

<b>Notes:</b>		
- Any relevant change to already supplied documentation requires the respective documents to be re-supplied.		
- Any Re-Submission for a stage must cover all aspects of that stage.		
- Color coding indicating the stage where an issue must be submitted as part of a stage:		Initial submission to RSC
		subsequent and more detailed update

<b>PART 1 (Management of APIS Process)</b>								
No.	National Requirement in the State (NTR for APIS process)	Detailed Requirement	Stage 1 Concept	Stage 2 Preliminary Design (Optional)	Stage 3 Overall (Detailed) Design	Stage 4 Testing	Stage 5 Interim Operation (Optional)	Stage 6 Operation
<b>00.01</b>	<b>Project Submissions</b>							
00.01.01	Project Submission	Project Safety Plan in accordance with Annex 1 of RSC-G-009						
00.01.02	Project Submission	Proposal on level of significance in accordance to CSM-RA 352/2009 (may be included within Safety Plan)						
00.01.03	Project Submission	Project Hazard Record in accordance with Annex 2 of RSC-G-009						
00.01.04	Project Submission	Project Safety- and Compliance Matrix in accordance with Annex 4 of RSC-G-009						
00.01.05	Project Submission	Generic Product Safety Case (if used)						
00.01.06	Project Submission	Generic Application Safety Case (if used)						
00.01.07	Project Submission	Application Specific Project Safety Case (NWA) - Stage 4 in accordance with Annex 3 of RSC-G-009						
00.01.08	Project Submission	Application Specific Project Safety Case (NWA) - Stage 5 in accordance with Annex 3 of RSC-G-009						
00.01.09	Project Submission	Application Specific Project Safety Case (NWA) - Stage 6 in accordance with Annex 3 of RSC-G-009						
00.01.10	Project Submission	EC-Intermediate Statement(s) of Verification (ISV) (2008/57/EC) (if used in combination with EC-Certificate)						
00.01.11	Project Submission	EC/ National-Certificate(s) of Verification (2008/57/EC)						
00.01.12	Project Submission	EC/ National-Declaration, including all declarations for constituents and subsystems, Combined Technical File elements, other evidence as appropriate.						
00.01.13	Project Submission	EC-Declaration relating to EU requirements other than 2008/57/EC as appropriate (for Stage 5 or 6 when operating on the Network in the State)						
<b>00.02</b>	<b>Assessment Reporting - in case of RSA-APIS</b>							
00.02.01	Independent Assessor Reporting	IA Review Report on overall project at each stage (if used within project)		(as applicable)	(as applicable)	(as applicable)	(as applicable)	(as applicable)
00.02.02	Other Assessment Reporting	e.g. RU/IM self assessment						

<b>00.03</b>	<b>Assessment Reporting - in case of combined RSA- IOD-APIS</b>							
00.03.01	NoBo Intermediate Reporting	NoBo ISV with associated report and EC-Technical File (as applicable) (if used in combination with EC-Certification)		(as applicable)	(as applicable)	(as applicable)	(as applicable)	(as applicable)
00.03.02	DeBo Intermediate Reporting (2011/217/EU)	DeBo National-ISV with associated report and N-Technical File (as applicable) (if used)		(as applicable)	(as applicable)	(as applicable)	(as applicable)	(as applicable)
00.03.03	NoBo final Reporting	NoBo EC Certificates with associated reports and Technical File (as applicable)						
00.03.04	DeBo final Reporting (2011/217/EU)	DeBo National-Certificates with associated report and N-Technical File						
<b>00.04</b>	<b>Assessment Reporting - relating to CSM 352/2009</b>							
00.04.01	CSM-AB Reporting	Status reporting and associated evidence for each stage		(recommended, not mandatory)	(recommended, not mandatory)			
<b>00.05</b>	<b>Management of Works</b>							
00.05.01	Project Submission	Proposed concept on Enabling Works						
00.05.02	Project Submission	Proposed concept of protection of operational railway and other parties during works						

