

Ian Rowe

Avansim

# UK Industry Response to the 2016 Sandilands Tram Accident

Ian Rowe

European Light Rail Conference 2024

# Agenda

- What happened?
- Response to the Accident

# Tram Overturn - 9<sup>th</sup> November 2016

- Tram travelling at 3 times permitted speed
- Derailed on sharp left-hand curve near Sandilands Tram stop in London
- 7 fatalities, 61 injured, 19 seriously



# Sandilands Accident

- Rail Accident Investigation Branch (RIAB) report makes 15 recommendations. These include:
  - Technology, such as automatic braking and systems to monitor driver alertness
  - Better understanding the risks associated with tramway operations, particularly when the tramway is not on a road, and the production of guidance on how these risks should be managed
  - Improving the strength of doors and windows
  - Improvements to safety management systems, particularly encouraging a culture in which everyone feels able to report their own mistakes
  - Improvements to the tram operator's safety management arrangements so as to encourage staff to report their own mistakes and other safety issues
  - Reviewing how tramways are regulated
  - A dedicated safety body for UK tramways

# LRSSB Response

- IRAL commissioned to produce:
  - Research into Driver Inattention and Speed Management Systems
  - Production of guidance for the industry
  - Monitoring industry response

# LRSSB - LRG18 - Speed Management Systems Guidance

- Two approaches
  - Location based – Protects certain locations only
  - Continuous – Protects all Speed restrictions on the network

# Conclusions

- Please do not assume that you are immune from driver inattention.
- No amount of training or experience can change this.
- What happened at Sandilands could happen to YOU!!
- Please learn from our experience.
- All research is published and available for the LRSSB web site
- Guidance now being adopted by UK operators is available on the LRSSB web site (LRG17 and LRG18)



# Teresa Benet

Metrotenerife



# SIMOVE FOR RAILWAYS



metrotenerife

# Who we are



- Public company constituted in 2001
- 23M€ Turnover. 200 Employees
- Railway Operation and Maintenance
- Consultancy services
- R+D+i
- Members of:



# Background: overspeed

On Light Rail, driving on sight is a standard practice all over Europe and across the world.

Valencia (SPAIN), July 2006



Rotterdam (NL), July 2021



Santiago de Compostela (SPAIN), July 2013



## ■ **Back in 2013:**

- ATP: specific location protection SIL2
- Assistance Driving System: continuous monitoring in each point

## ■ **LRSSB**

## ■ Advance Driver Assistance System (ADAS)

- Inform the driver about the maximum speed allowed at each point
- Alert threshold
- Automatically stop the tram. Emergency threshold
- Tool for speed supervision and analysis
- No SIL2

## **SIMOVE** FOR RAILWAYS



**Vehicle's real time monitoring  
position**



**Vehicle's speed monitoring**



**Data Registration  
and Storage**



**Back  
Office**







- SIMOVE fully deployed since 2016
- 28,6 km. of tramway track. 2 Lines.
- 26 Vehicles Alstom Citadis 302
- Records of derailments avoided
- Safety increased: overspeed under control
- Operation activities and drivers management improved: information on time stopped at terminals, very accurate time stopped at stops
- Avoid accidents against derail buffers



- SIMOVE fully deployed since 2019
- 48,8 km. of tramway track. 2 Lines.
- 27 Vehicles Alstom Citadis 302
- Trial in 1 vehicle from 2017 to 2019. No brake application.
- Overspeed protection and information of driver behaviour
- MLO has declared that SIMOVE deployment has had many advantages. Some of them:
  - “ SIMOVE has increased the safety of the service, improved the operability of the network and upgraded passenger’s confidence in the system”



- Manchester Metrolink Trial. Pink Line
- Bombardier Vehicle
- Trial as part of the RAIB investigation report (LRSSB guidelines). April to June 2020
- Customization and installation
- Evaluation of SIMOVE's functionalities meets RAIB recommendations for over speed prevention system
- Trial extremely successful. High accuracy and reliability proved.

- SYMCA
- Tram-Train infrastructure: 57km of tram track + 5.5km of train track. 3 Legs.
- 25 Siemens tramway + 7 Stadler tram-train
- Overspeed Protection System. Follow LRSSB guidance.
- Customize, supply and install
- Timeframe: 14 months. October 2023 to November 2024

 Stagecoach

**SUPERTRAM**



**metrotenerife**

**Ctra. Gral. La Cuesta – Taco, 124  
38108 La Laguna – Tenerife (Spain)**

**Teresa Benet – International Projects**

**T: +34 922 024 800**

**tbenet@metrotenerife;**

**contact@metrotenerife.com**

**[www.simoverail.com](http://www.simoverail.com)**