# REFERENCES



## **EKE-Electronics**





EKE-Electronics' Train Control and Management System references split by train type: high speed trains, commuter trains, metros, trams, passenger coaches, locomotives and others. Selected references starting from 1990.

## High speed or long distance trains



Eurotunnel The Shuttle, UK/France 1990-1994 | 180 cars

- Train Control & Management System
- EKE-Trainnet Gateways



VR Pendolino, Finland 1995-2001 | 18 trains, 108 cars

- EKE-Trainnet Gateways
- Event recorders with Rugged Memory
- Speedometers





Virgin Cross Country Trains, UK 1999-2001 | 352 cars

- Train Communication Network
- WTB-LON Gateway

## **BOMBARDIER**





Spirit of Queensland, Australia 1999-2003 | 3 trains, 29 cars

- Train Control & Management System
- WTB-MVB Gateways
- Event Recorders
- Human-Machine Interfaces



(CONFIDENTIAL)

Tilting train, China 2001

- Train Communication Network
- WTB-MVB Gateways

High speed train, China 2001

- Train Communication Network
- WTB-MVB Gateways







G7 High Speed Train, Korea 2002 1 train (prototype)

• Event recorders with Rugged Memory





Hull Trains, UK 2002-2004 | 4 trains

- Train Communication Network
- WTB Gateways





Midlands mainline, UK 2002-2004 | 127 cars

- Train Communication Network
- WTB Gateways





Allegro Trains, Finland/Russia 2008 | 4 trains, 28 cars

- Event recorders with Rugged Memory
- Control panels
- Speedometers





Talgo Dual Trains, Spain 2010-2012 | 15 trains, 30 cars

- Train Communication Network
- MVB-CAN Gateways

Talgo



Talgo AVRIL High Speed Train, Spain 2010-2014 | 1 train (prototype)

- Train Control & Management System
- WTB-MVB-CAN-Ethernet Gateways
- I/O modules with SIL-2 functionalities

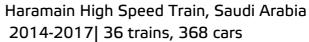












- Train Control & Management System
- WTB-MVB-CAN-Ethernet Gateways
- I/O modules with SIL-2 functionalities



Flytoget Oslo Airport Link, Norway 2016-2018 8 trains, 32 cars

• Onboard computer with SIL functions





**QueenslandRail** 

Spirit of Queensland, Australia 2018-2019 | 3 trains, 29 cars

- SmartVision™ RCMS
- Event recorders with Rugged Memory
- Ethernet Switches



RENFE AVE AVRIL trains, Spain 2019-2020 | 30 trains, 420 cars

- Train Control & Management System
- WTB-MVB-CAN-Ethernet Gateways
- I/O modules with SIL-2 functionalities







#### Commuter trains



VALMET



**SAF ALSTOM** 



**3**ŠHODA



**(S)** kontron



**JUGL** 



**ALSTOM** 

VR Sm1 and Sm2 Trains, Finland 1992-2000 | 100 trains, 200 cars

- Train Communication Network
- EKE-Trainnet Gateways
- Event Recorders with Rugged Memory
- Speedometers and Displays

SVR Sm4 Trains, Finland 1998-2005 | 30 trains, 60 cars

- Event Recorders with Rugged Memory
- Speedometers
- Displays

VR Dm12 Trains, Finland 2003-2005 | 16 trains, 16 cars

- Event Recorders with Rugged Memory
- Speedometers
- Displays

AGC Regional Trains (SNCF), France 2003-2010 | 192 trains, 576 cars

- Train Communication Network
- WTB-MVB Gateways

Hunter Rail Cars, Australia 2004-2006 | 7 trains, 14 cars

- Train Control & Management System
- WTB-CAN Gateways
- Event Recorders with Rugged Memory
- Displays

Storstockholms Lokaltrafik X60, Sweden 2004-2006 | 71 trains, 426 cars

- Train Communication Network
- WTB-MVB Gateways





#### Commuter trains



FLIRT, Finland 2007-2014 | 32 trains, 128 cars

- Event recorders with Rugged Memory
- Speedometers
- Displays





EW60 Commuter Trains, Poland 2007 | 1 train (prototype)

