Railway Interior Expo 2011

State of the Art Flexible and Cost Effective Fire Protection System Solutions

Stand no.9540

This presentation will.....

Highlight mandatory requirements for Fire Protection Systems on Rolling Stock,

… and apply this on Fire detection and Control reviewing important aspects of the standards

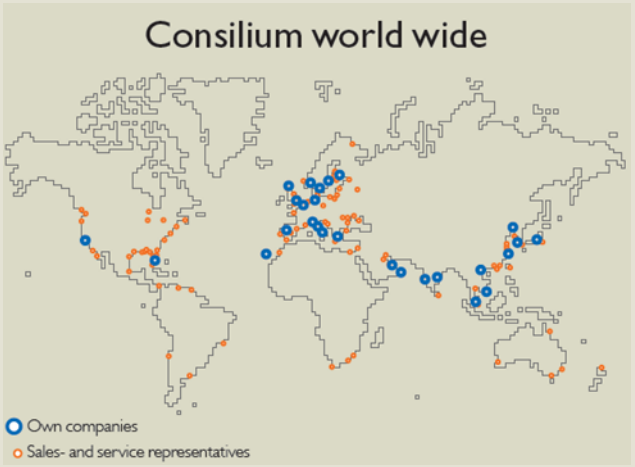
Demonstrate a flexible system solution for fire detection and control for trams up to full scale high speed trains,

… looking at key benefits of a fully integrated detection and control system supporting low Life Cycle Cost for the total investment of the train and operation









>8500 railway vehicles

What main standards and directives apply for the European Market?

2004/49/EC Railway Safety Directive

2008/57/EC Directive of Interoperability

2008/163/EC Directive for tunnel operation

96/48/EC Directive of Interoperability High Speed Trains (replaced by 2008/57/EC)

2001/16/EC Directive of Interoperability Conventional Trains (replaced by 2008/57/EC)

prEN 45545-1 to -7 Fire Safety Requirements

EN 50155 Electronic equipment used on rolling stock

EN 50121-3-2 Electromagnetic compatibility - Part 3-2: Rolling stock - Apparatus

EN 50124-1 Clearances and creepage distances

EN 50125-1 Environmental conditions for equipment

EN 50126 Reliability, Availability, Maintainability and Safety (RAMS)

EN 50128 Software for railway control and protection systems

prEN 50553 Running Capability

EN 54-2, -4, -5, -7, -10, -11, -17, -22 Fire detection and alarm system
Panel, Power, Heat, Smoke, Flame, Manual Call Points, Short Circuit Isolator, Line Heat Detector

Running Capability applied on fire detection

prEN 50553 Railway applications – Requirements for running capability in case of fire on board of rolling stock

Provide safety for the passengers and staff in a fire situation by continuing to the next station or to infrastructure facilities provided in the tunnel, when Type 2 fires (Model 5 EN45545) (applies to traction, breaks, fire barriers)

Parallel with the Safe Return To Port regulation issued by the United Nations Marine Agency IMO

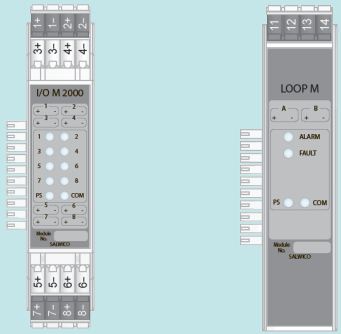
Fire detection systems and control systems improve the availability of the total system, taking the blindfold off the operator.

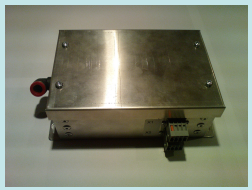






Engine failure
Elevated structures
Arson on train
Locations difficult to reach
Terrorists
Passenger goods
Electrical equipment failure





