



GB Involvement in the Development of Euronorms in the Field of Railway Applications

CENELEC TECHNICAL COMMITTEE TC9X

Introduction

This document contains an organisation chart showing the structure of CLC TC9X and its working groups, with equivalent GB mirror committees.

It also provides details of committee membership and lists the associated Euronorms (ENs), for which each committee is responsible.



TC9X Electrical and electronic applications for railways Scope: Standardisation of electrical and electronic systems, equipment and associated software for use in all railway applications, whether on vehicles or fixed installations, including urban transport.	GEL/9 GB mirror group to TC9X
Convenor: Pietro Marmo (Italy)	Chair: David Knights
Secretary: Denis Miglianico (France)	Secretary: Kveta Pickova
GB reps: Chris Llewellyn, Convenor of SC9XB David Knights, Head of GB delegation	GEL/9 experts: Roger Short (GEL/9/1 Chair) Chris Llewellyn (GEL/9/2 Chair) John Morris (GEL/9/3 Chair) Phil Beirne (Ricardo Rail) Dave Burbridge (Network Rail) Richard Bevan (SNC Lavalin) Mark Cartwright (Centaur Consulting Ltd) David Clarke (RIA) Gary Crawshaw Daniele Diana (Aegis Engineering) Ross Deacon (London Underground Ltd) Mike Hagger Mike Harvie (London Underground Ltd) Ken Lax (Corroconsult UK Limited) Jim Lupton (RIA) Mark Molyneux (RDG) Sam Newcombe (RSSB) Tim Newins (BSI) Neil Ovenden (RDG) Colin Robey (Transport for West Midlands) John Stafford (RSSB) Mike Tatton (RSSB) John S Williams (Siemens)
CEN standards relevant to TC9X – parallel voted in CLC	
EN 45545-1:2013 Railway applications - Fire protection on railway vehicles - Part 1: General	Published.
EN 45545-2:2013+A1:2015 Railway applications - Fire protection on railway vehicles - Part 2: Requirements for fire behaviour of materials and components	Published.
EN 45545-3:2013 Railway applications - Fire protection on railway vehicles - Part 3: Fire resistance requirements for fire barriers	Published.
EN 45545-4:2013 Railway applications - Fire protection on railway vehicles - Part 4: Fire safety requirements for rolling stock design	Published.
EN 45545-5:2013+A1:2015 Railway applications - Fire protection on railway vehicles - Part 5: Fire safety requirements for electrical	Published.



equipment including that of trolley buses, track guided buses and magnetic levitation vehicles	
EN 45545-6:2013 Railway applications - Fire protection on railway vehicles - Part 6: Fire control and management systems	Published.
EN 45545-7:2013 Railway applications - Fire protection on railway vehicles - Part 7: Fire safety requirements for flammable liquid and flammable gas installations	Published.
IEC standards relevant to TC9X – parallel voted in CLC	
prEN 62290-3 Railway applications - Urban guided transport management and command/control systems - Part 3: System requirements specifications	<i>Enquiry (CD) closes on 28 July 2017.</i>
prEN 62928:2016 Railway applications - Rolling stock equipment - Onboard lithium-ion traction batteries	<i>Vote (CDV) closed in November 2016. Progressing draft to final vote (FDIS).</i>
EN 61287-1:2014 Railway applications - Power converters installed on board rolling stock - Part 1: Characteristics and test methods	Published.
EN 61375 series Electronic railway equipment - Train communication network (TCN)	See TC9X WG15 below.
EN 62625 series Electronic railway equipment - On board driving data recording system	See TC9X WG15 below.
EN 62267:2009 Railway applications - Automated urban guided transport (AUGT) - Safety requirements	Published.
EN 62290-1:2014 Railway applications - Urban guided transport management and command/control systems - Part 1: System principles and fundamental concepts	Published.
EN 62290-2:2014 Railway applications - Urban guided transport management and command/control systems - Part 2: Functional requirements specification	Published.
EN 62520:2011 Railway applications - Electric traction - Short-primary type linear induction motors (LIM) fed by power converters	Published.
BS EN 62864-1:2016 Railway applications. Rolling stock. Power supply with onboard energy storage system. Series hybrid system	Published.