• Human-Machine Interfaces

STADLER



Skånetrafiken X61 Trains, Sweden 2008-2010 | 49 trains, 196 cars

- Train Communication Network
- WTB-MVB Gateways

**ALSTOM** 



Sydney Waratah Trains, Australia 2008-2013 78 trains, 626 cars

- Train Control & Management System
- Ethernet gateways and HMIs
- Event Recorders with Rugged Memory
- PIS/PA system and Radio link interface

Rail



Regio Shuttle, multiple countries 2009-2011| multiple trains and operators

- Train Communication Network
- WTB-CAN Gateways

STADLER



Slovakian Railways Škoda EMU, Slovakia 2010-2015 | 19 trains, 57 cars

- Train Communication Network
- WTB-CAN Gateways

**3**ŠHODA





#### Commuter trains



Bangladesh Railway DMU, Bangladesh 2011-2012 | 20 trains, 60 cars

- Train Communication Network
- WTB-MVB Gateways





Czech Railways Škoda EMU, Czech Republic 2012-2015 | 28 trains, 84 cars

- Train Communication Network
- WTB-CAN Gateways





HZ KONČAR DMU-EMU, Croatia 2014 | 44 trains, 164 cars

- Train Communication Network
- WTB-CAN Gateways

## KONČAR



TransPennine Express EMU, UK 2017-2019 | 25 trains, 125 cars

- Onboard computer with SIL functions and GPS positioning system
- Human-Machine Interfaces

**C4F** 



Arriva Northern DMU-EMU, UK 2017-2019 | 98 trains, 281 cars

- Onboard computer with SIL functions and GPS positioning system
- Human-Machine Interfaces

**C4F** 



West Midlands Trains, UK 2018-2020 | 26 trains, 80 cars

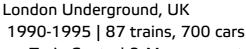
- Onboard computer with SIL functions and GPS positioning system
- Human-Machine Interfaces







#### Metros



- Train Control & Management System
- EKE-Trainnet Gateways
- Brake controller interfaces





MTR Hong-Kong Metro, China 2005-2007 | 348 cars

- Train Control & Management System
- WTB Gateways
- Event Recorders





São Paulo Metro Line 2, Brazil 2008-2010 | 96 cars

Event Recorders with Rugged Memory

**ALSTOM** 



Barcelona Metro, Spain 2009-2010 | 10 trains, 50 cars

- Train Communication Network
- Ethernet-MVB Gateways

COMSA EMTE



São Paulo Metro Line 3, Brazil 2010-2013 | 25 trains, 150 cars

- Tain Control & Management System
- Ethernet Gateways
- Event Recorders with Rugged Memory
- PIS/PA, Emergency phones, CCTV etc.

MTTRENS Consortium



São Paulo Metro Line 15 Monorail, Brazil 2012-2013 | 54 trains, 378 cars

• Event Recorders with Rugged Memory







#### Metros



Berlin Metro, Germany 2014 | 2 trains, 8 cars (prototypes)

- Train Communication Network
- WTB-CAN Gateways

#### STADLER



Kiev Metro, Ukraine 2014 | 1 train, 5 cars (prototype)

- Train Control & Management System
- WTB-MVB-CAN Gateways
- Event Recorders with Rugged Memory





Nanjing Metro, China 2014 | 13 trains, 78 cars

- Train Control & Management System
- MVB Gateways





Shenzhen Metro Line 3, China 2014-2015 | 33 trains, 198 cars

- Train Control & Management System
- MVB Gateways





Riyadh Metro, Saudi Arabia 2014 | 47 trains, 94 cars Event Recorders with Rugged Memory