<b>PART 2 List of Parameters for ENE &amp; related OPE/MAI Sub-System aspects</b>			<b>National requirements in the State</b>	<b>TSI-requirements + associated mandatory and voluntary standards (for information)</b>			<b>TSI-specific cases (for Information)</b>
<b>Ref.</b>	<b>Parameter</b>	<b>Detailed Parameter</b>	<b>NTR for INF &amp; related OPE/MAI Sub-System aspects</b>	<b>Relevant CR TSI and other EU requirements</b>	<b>Mandatory Standards</b>	<b>Voluntary Standards</b>	<b>Specific Cases</b>
<b>TSI ENE CR refers to 2012/274/EU (applicable from 01.06.2011(Art7))</b> <b>TSI CCS refers to 2012/88/EU (applicable from 25.07.2012(Art 8))</b> <b>TSI L&amp;P CR refers to 2011/291/EU (applicable from 01.06.2011(Art 9)) amend. by 2012/88/EU</b> <b>TSI INF CR refers to 2011/275/EU (applicable from 01.06.2011(Art 9))</b> <b>TSI SRT refers to 2008/163/EC (applicable from 01.07.2008 (Art 3))</b> <b>TSI PRM refers to 2008/164/EC (applicable from 01.07.2008(Art 4))</b> <b>TSI OPE CR refers to 2011/314/EU (applicable from 1.1.2012(Art 6+7))</b> <b>Projects in the Scope of High Speed must request an updated list from RSC.</b>				<b>Items marked with (SC) are replaced by a Specific Case.</b> <b>(OP) refers to an Open Point.</b>			
<b>01.00</b>	<b>General Parameters</b>						
01.01	general parameters	Summary of General Arrangement and Type and Purpose of Project (e.g. Location/ Line/ chainage/ section of track/ Project boundary/ max. speed/ general layout/ etc.)	TSI ENE CR 2 +add. NTR: TBD	TSI ENE CR 2			
01.02	general parameters	Defininition of Scope relating New Build/ Upgrade / Renewal (general description and description in the context of any applicable TSI)	TSI ENE CR 2008/57/EC 1+2+5.2+6.9+9.1+20 +add. NTR: TBD	TSI ENE CR 2008/57/EC 1+2+5.2+6.9+9.1+20			
01.03	general parameters	Declaration of intended design life for each aspect of the project	RSC-G-026 01.03				
01.04	general parameters	Data sheet containing Infrastructure Register information according to applicable TSIs and to 2011/633/EU	TSI ENE CR 4.8 TSI ENE CR 4.2.3+4.2.4.1+4.2.6+4.2.7+4.2.13.1+4.2.13.3+4+2.17+4.2.18+4.2.19+4.2.20.1+4.2.20.2 TSI OPE 4.8 TSI ENE CR AnnexC +add. NTR: TBD	TSI ENE CR 4.8 TSI ENE CR 4.2.3+4.2.4.1+4.2.6+4.2.7+4.2.13.3+4+2.17+4.2.18+4.2.19+4.2.20.1+4.2.20.2 TSI OPE 4.8	TSI ENE CR AnnexC		

01.05	general parameters	absence and/or control of hazardous materials during installation, operation, maintenance, de-commissioning. At min. declaration on absence of Asbestos, PCB, radioactive material, etc.	1907/2006 REACH +add. NTR: TBD	1907/2006 REACH			
<b>02.00</b>	<b>Additional requirements relevant in combination with all parameters</b>						
02.01	environmental factors	environmental factors and related protection for all parameters (including drainage and ventilation)	safety requirements to be established based on: CSM 352/2009 EN 50126-1:1999 EN 50126-2:2007 EN 50128:2011 EN 50129:2003 EN 50159:2010 +add. NTR: TBD			safety requirements to be established based on: CSM 352/2009 EN 50126-1:1999 EN 50126-2:2007 EN 50128:2011 EN 50129:2003 EN 50159:2010	
02.02	access control	appropriate tamper protection for all parameters (including mechanical enclosure, locking arrangement, access management, intrusion detection, CCTV, etc.)	safety requirements to be established based on: CSM 352/2009 EN 50126-1:1999 EN 50126-2:2007 EN 50128:2011 EN 50129:2003 EN 50159:2010 +add. NTR: TBD			safety requirements to be established based on: CSM 352/2009 EN 50126-1:1999 EN 50126-2:2007 EN 50128:2011 EN 50129:2003 EN 50159:2010	