<p>TC9X WG11</p> <p>Energy measurement</p> <p>Scope: To create a series of standards related to measurement of energy consumption on board trains, with an extended scope to include input/output interfaces such as transducers, measurement devices, data transmission and a standard localization in order to cope with the requirements of an interoperability constituent, as it will be defined in the TSI. EN 50463</p> <p>Convenor: Carlo Fasoli (Italy)</p> <p>Secretariat: Italy</p> <p>GB reps:</p> <p>Mike Tatton, RSSB</p>	
WG11 Standards	



EN 50463-1:2017 Railway applications - Energy measurement on board trains - Part 1: General	Final vote finished in March 2017. Publication scheduled for November 2017.
EN 50463-2:2017 Railway applications - Energy measurement on board trains - Part 2: Energy measuring	Final vote finished in March 2017. Publication scheduled for November 2017.
EN 50463-3:2012 Railway applications - Energy measurement on board trains - Part 3: Data handling	Final vote finished in March 2017. Publication scheduled for November 2017.
EN 50463-4:2012 Railway applications - Energy measurement on board trains - Part 4: Communication	Final vote finished in March 2017. Publication scheduled for November 2017.
EN 50463-5:2012 Railway applications - Energy measurement on board trains - Part 5: Conformity assessment	Final vote finished in March 2017. Publication scheduled for November 2017.

TC9X WG12 Communication means between safety equipment and man machine interface (mmi) Scope: TR 50542 Convenor: Philippe Laporte (France) Secretariat: France GB reps: none	
WG12 standards	
CLC TR 50542-1 Railway applications – Driver's cab train display controller (TDC) - Part 1: General architecture	NWIP approved in March 2017. Drafting in progress.
CLC TR 50542-1:2014 Railway applications – Driver's cab train display controller (TDC) - Part 1: General architecture	Published.
CLC TR 50542-2:2016 Railway applications - Driver's cab Train Display Controller (TDC) - Part 2: Display systems FIS	Published.
CLC TR 50542-3:2016 Railway applications - Driver's cab train Display Controller (TDC) - Part 3: Other train systems FIS	Published.

TC9X WG15 Liaison between CEN/TC278/WG03 and IEC/TC9/WG43&46 and Modtrain FIS Scope: To ensure the coordination on telematic applications between the two standardization working groups in order to solve a long-lasting issue. To transform Modtrain FIS into CLC documents. Convenor: Marco Predonzan (Italy) Secretariat: Italy GB reps: John Stafford	
WG15 standards	
prEN 61375-2-6:2016 Electronic railway equipment - Train communication network - Part 2-6: On-board to ground communication	Vote (CDV) closed in November 2016. Progressing draft to Final Vote (FDIS).
prEN 61375-2-8:2016 Electronic railway equipment - Train communication network (TCN) - Part 2-8: TCN conformance test	NWIP approved in January 2017. Enquiry (CD) scheduled for December 2017.



EN 61375-1:2012 Electronic railway equipment - Train communication network (TCN) - Part 1: General architecture	Published.
EN 61375-2-1:2012 Electronic railway equipment - Train communication network (TCN) - Part 2-1: Wire Train Bus (WTB)	Published.
EN 61375-2-2:2012 Electronic railway equipment - Train communication network (TCN) - Part 2-2: Wire Train Bus conformance testing	Published.
EN 61375-2-3:2015/A11:2017 Electronic railway equipment - Train communication network (TCN) - Part 2-3: TCN communication profile	Published.
EN 61375-2-5:2015 Electronic railway equipment - Train communication network (TCN) - Part 2-5: Ethernet train backbone	Published.
EN 61375-3-1:2012 Electronic railway equipment - Train communication network (TCN) - Part 3-1: Multifunction Vehicle Bus (MVB)	Published.
EN 61375-3-2:2012 Electronic railway equipment - Train communication network (TCN) - Part 3-2: MVB (Multifunction Vehicle Bus) conformance testing	Published.
EN 61375-3-3:2012 Electronic railway equipment - Train communication network (TCN) - Part 3-3: CANopen Consist Network (CCN)	Published.
EN 61375-3-4:2014/A11:2017 Electronic railway equipment - Train communication network (TCN) - Part 3-4: Ethernet Consist Network (ECN)	Published.
EN 62580-1:2014/A11:2017 Electronic railway equipment - Onboard multimedia and telematic applications for railways - Part 1: General architecture	Published.
EN 62625-1:2013/A11:2017 Electronic railway equipment - On board driving data recording system - Part 1: System specification	Published.
EN 62625-2:2016 Electronic railway equipment - On board driving data recording system - Part 2: Conformity testing	Published.

TC9X WG18	
Electromagnetic compatibility (EMC)	
Scope: Revision of EN 50121 series related to Railway application - Electromagnetic compatibility (EMC), EN 50500.	
Convenor: Christian Kromer (Germany)	
Secretariat: Germany	
GB reps:	
John Bradshaw, Independent consultant Maya Petkova, Crossrail Limited Colin Place, Bombardier Nick Wainwright, York EMC Services Phil Beirne, Ricardo Rail	
WG18 standards	
EN 50121-1:2017 Railway applications - Electromagnetic compatibility - Part 1: General	Published in May 2017.