#### **BOMBARDIER**



Izmir Metro, Turkey 2016-2017 | 17 trains, 85 cars

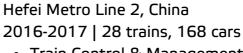
• Event Recorders with Rugged Memory







#### Metros



- Train Control & Management System
- MVB Gateways























Esfahan Metro, Iran 2016-2017 | 3 trains, 15 cars

- Train Control & Management System
- MVB-CAN Gateways
- Event Recorders with Rugged Memory

London Underground, UK 2017-2023 | 85 trains, 680 cars

- Train Control & Management System (Data Transmission System)
- Brake controller interfaces
- Event Recorders with Rugged Memory

Melbourne HCMT, Australia 2018-2019 | 65 trains, 455 cars

- Train Control & Management System
- TCN Gateways
- Event recorders with Rugged Memory

São Paulo Metro Line 13, Brazil 2018-2019 | 8 trains, 64 cars

- Train Control & Management System
- MVB-WTB Gateways

LUL Bakerloo and Central Lines, UK 2018-2023 | 121 trains, 932 cars

• PIS/PA



#### **Trams**



Sevilla CAF URBOS 3 Trams, Spain 2009-2011 | 5 trams

• Event Recorders with Rugged Memory





Zaragoza CAF URBOS 3 Trams, Spain 2009-2011 | 21 trams

• Event Recorders with Rugged Memory





Granada CAF URBOS 3 Trams, Spain 2011-2013 | 13 trams

• Event Recorders with Rugged Memory





Stuttgart Trams, Germany 2012-2014 | 20 trams, 40 cars

- Train Communication Network
- WTB-CAN Gateways

#### STADLER



Astra Imperio Trams, Romania 2014-2015 | 6 cars

• Passenger Information System (PIS)





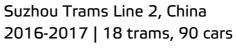
Wuhan Supercapacitor Trams, China 2016 | 21 trams, 84 cars

- Train Communication Network
- MVB Gateways





## **Trams**



- Train Communication Network
- MVB Gateways









London Trams, UK 2019 | 35 trams

- Physical Prevention of Over-Speeding
- Event Recorders with Rugged Memory
- Train to wayside communication



















TRANSTECH



BOMBARDIER



TRANSTECH

VR Intercity Coaches, Finland 1992-1994 | 80 cars

- Train Control & Management System
- EKE-Trainnet Gateways
- Displays

VR Regional Coaches, Finland 1992-2002 | 57 cars

- Train Control & Management System
- EKE-Trainnet Gateways
- Displays

VR Express Coaches, Finland 1994-1999 | 490 cars

- Train Control & Management System
- EKE-Trainnet Gateways
- Displays

VR Double Deck Intercity Coaches, Finland 1996-2012 | 152 cars

- Train Control & Management System
- EKE-Trainnet Gateways
- Displays

IR Double Deck Coaches, Israel 2000-2019 | 496 cars

- Train Control & Management System
- WTB-MVB Gateways
- Displays

VR Sleeping Coaches, Finland 2005-2011 | 40 cars

- Train Control & Management System
- EKE-Trainnet Gateways
- Displays







#### **SIEMENS**



TEHMIN



TEHMIN











RAILTEC SYSTEMS IR Low Floor Push-Pull Coaches, Israel 2007-2010 | 87 cars

- Train Control & Management System
- WTB-MVB Gateways
- Displays

CFR Double Deck Coaches, Romania 2007-2012 | 133 cars

- Train Control & Management System
- WTB-CAN-S/L Gateways
- Passenger Information System (PIS)
- W-LAN radio link to maintenance depot

CFR Intercity Coaches, Romania 2007-2012 | 158 cars

- Train Control & Management System
- WTB-CAN-S/L Gateways
- Passenger Information System (PIS)
- W-LAN radio link to maintenance depot

SC Remarul 16 Februarie Coaches, Romania 2009-2010 | 58 cars

- Train Control & Management System
- WTB-CAN-S/L Gateways
- Passenger Information System (PIS)

CFR Sleeping Coaches, Romania 2009-2012 | 8 cars

- Train Control & Management System
- WTB-CAN-S/L Gateways
- Passenger Information System (PIS)
- W-LAN radio link to maintenance depot