02.03	electrical protection coordination	electrical safety (protection against unsafe touch potentials, isolation co-ordination, repercussions into safety critical equipment, etc.)	TSI ENE CR 4.7.3 2006/95/EC low voltage directive EN50119:2009 4.3 EN50122-1:1997 4.1+4.2+5.1+5.2+7 EN 50122 EN 60529 +add. NTR: TBD	TSI ENE CR 4.7.3 2006/95/EC low voltage directive	EN50119:2009 4.3 EN50122-1:1997 4.1+4.2+5.1+5.2+7	EN 50122 EN 60529	
02.04	earthing	bonding, earthing concept (incl. lightning protection and earthing of equipment near/under OHL equipment)	TSI ENE CR 4.7.3 EN 50119 EN 50153 UIC 533 +add. NTR: TBD	TSI ENE CR 4.7.3		EN 50119 EN 50153 UIC 533	
02.05	EMC	Electromagnetical Compatibility (emissions, susceptibility, EMC plan, compatibility with operating environment, rolling stock, other signalling and telecommunication system equipment and other railways, etc.)	TSI ENE CR 4.2.11 EMC Directive 2004/108/EC EN 50121 series +add. NTR: TBD	TSI ENE CR 4.2.11 EMC Directive 2004/108/EC		EN 50121 series	
02.06	fire and evacuation	fire performance and evacuation concept (incl. material properties, detection, suppression, safe degradation of safety critical equipment, portable fire fighting equipment, etc.)	safety requirements to be established based on: CSM 352/2009 EN 50126-1:1999 EN 50126-2:2007 EN 50128:2011 EN 50129:2003 EN 50159:2010 +add. NTR: TBD			safety requirements to be established based on: CSM 352/2009 EN 50126-1:1999 EN 50126-2:2007 EN 50128:2011 EN 50129:2003 EN 50159:2010	
02.07	Environment	Protection of the environment	TSI ENE CR 4.2.12 "other European legislation" +add. NTR: TBD	TSI ENE CR 4.2.12	"other European legislation"		
<b>03.00</b>	<b>Performance parameters of Energie supply system</b>						

03.01	General performance	maximum speed permitted for OHLE, generic types of electric trains permitted to operate, max. permitted power demand of trains at pantographs inside one section.	TSI ENE CR 4.2.1 +add. NTR: TBD	TSI ENE CR 4.2.1			
03.02	Substations	Design: specific requirements, type of equipment, (normal) permitted normal and degraded operational conditions, positioning of associated equipment, interfacing, local and remote control, SCADA (Supervisory Control and Data Acquisition), main circuit breaker rating, etc.	safety requirements to be established based on: CSM 352/2009 EN 50126-1:1999 EN 50126-2:2007 EN 50128:2011 EN 50129:2003 EN 50159:2010 +add. NTR: TBD			safety requirements to be established based on: CSM 352/2009 EN 50126-1:1999 EN 50126-2:2007 EN 50128:2011 EN 50129:2003 EN 50159:2010	
03.03	Voltage and Frequency	nominal values and permitted limits of the voltage and frequency at the terminals of a substation and at any pantograph contact point supplied from that substation	TSI ENE CR 4.2.3 EN50163:2004 (4) +add. NTR: TBD	TSI ENE CR 4.2.3	EN50163:2004 (4)		
03.04	Mean useful voltage	calculated mean useful voltage at pantograph contact point	TSI ENE CR 4.2.4.3 TSI ENE CR 6.2.4.1 EN50388:2005, 8.3 and 8.4, using power factor design data acc. to TSI ENE CR Annex G EN50388:2005,14.4.1+14.4.2 (simulation only)+14.4.3 +add. NTR: TBD	TSI ENE CR 4.2.4.3 TSI ENE CR 6.2.4.1	EN50388:2005, 8.3 and 8.4, using power factor design data acc. to TSI ENE CR Annex G EN50388:2005,14.4.1+14.4.2 (simulation only)+14.4.3		
03.05	Current	nominal values and permitted limits of the current at the terminals of a substation and at any pantograph contact point supplied from that substation	+add. NTR: TBD				
03.06	Current	max. permitted current per single pantograph	+add. NTR: TBD				

03.07	Current	Standstill DC current capacity per single pantograph (in combination with contact force and temperature)	TSI ENE CR 4.2.6 (min. 300A /1,5kV) TSI ENE CR 5.2.1.6 TSI ENE CR 6.1.4.2 EN50367:2006 (7.1+ Ann A.4.1) EN50119:2009 (5.1.2) +add. NTR: TBD	TSI ENE CR 4.2.6 (min. 300A /1,5kV) TSI ENE CR 5.2.1.6 TSI ENE CR 6.1.4.2	EN50367:2006 (7.1+ Ann A.4.1) EN50119:2009 (5.1.2)		
03.08	Current	the maximum permitted train current (incl. all pantographs and all power consumed by a train) and permitted limits (e.g.max. instantaneous $\Delta I/\Delta t$ , thermal tripping)	TSI ENE CR 4.2.4.1 (min. supply: 2MW per train) EN50388:2005 (7.3) +add. NTR: TBD	TSI ENE CR 4.2.4.1 (min. supply: 2MW per train)	EN50388:2005 (7.3)		
03.09	Stray Current protection	Protection of AC railway equipment (e.g. locomotive transformers) from DC stray current)	+add. NTR: TBD				
03.10	Stray Current protection	stray current protection to railway equipment and any other parties	+add. NTR: TBD				
03.11	Power Factor	limits to acceptable power factor of trains	TSI ENE CR 4.2.4.2 TSI ENE CR AnnexG EN50388:2005 (6.3) +add. NTR: TBD	TSI ENE CR 4.2.4.2	TSI ENE CR AnnexG EN50388:2005 (6.3)		
03.12	Tunnel Installation	Continuity of power supply in case of disturbances in tunnels (sectioning)	TSI ENE CR 4.2.5 TSI SRT 4.2.3.1 +add. NTR: TBD	TSI ENE CR 4.2.5	TSI SRT 4.2.3.1		
03.13	Regenerative braking	Regenerative braking concept for AC systems (including substations and their feed, etc.)	TSI ENE CR 4.2.7 (to provide seamless power re-distribution) TSI ENE CR 6.2.4.2 EN50388:2005 (14.7.2) +add. NTR: TBD	TSI ENE CR 4.2.7 (to provide seamless power re-distribution) TSI ENE CR 6.2.4.2	EN50388:2005 (14.7.2)		