EN 50121-2:2017 Railway applications - Electromagnetic compatibility - Part 2: Emission of the whole railway system to the outside world	Published in May 2017.
EN 50121-3-1:2017 Railway applications - Electromagnetic compatibility - Part 3-1: Rolling stock - Train and complete vehicle	Published in April 2017.
EN 50121-3-2:2016 Railway applications - Electromagnetic compatibility - Part 3-2: Rolling stock - Apparatus	Published in January 2017.
EN 50121-4:2016 Railway applications - Electromagnetic compatibility - Part 4: Emission and immunity of the signalling and telecommunications apparatus	Published in January 2017.
EN 50121-5:2017 Railway applications - Electromagnetic compatibility - Part 5: Emission and immunity of fixed power supply installations and apparatus	Published in May 2017.
EN 50500:2008/A1:2015 Measurement procedures of magnetic field levels generated by electronic and electrical apparatus in the railway environment with respect to human exposure	Published.

TC9X SG19 Alignment of prEN 50153, prEN 50388 and EN 50122	
Convenor: Udo Stahlberg (Germany)	
Secretariat: Germany	
GB reps:	
Mike Tatton, RSSB Dave Hewings, Network Rail	
WG19 standards	

TC9X WG20 Revision of EN 50124 series	
Scope: To revise EN 50124 series "Railway applications - Insulation coordination: Part 1: Basic requirements - Clearances and creepage distances for all electrical and electronic equipment, Part 2: Overvoltages and related protections".	
Convenor: Jens Northe (Germany)	
Secretariat: Germany	
GB reps:	
Mike Tatton, RSSB David Knights, RSSB	
WG20 standards	
EN 50124-1:2017 Railway applications - Insulation coordination - Part 1: Basic requirements - Clearances and creepage distances for all electrical and electronic equipment	Published in March 2017.



EN 50124-2:2017 Railway applications - Insulation coordination - Part 2: Overvoltages and related protection	Published in March 2017.
TC9X WG21 Revision of EN 50126-1 & EN 50126-2	
Convenor: Roberto Semprini (Italy)	
Secretariat: Italy	
GB reps: Roger Short, Independent consultant Mike Tatton, RSSB Dave Griffin, RSSB Daniele Diana, Aegis Engineering Sam Newcombe, RSSB (in correspondence)	
WG21 standards	
EN 50126-1:2017 Railway Applications - The Specification and Demonstration of Reliability, Availability, Maintainability and Safety (RAMS) - Part 1: Generic RAMS Process	CLC Formal Vote closed in June 2017. Awaiting publication.
EN 50126-2:2017 Railway Applications - The Specification and Demonstration of Reliability, Availability, Maintainability and Safety (RAMS) - Part 2: Systems Approach to Safety	CLC Formal Vote closed in June 2017. Awaiting publication.
TC9X SG23 Total Energy Management Scope: To investigate the matter of Total Energy Management in the view of a future possible standard.	
Convenor: Alessandro Girardi (Italy)	
Secretary: Denis Miglianico (France)	
GB reps: none	
SG23 standards	
CLC TS 50459-1:2015 Railway applications - Communication, signalling and processing systems - European Rail Traffic Management System - Driver-Machine Interface - Part 1: General principles for the presentation of ERTMS/ETCS/GSM-R information	Published.
CLC TS 50459-2:2015 Railway applications - Communication, signalling and processing systems - European Rail Traffic Management System - Driver-Machine Interface - Part 2: Ergonomic arrangements of GSM-R information	Published.
CLC TS 50459-3:2016 Railway applications - Communication, signalling and processing systems - European Rail Traffic Management System - Driver-Machine Interface - Part 3: Ergonomic arrangements of non ETCS information	Published.



TC9X WG24 IT Security Scope: To refine the existing NWIP and develop a Technical Specification.	
Convenor: vacant	
Secretariat: n/a	
GB reps: Anthony Cross, London Underground Ltd Ali G Hessami, Vega Systems Lucia Capogna, Aegis Engineering	
WG24 standards	

TC9X SG25 RFID for rail Scope: To mirror activities of TC225.	
Convenor: Elodie Bonnin (France)	
Secretariat: n/a	
GB reps: Dave Burbridge, Network Rail	
SG25 standards	