MOB Golden Pass Coaches, Switzerland 2009-2012 | 77 cars

Ethernet Switches/Gateways







ArenaWays Passenger Coaches, Italy 2010-2012 | 6 cars

- Train Control & Management System
- WTB-CAN-S/L Gateways
- Passenger Information System (PIS)





Slovakian Rail Push-Pull cars, Slovakia 2011-2013 | 10 trains, 30 cars

- Train Communication Network
- WTB-CAN Gateways

TEHMIN



KTZ Hotel Train, Kazakhstan 2011-ongoing | 338 cars

- Train Control & Management System
- MVB Gateways

Talgo



VALE Passenger Coaches, Brazil 2013-2014 | 95 cars

- Train Control & Management System
- WTB-CAN Gateways
- Passenger Information System (PIS)

TEHMIN



Talgo Berlin-Moscow Coaches, Russia 2013-2014 | 7 trains, 140 cars

- Train Control & Management System
- MVB Gateways

Talgo



TRANSTECH

VR Double Deck Intercity Coaches, Finland 2013-2015 | 51 cars

- Train Control & Management System
- WTB-MVB-CAN-Ethernet Gateways
- Event Recorders with Rugged Memory
- Displays











TRANSTECH

Caledonian Sleeper, UK 2016-2018 | 75 cars

- Onboard computer with SIL functions and GPS positioning system
- Human-Machine Interfaces

VR EDI Intercity Coaches, Finland 2018-2019 | 20 cars

- Train Control & Management System
- EKE-Trainnet Gateways
- Displays





#### Locomotives



VR Sr1 Locomotives, Finland 1990-1998 | 112 locomotives

- Event Recorders with Rugged Memory
- Speedometers
- Displays





VR Sr2 Locomotives, Finland 1995-1999 | 46 locomotives

- Event Recorders with Rugged Memory
- Speedometers
- Display

ABB



VR Dv12, Dr14, and Dr16 Locos, Finland 1999-2001 | 239 locomotives

- Event Recorders with Rugged Memory
- Speedometers
- Displays

VR



New Jersey Locomotives PL-42, USA 2003-2005 | 33 locomotives

- Train Communication Network
- WTB-MVB Gateways

**ALSTOM** 



China Railway Corp. Locomotives, China 2003-2006 | 100 locomotives

- Train Communication Network
- WTB-MVB Gateways

武汉正远铁路电气有限公司



ÖBB Locomotives 1044, Austria 2008-2011 | 119 locomotives

- Train Communication Network
- WTB Gateways

SYSTEMS





#### Locomotives



CLW WAP-7 Locomotives, India 2009-2014 | 1 locomotive (prototype)

- Train Control & Management System
- WTB-MVB-CAN Gateways





PKP Cargo Locomotives, Poland 2011 | 38 locomotives

- Train Communication Network
- WTB-CAN Gateways

MEDCOM



IR Vossloh Locomotives, Israel 2011-2013 | 15 locomotives

- Train Communication Network
- WTB Gateways
- Human-Machine Interfaces (HMI)

## vession



Slovakian Railways Škoda Locos, Slovakia 2011-2013 | 10 locomotives

- Train Communication Network
- WTB-CAN Gateway





Škoda Trailer Cars, Czech Republic 2011-2013 | 34 cars

- Train Communication Network
- WTB-CAN Gateway





VR Vectron Locomotives, Finland 2015-2025 | 80 locomotives

- Train Communication Network
- WTB-CAN-Trainnet Gateway





## Locomotives



Shunting locomotives, Tunisia 2016-2017 | 7 locomotives

• Event Recorders



## Other vehicles



VR Track Maintenance Machines, Finland 1999-2003 | 135 vehicles

- Event Recorders with Rugged Memory
- Speedometers





Škoda WTB tester 2013-2014| 3 systems

• WTB-CAN Gateway









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