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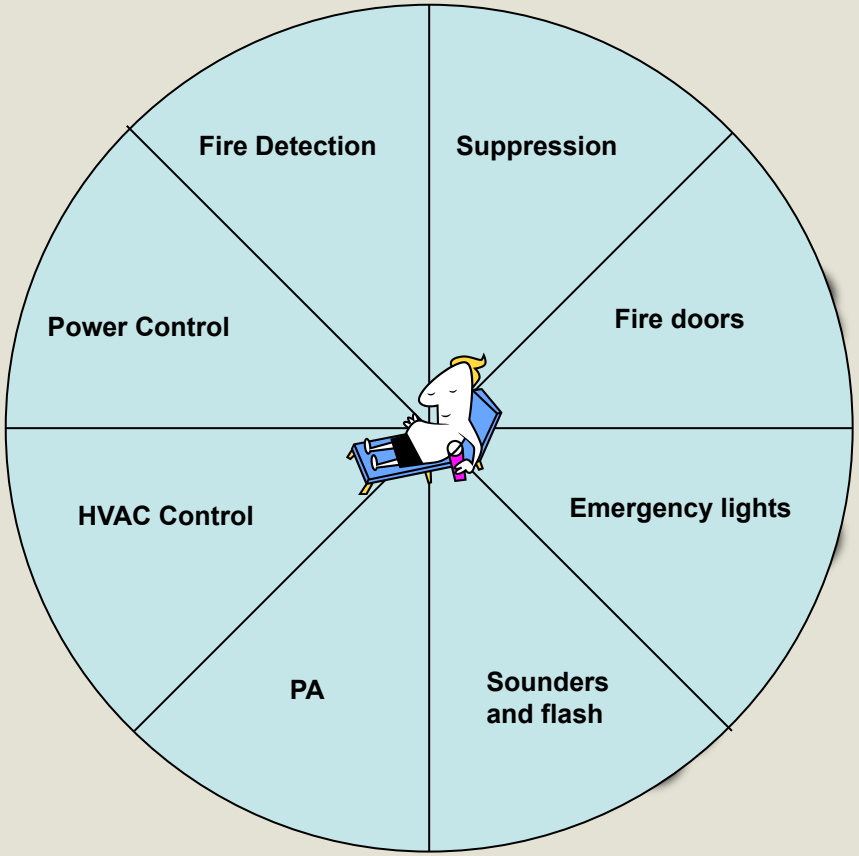
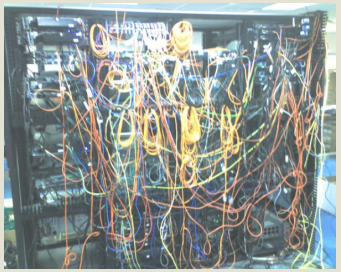
Consilium

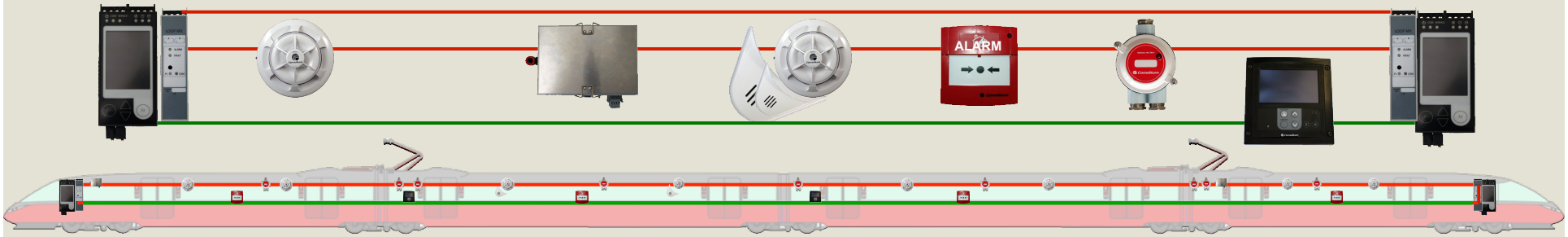
System Integration – a piece of cake?



Risk with less integration
- Frustration
- Time delay
- Project cost
- Material cost
- Unclear responsibilities
- Safety risk
- Higher life cycle cost



Gain by integration
- On time
- Reduced total cost
- Simplified support
- Easy to update
- Reliability
- Reduced maintenance
- Weight



- √ Conventional system > Low cost alternative
- √ Addressable system (pending prEN 45545)
- √ Smoke/Heat Uni detector (pending prEN 45545 and prEN 50553)
- √ Redundant – Running Capability (pending prEN 50553)
- √ Aspiration for concealed mounting / access to difficult areas etc > simple and low cost
- √ Control and equipment for sounders and beacons in sleepers (pending EN45545-6)
- √ Passenger Alarm Systems (standard pending + EN45545-6)
- √ Supervision of under carriage, engine compartment, electrical cabinets etc. > low cost integration
- √ Controls for suppression and extinguishing (pending EN45545-6) > Simple integration
- √ Controls for fire barriers (doors) (pending prEN45545-6)
- √ Controls for HVAC (pending EN45545-6)
- √ Power Control (pending EN45545-6)
- √ Repeaters and Mimics

Summary

Well integrated system reduces risk

Well integrated system reduces total cost

Gives flexibility in configuration and installation

Increase safety in all modes of operation

Thank you for the attention!

You are very welcome to our stand (no. 9540) for further discussions and demonstrations