TC9X SC9XA Communication, signalling and processing systems Scope: Standardisation of railway communication, signalling and processing systems, taking into account the relevant safety requirements	GEL/9/1 GB mirror group to SC9XA
Convenor: Stephan Griebel (Germany)	Chair: Roger Short, Independent consult.
Secretary: Daniel Coineau (France)	Secretary: Kveta Pickova, RSSB
GB reps: Roger Short, Head of GB delegation James Hammet, Convenor of WG14 Maya Petkova, Convenor WG04-02 David Bulgin, GB expert	GEL/9/1 experts: Kurt Andersen David Bulgin (RSSB) Steve Crocker (Network Rail) Anthony Cross (London Underground Ltd) Daniele Diana (Aegis Engineering) John Govey James Hammett (UKTram) Mike Harvie (London Underground Ltd) Ali G Hessami (Vega Systems) Jim Irwin (London Underground Ltd) Ross Deacon (London Underground Ltd) Tim Newins (BSI) Maya Petkova (Crossrail Limited) David Polhill (RDG) Peter Still Richard A Stokes Richard Wall (Signalling Solutions Limited) Colin White (London Underground Ltd) John S Williams (Siemens)
CEN standards relevant to SC9XA – parallel voted in CLC	
EN 16432-1:2017 Railway applications - Ballastless track systems - Part 1: General requirements	Publication scheduled for October 2017. Collaboration with CEN TC256 SC1 WG46.
EN 16432-2:2017 Railway applications - Ballastless track systems - Part 2: System design, subsystems and components	Publication scheduled for December 2017. Collaboration with CEN TC256 SC1 WG46.
prEN 16432-3 Railway applications - Ballastless track systems – Part 3: Acceptance	Work has not started yet. Collaboration with CEN TC256 SC1 WG46.
prEN 16432-4 Railway applications - Ballastless track systems – Part 4: Special ballastless track systems for attenuation of vibration	Work has not started yet. Collaboration with CEN TC256 SC1 WG46.
EN 16704-1:2016 Railway applications - Track - Safety protection on the track during work - Part 1: Railway risks and common principles for protection of fixed and mobile work sites	Published. Liaison with CEN TC256 SC1 WG39.
EN 16704-2-1:2016 Railway applications - Track - Safety protection on the track during work - Part 2-1: Common solutions and technologies - Technical requirements for Track Warning Systems (TWS)	Published. Liaison with CEN TC256 SC1 WG39.



EN 16704-2-2:2016 Railway applications - Track - Safety protection on the track during work - Part 2-2: Common solutions and technology - Requirements for barriers	Published. Liaison with CEN TC256 SC1 WG39.
EN 16704-3:2016 Railway applications - Track - Safety protection on the track during work - Part 3: Competences for personnel related to work on or near tracks	Published. Liaison with CEN TC256 SC1 WG39.

SC9XA WG04-02 Compatibility between rolling stock and train detection systems - EN 50238 series Scope: The aim is to standardise the electromagnetic interference limits and test specifications for ensuring compatibility of interoperable rolling stock on lines using track circuits, axle counters. EN 50617, EN 50238 Convenor: Maya Petkova (GB, Crossrail Limited) Secretariat: UK GB reps: none	
WG04-02 Standards	
prEN 50238-1:2017 Railway applications - Railway applications - Compatibility between rolling stock and train detection systems - Part 1: General	Currently out for comment. CLC Enquiry closes on 22 September 2017.
CLC TS 50238-2:2015/AC:2016-07 Railway applications - Compatibility between rolling stock and train detection systems - Part 2: Compatibility with track circuits	Published.
CLC TS 50238-3:2013 Railway applications - Compatibility between rolling stock and train detection systems - Part 3: Compatibility with axle counters	Published.
EN 50617-1:2015 Railway applications - Technical parameters of train detection systems for the interoperability of the trans-European railway system - Part 1: Track circuits	Published.
EN 50617-2:2015/AC:2016 Railway Applications - Technical parameters of train detection systems for the interoperability of the trans-European railway system - Part 2: Axle counters	Published.

SC9XA WG14 Railway applications - Signalling and control systems for non UGTMS Urban Rail systems	
Convenor: James Hammett, UKTram (UK)	
Secretary: Kveta Pickova, RSSB (UK)	
GB reps:	
Steve Firth, UKTram	
Steve Hyde, UKTram	



WG14 standards	
prEN 50668 Railway applications - Signalling and control systems for non UGTMS Urban Rail systems	Drafting in progress.
SC9XA WG15 Maintenance of EN 50129	
Convenor: Attilio Ciancabilla (Italy)	
Secretariat: n/a	
GB reps: Roger Short, Independent consultant Daniele Diana, Aegis Engineering Anthony Cross, London Underground Ltd	
WG15 standards	
prEN 50129:2016 Railway applications - Communication, signalling and processing systems - Safety related electronic systems for signalling	CLC Enquiry closed in February 2017. Working on responses to comments and preparing draft for Formal Vote.
SC9XA WG16 IT Security	
Scope: a) Surveying the work and progress of the TC9X/SG24. b) Elaborating further technical issues in preparation of a future working group on SC9XA level. c) Presenting a report to SC9XA for the next meeting on 16th May 2017 including recommendations if and when to start the working group on a SC9XA level. d) Organizing in a resource sensitive way the meetings in order to avoid undue overload for the experts.	
Convenor: Jens Braband (Germany)	
Secretariat: n/a	
GB rep: Ali G Hessami, Vega Systems Anthony Cross, London Underground Ltd	
WG16 standards	
SC9XA WG17 Maintenance of EN 50239	
Scope: Unchanged with respect to the current edition EN 50239:1999. This standard covers the application requirements relevant to the radio remote control of a traction unit for shunting	



