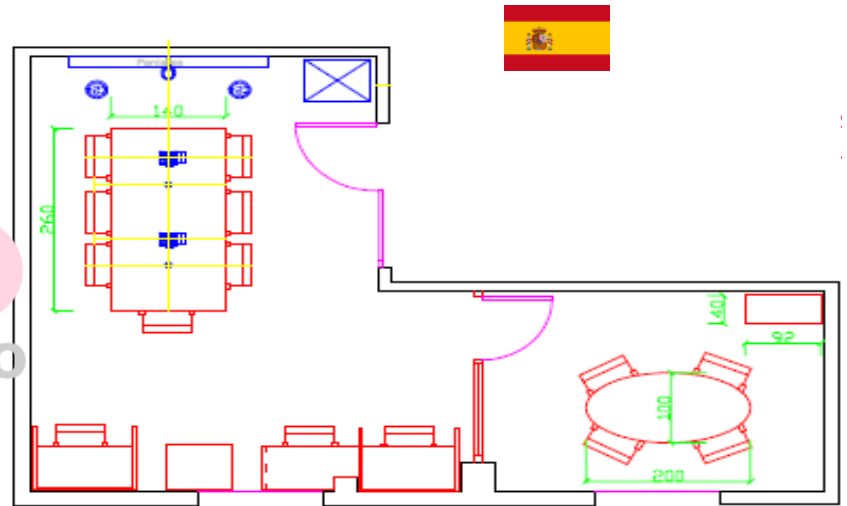
CRISIS ROOMS

Two (2) Crisis Rooms

MAIN Crisis Room



AUXILIARY Crisis Room



HUMAN RESOURCES DURING CRISIS

TP FERRO

- ▶ Control Center operators 24h/d
- ▶ On-duty Director 24h/d (DSI)
- ▶ First Actions Group 24h/d (GPI)
- ▶ Security Guards and Patrolmen

AUTHORITIES' COMMANDING OFFICERS

- ▶ Rescue Operations Director (DOS)
- ▶ Rescue Operations Commanding Officer (COS)
- ▶ Fire brigades Officers
- ▶ Police officers
- ▶ Health/ambulance officers
- ▶ Defence officers, etc.

RESCUE FORCES

- ▶ Firemen
- ▶ Ambulances, Doctors

DECISION PROCESS DURING CRISIS

- ▶ Main decision maker: the Rescue Operations Director (DOS)
... French or Spanish according to a territoriality criterion
- ... But in coordination and advised with/by:
 - ▶ TP Ferro's On-Duty Director (DSI)
 - ▶ Rescue Operations Commanding Officer (COS)

ORDERS are transmitted by each officer at “his” operational units in the field (firemen, TP Ferro agents, ambulances, police forces)

CLEAR ASSIGNMENT OF MISSIONS

AUTHORITIES COMMANDING OFFICERS

- ▶ Decide upon the best strategy for the treatment of the crisis (in coordination and advised with/by TP Ferro's On-Duty Director)
- ▶ Transmit the orders to the Rescue forces in the field

TP FERRO

- ▶ Takes all safety measures (trains at standstill, ventilation, etc.)
- ▶ Centralise information and distribute it
- ▶ Stays in contact with the trains' staff
- ▶ Assist trains' on-board staff to evacuate the passengers

RESCUE FORCES

- ▶ Carry out the rescue operations in the field (fire fighting, first-aid, treatment of victims)

COMMUNICATION WITH MEDIA/PRESS

Official communication with the media ALWAYS centralised and implemented by the national authority that is in charge of the rescue operations

Main actor: DOS (Rescue Operations Director)

TP Ferro participates in the press-conferences \Rightarrow specific procedures and guidelines for external communication with the media

TP Ferro personnel is not authorised to provide information to media/press

LIAISING WITH SAFETY AUTHORITIES

TP Ferro has permanent contacts with:

- ▶ railway safety authorities (AESF and EPSF)
- ▶ physical security authorities against possible attacks (Ministries of the Interior and defence)

Security delegates to exchange confidential information with the national defence and internal security authorities

Possibility to notify “suspect” events to the authorities and request the evaluation of some key-personnel

CONTINUOUS IMPROVEMENT

TP Ferro's personnel is well prepared:

- ▶ Training regarding “technical” actions in case of train accident/incident (fire, train derauling, etc.)
- ▶ Training and guidelines regarding actions in case of attack: bomb alert, unattended object, threats, blackmailing, cybernetic attack, hostage-taking, demonstrations

☞ BUT “only” training is not sufficient !

Annual crisis simulations (drills) are organised joint with the authorities to simulate different types of situations

Permanent improvement system including internal controls and audits

Ability to evaluate new threats in a short period of time and react quickly

THANKS FOR YOUR ATTENTION!

END

Thanks for your attention!

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