application, operated by personnel not physically located at the controls within the vehicle cab. Specification requirements of radio means and wireless protocols, as well as specification requirements of wireless communication between elements of the train, are not covered by this standard.	
Convenor: Daniel Coineau (France)	
Secretariat: n/a	
GB reps: none	
WG17 standards	
prEN 50239:2016 Railway applications - Radio remote control system of traction vehicle for shunting application	CLC Formal Vote scheduled between August & October 2017.
SC9XA SG18	
Software	
Convenor: Andrea Palermo (Italy)	
Secretary: Axel Zechner (Germany)	
GB reps:	
Roger Short, Independent consultant Daniele Diana, Aegis Engineering	
SG18 standards	



<p>TC9X SC9XB Electrical, electronic and electromechanical material on board rolling stock, including associated software</p> <p>Scope: Standardisation of electrical, electronic and electromechanical material on board rolling stock, including associated software.</p>	<p>GEL/9/2 GB mirror committee to SC9XB</p>
<p>Convenor: Chris Llewellyn, SGS Correl Rail Limited (UK)</p>	<p>Chair: Chris Llewellyn, SGS Correl Rail</p>
<p>Secretary: Joachim Ring (Germany)</p>	<p>Secretary: Kveta Pickova, RSSB</p>
<p>GB reps:</p> <p>Chris Llewellyn, Head of GB delegation David Knights, Convenor of WG28 Maya Petkova, Convenor of WG30</p>	<p>GEL/9/2 experts:</p> <p>Lee Brun (Wabtec) David Clarke (RIA) Steve Cullingford (Wabtec) Daniele Diana (Aegis Engineering) David Knights (RSSB) James Little (Bombardier) Jim Lupton (RIA) Russell Martin (M&I Materials Limited) Malcolm Miles (Network Rail) Sam Newcombe (RSSB) Tim Newins (BSI) Hugh O'Neill (RSSB) Maya Petkova (Crossrail Limited) Peter Theobald (RDG) Jeff Ward (Eurostar)</p>
<p>IEC standards relevant to SC9XB – parallel voted in CLC</p>	
<p>FprEN 60077-1:2017 Railway applications - Electric equipment for rolling stock - Part 1: General service conditions and general</p>	<p><i>Final vote (FDIS) closed in May 2017. Awaiting publication.</i></p>
<p>FprEN 60077-2:2017 Railway applications - Electric equipment for rolling stock - Part 2: Electrotechnical components - General rules</p>	<p><i>Final vote (FDIS) closed in May 2017. Awaiting publication.</i></p>
<p>EN 60077-3:2002 Railway applications - Electric equipment for rolling stock - Part 3: Electrotechnical components - Rules for d.c. circuit-breakers</p>	<p>Published.</p>
<p>EN 60077-4:2003 Railway applications - Electric equipment for rolling stock - Part 4: Electrotechnical components - Rules for AC circuit-breakers</p>	<p>Published.</p>
<p>EN 60077-5:2003 Railway applications - Electrotechnical equipment for rolling stock - Part 5: Electrotechnical components - Rules for HV fuses</p>	<p>Published.</p>
<p>EN 60310:2016 Railway applications - Traction transformers and inductors on board rolling Stock</p>	<p>Published.</p>
<p>EN 61377:2016 Railway applications - Rolling stock - Combined test method for traction Systems</p>	<p>Published.</p>



EN 60349-1:2010 Electric traction - Rotating electrical machines for rail and road vehicles - Part 1: Machines other than electronic converter-fed alternating current motors	Published.
EN 60349-2:2010 Electric traction - Rotating electrical machines for rail and road vehicles - Part 2: Electronic converter-fed alternating current motors	Published.
EN 60349-4:2013 Electric traction - Rotating electrical machines for rail and road vehicles - Part 4: Permanent magnet synchronous electrical machines connected to an electronic converter	Published.
EN 61377-1:2006/corrigendum Dec. 2006 Railway applications - Rolling stock - Part 1: Combined testing of inverter-fed alternating current motors and their control system	Published.
EN 61377-2:2002 Railway applications - Rolling stock - Combined testing - Part 2: Chopper-fed direct current traction motors and their control	Published.
EN 61881-1:2011 Railway applications - Rolling stock equipment - Capacitors for power electronics - Part 1: Paper/plastic film capacitors	Published.
EN 61881-2:2012 Railway applications - Rolling stock equipment - Capacitors for power electronics - Part 2: Aluminium electrolytic capacitors with non-solid electrolyte	Published.
EN 61881-3:2012/A1:2013 Railway applications - Rolling stock equipment - Capacitors for power electronics - Part 3: Electric double-layer capacitors	Published.
EN 62718:2016 Railway applications - Rolling stock - DC supplied electronic ballasts for lighting fluorescent lamps	Published.

SC9XB WG19 3-phase shore (external) supply system for rail vehicles Scope: Description of mechanical interfaces: Definition of interface between shore supply connector - vehicle fixed connector, - Description of electrical interfaces: Definitions for the range of voltage, current and power, - Safety-related items: Definitions for safe operation for the shore (external) power supply system. TS 50546	
Convenor: Sam Newcombe, RSSB (UK)	
Secretary: Kveta Pickova, RSSB (UK)	
GB reps: Ian Langford, TT Electronics Malcolm Miles, Network Rail David Polhill (RDG)	
WG19 standards	
prEN 50546 Railway applications - Rolling stock - 3-phase shore (external) supply system for rail vehicles	Awaiting the NWIP.
CLC TS 50546:2013 Railway applications - Rolling stock - 3-phase shore (external) supply system for rail vehicles	Published.



SC9XB WG29 Electronic equipment used on rail vehicles	
Scope: Revision of 50155	
Convenor: Carlo Fasoli (Italy)	
Secretariat: Germany	
GB reps: Ian Emson, Alstom West Coast Sam Newcombe, RSSB Richard Bevan, SNC Lavalin	
WG29 standards	
EN 50155:2017 Railway applications - Rolling stock - Electronic equipment	CLC Formal Vote closed in March 2017. Publication scheduled for November 2017.
SC9XB WG31 Software on-board rolling stock	
Scope: To define the scope of the rolling stock software standard. EN 50128	
Convenor: Frank Gustke (DE)	
Secretariat: n/a	
GB reps: John Stafford, RSSB Rajaji Krishnamachari, Edif ERA Daniele Diana, Aegis Engineering Peter Theobald, RDG Sam Newcombe, RSSB (in correspondence)	
WG31 standards	
EN 50657:2017 Railway applications - Rolling stock applications - Software onboard of rolling stock	CLC Formal Vote closed in March 2017. Publication scheduled for November 2017.
SC9XB WG32 Specification and verification of energy consumption for railway rolling stock - prEN 50591	
Convenor: Dr Martin Schober (DE)	
Secretariat: n/a	
GB reps: none	



WG32 standards	
prEN 50591 Railway applications - Rolling stock applications - Specification and verification of energy consumption for railway rolling stock	Drafting in progress.

SC9XB WG33 Third rail current collectors	
Convenor: Wolfram Tessmer (DE)	
Secretariat: Germany	
GB reps: Shamil Velji, RSSB Lee Brun, Wabtec	
WG33 standards	

SC9XB WG34 Testing for electromagnetic compatibility between rolling and track circuits	
Convenor: vacant	
Secretary: n/a	
GB reps: Colin Place, Bombardier Phil Beirne, Ricardo Rail	
WG34 standards	



TC9X SC9XC Electric supply and earthing systems for public transport equipment and ancillary apparatus (Fixed installations)	GEL/9/3 GB mirror committee to SC9XC
Scope: Standardisation of - AC and DC supply lines, both overhead and third rail type, - ancillary circuits, - machinery and equipment of special feature for traction in fixed plants, - installations and safety requirements in fixed plants.	
Convenor: Claudio Spalvieri (Italy)	Chair: John Morris, Independent consult.
Secretary: Alexandre Machet (France)	Secretary: Kveta Pickova, RSSB
GB experts: John Morris, Head of GB delegation Phil Doughty, Convenor of WG13	GEL/9/3 experts: Gavin Bloch (TfL) Chris Bryan (Furrer+Frey GB Ltd) David Crawley Daniele Diana (Aegis Engineering) Philip Doughty (Network Rail) Paul W Hooper (Atkins) David Knights (RSSB) Ken Lax (Corroconsult UK Limited) Tim Newins (BSI) John Parsons (BEAMA) David Polhill (RDG) Colin Robey (Transport for West Midlands) Richard Stainton (Network Rail) Mike Tatton (RSSB) Shamil Velji (RSSB) Frank Waterland Dave Hewings (Network Rail)
IEC standards relevant to SC9XC – parallel voted in CLC	
EN 62621:2016/A1:2016 Railway applications - Fixed installations - Electric traction - Specific requirements for composite insulators used for overhead contact line systems	See SC9XC WG13 below.
EN 62924:2017 Railway applications - Fixed installations - Stationary energy storage system for DC traction systems	Published in June 2017.



SC9XC WG01 Electrical safety, earthing and the return circuit Scope: Prepare and maintain standards for requirements for the protective provisions - relating to electrical safety in fixed installations associated with a.c. and/or d.c. traction systems and to any installations that can be endangered by the traction power supply system - against the effects of stray currents, which result from the operation of d.c. traction systems - relating to electrical safety in fixed installations, when it is reasonably likely that hazardous voltages or currents will arise for people or equipment, as a result of the mutual interaction of a.c. and d.c. electric traction systems. EN 50122 series.	
Convenor: Steffen Rohlig (Germany)	
Secretariat: Germany	
GB reps: Dave Hewings, Network Rail Richard Stainton, Network Rail Mike Tatton, RSSB David Knights, RSSB	
WG01 standards	
prEN 50122-1 Railway applications - Fixed installations - Electrical safety, earthing and the return circuit - Part 1: Protective provisions against electric shock	Drafting in progress.
prEN 50122-2 Railway applications - Fixed installations - Electrical safety, earthing and the return circuit - Part 2: Provisions against the effects of stray currents caused by d.c. traction systems	Drafting in progress.
prEN 50122-3 Railway applications - Fixed installations - Electrical safety, earthing and the return circuit - Part 3: Mutual Interaction of a.c. and d.c. traction systems	Drafting in progress.
SC9XC WG07 Fixed installations and rolling stock - current collection systems - measurements and simulation of the interaction between pantograph and overhead contact line Scope: Prepare and maintain standards regarding measurement and simulation of dynamic interactions between pantograph and contact line. EN 50317 and EN 50318.	
Convenor: Albrecht Brodkorb (Germany)	
Secretariat: Germany	
GB reps: John Morris, Independent consultant Shamil Velji, RSSB Chris Bryan, Furrer+Frey GB Ltd	



Phil Doughty, Network Rail Richard Stainton, Network Rail	
WG07 standards	
prEN 50318 Railway applications - Current collection systems - Validation of simulation of the dynamic interaction between pantograph and overhead contact line	CLC Enquiry closed in February 2017. Working on responses to comments and preparing draft for Formal Vote.
EN 50317:2012 Railway applications - Current collection systems - Requirements for and validation of measurements of the dynamic interaction between pantograph and overhead contact line	Published.
SC9XC SG08 Environmental conditions	
Convenor: vacant	
Secretariat: n/a	
GB reps: none	
SG08 standards	
prEN 50125-2 Railway applications - Environmental conditions for equipment - Part 2: Fixed electrical installations	Work has not started yet.
SC9XC WG09 Fixed installations and rolling stock - current collection systems - technical criteria for the interaction between pantograph and overhead contact line	
Scope: Prepare and maintain standard for requirements for the acceptance of rolling stock on infrastructure in the field of interaction between pantograph and overhead contact line. EN 50367.	
Convenor: Dirk Behrends (Germany)	
Secretariat: Germany	
GB reps: Phil Doughty, Network Rail David Knights, RSSB Sam Newcombe, RSSB (in correspondence)	
WG09 standards	
prEN 50367 Railway applications - Current collection systems - Technical criteria for the interaction between pantograph and overhead line (to achieve free access)	NWIP approved in April 2017. Drafting in progress.



SC9XC WG11 Power supply and rolling stock - Technical criteria for the coordination between the power supply systems (substations) and rolling stock Scope: Prepare and maintain standards for requirements for the acceptance of rolling stock on infrastructure in the field of - coordination of protection principles (fault discrimination, for short circuits, limited current faults, earth faults, etc) between power supply and traction units - coordination of installed power on the line and power demand of the trains - coordination of traction unit regenerative braking and power supply receptivity EN 50388 series.	
Convenor: Christian Courtois (France)	
Secretariat: France	
GB reps: Dave Hewings, Network Rail David Knights, RSSB Colin Place, Bombardier Krzysztof Moscicki, Network Rail Stuart Hillmansen, University of Birmingham Sam Newcombe, RSSB (in correspondence)	
WG11 standards	
prEN 50388-1:2017 Railway Applications - Fixed installations and rolling stock - Technical criteria for the coordination between traction power supply and rolling stock to achieve interoperability – Part 1: General	CLC Enquiry closed in July 2017. Working on responses to comments and preparing draft for Formal Vote.
prEN 50388-2:2017 Railway Applications - Fixed installations and rolling stock - Technical criteria for the coordination between power supply and rolling stock to achieve interoperability - Part 2: stability and harmonics	CLC Enquiry closed in July 2017. Working on responses to comments and preparing draft for Formal Vote.
SC9XC WG13 Overhead contact lines Scope: Prepare and maintain product and system standards for contact lines used in railway fixed installations. EN 50119 and EN 50149, EN 50125, EN 62621.	
Convenor: Phil Doughty, Network Rail (UK)	
Secretary: Kveta Pickova, RSSB (UK)	
GB reps: Shamil Velji, RSSB Lee Brun, Wabtec James Atyeo, Wabtec	
WG13 standards	



prEN 50119:2017 Railway applications - Fixed installations - Electric traction overhead contact lines	CLC Enquiry scheduled between August & October 2017.
EN 50149:2012 Railway applications - Fixed installations - Electric traction - Copper and copper alloy grooved contact wires	Published.
EN 62621:2016/A1:2016 Railway applications - Fixed installations - Electric traction - Specific requirements for composite insulators used for overhead contact line systems	Published. <i>IEC standard / parallel voted in CLC.</i>

SC9XC WG14	
Electric traction safety measures for the personal working near overhead line equipment	
Scope: Conversion of TR 50488 into an EN	
Convenor: Fabrizio Caracciolo (Italy)	
Secretariat: Italy	
GB reps:	
Alex Buchinger, Network Rail Mike Tatton, RSSB David Knights, RSSB	
WG14 standards	
prEN 50488 Railway applications - Fixed Installations - Electrical safety measures for working on or near an overhead contact line system and/or its associated return circuit	NWIP approved in March 2017. Drafting in progress.

SC9XC WG17	
Process, measures and demonstration of safety for electric traction systems	
Scope: Maintain the document 'Code of Practice' on the safety for electrical traction system. EN 50562	
Convenor: Stephan Zenglein (Germany)	
Secretariat: Germany	
GB reps:	
Richard Stainton, Network Rail Mike Tatton, RSSB	
WG17 standards	
FprEN 50562:2017 Railway applications - Fixed installations - Process, protective measures and demonstration of safety for electric traction systems	CLC Formal Vote closes on 21 July 2017.



SC9XC WG18 D.C. and A.C. switchgear Scope: Prepare and maintain product standards for switchgear and major components incorporated which are used in railway fixed installations. EN 50123 series EN 50152 series	
Convenor: Jens Northe (Germany)	
Secretariat: Germany	
GB reps: none	
WG18 standards	
EN 50152-1:2012/A1:2013 Railway applications - Fixed installations - Particular requirements for alternating current switchgear - Part 2: Disconnectors, earthing switches and switches with nominal voltage above 1 kV	Published.
EN 50152-2:2012 Railway applications - Fixed installations - Particular requirements for alternating current switchgear - Part 2: Disconnectors, earthing switches and switches with nominal voltage above 1 kV	Published.
EN 50152-3-1:2017 Railway applications - Fixed installations - Particular requirements for a.c. switchgear - Part 3-1: Measurement, control and protection devices for specific use in a.c. traction systems - Devices	Published in June 2017.
EN 50152-3-2:2016 Railway applications - Fixed installations - Particular requirements for a.c. switchgear - Part 3-2: Measurement, control and protection devices for specific use in a.c. traction systems - Current transformers	Published.
EN 50152-3-3:2016 Railway applications - Fixed installations - Particular requirements for a.c. switchgear - Part 3-3: Measurement, control and protection devices for specific use in a.c. traction systems - Voltage transformers	Published.
EN 50123-1:2003 Railway applications - Fixed installations - D.C. switchgear - Part 1: General	Published.
EN 50123-2:2003 Railway applications - Fixed installations - D.C. switchgear - Part 2: D.C. circuit breakers	Published.
EN 50123-3:2003/A1:2013 Railway applications - Fixed installations - D.C. switchgear - Part 3: Indoor d.c. disconnectors, switch-disconnectors and earthing switches	Published.
EN 50123-4:2003/A1:2013 Railway applications - Fixed installations - D.C. switchgear - Part 4: Outdoor d.c. disconnectors, switch-disconnectors and earthing switches	Published.
EN 50123-6:2003/A1:2014 Railway applications - Fixed installations - D.C. switchgear - Part 6: D.C. switchgear assemblies	Published.
EN 50123-7-1:2003 Railway applications - Fixed installations - D.C. switchgear - Part 7-1: Measurement, control and protection devices for specific use in d.c. traction systems - Application guide	Published.
EN 50123-7-2:2003 Railway applications - Fixed installations - D.C. switchgear - Part 7-2: Measurement, control and protection devices	Published.



for specific use in d.c. traction systems - Isolating current transducers and other current measuring devices	
EN 50123-7-3:2003 Railway applications - Fixed installations - D.C. switchgear - Part 7-3: Measurement, control and protection devices for specific use in d.c. traction systems - Isolating voltage transducers and other voltage measuring devices	Published.

SC9XC WG20	
Power supply - requirements for the validation of simulation tools	
Scope: Prepare a new standard for the validation of simulations tools for designing power supply systems. EN 50641	
Convenor: Christian Courtois (France)	
Secretariat: France	
GB reps:	
Dave Hewings, Network Rail Krzysztof Moscicki, Network Rail	
WG20 standards	
prEN 50641:2017 Railway applications - Fixed installations - Requirements for the validation of simulation tools used for the design of traction power supply systems	CLC Enquiry scheduled between August & October 2017.

SC9XC SG23	
Fixed installations specific security	
Convenors: vacant	
Secretariat: n/a	
GB reps: none	
SG23 standards	