03.14	Regenerative braking	Regenerative braking concept for DC systems (including substations and their feed, power storage devices, etc.)	TSI ENE CR 4.2.7 (to provide power re-distribution at least to other trains) TSI ENE CR 6.2.4.2 +add. NTR: TBD	TSI ENE CR 4.2.7 (to provide power re-distribution at least to other trains) TSI ENE CR 6.2.4.2			
03.15	electrical protection coordination of substations	electrical protection coordination (incl. performance of automatic circuit breakers (immediate limits for over/under voltage, max. instantaneous voltage change over time, thermal limits, immediate limits for over current, max. instantaneous current change over time, lightning surge arrestors, protection of autotransformer systems, etc.)	TSI ENE CR 4.2.8 TSI ENE CR 6.2.4.3 EN50388:2005 (11 except Table 8 which is replaced by TSI ENE CR Annex H)(14.6) +add. NTR: TBD	TSI ENE CR 4.2.8 TSI ENE CR 6.2.4.3	EN50388:2005 (11 except Table 8 which is replaced by TSI ENE CR Annex H)(14.6)		
03.16	Harmonics	Harmonics and dynamic effects for AC systems	TSI ENE CR 4.2.9 TSI ENE CR 6.2.4.4 EN50388:2005 clause 10 +add. NTR: TBD	TSI ENE CR 4.2.9 TSI ENE CR 6.2.4.4	EN50388:2005 clause 10		
03.17	Harmonics	Harmonics and dynamic effects for DC systems	+add. NTR: TBD				
03.18	Harmonics	Harmonic emissions towards the power utility	TSI ENE CR 4.2.10 European or national standards, requirements of the power utility +add. NTR: TBD	TSI ENE CR 4.2.10	European or national standards, requirements of the power utility		
<b>04.00</b>	<b>OHLE</b>						
04.01	General performance	maximum speed permitted for OHLE, generic types of electric trains permitted to operate	TSI ENE CR 4.2.1 +add. NTR: TBD	TSI ENE CR 4.2.1			



04.02	OHLE hight	nominal hight (min. /max.), permitted tolerances (design min, absolute min., design max., absolute max.) (considering sag, creep, ice loading, uplift, etc.)	TSI ENE CR 4.2.13.1 (5.00-5.75m nom., 6.50m abs.max) TSI ENE CR 5.2.1.1 TSI ENE CR 5.2.1.4+E38 EN50199:2009 fig1 EN50199:2009 (5.10.4) +add. NTR: TBD	TSI ENE CR 4.2.13.1 (5.00-5.75m nom., 6.50m abs.max) TSI ENE CR 5.2.1.1 TSI ENE CR 5.2.1.4+E38	EN50199:2009 fig1 EN50199:2009 (5.10.4)		
04.03	OHLE gradient	permitted variation of height	TSI ENE CR 4.2.13.2 EN50199:2009 (5.10.3) TSI CR ENE 4.2.16 +add. NTR: TBD	TSI ENE CR 4.2.13.2	EN50199:2009 (5.10.3) TSI CR ENE 4.2.16		
04.04	OHLE lateral deviation	max permitted lateral deviation from track centre line (under cross wind, curves, track tolerances, pantograph movement, etc.)	TSI ENE CR 4.2.13.3+Annex E +add. NTR: TBD	TSI ENE CR 4.2.13.3+Annex E			
04.05	OHCL gauge	contact line gauge, Pantograph gauge and air isolation distance element within INF gauge	TSI ENE CR 4.2.14+Annex E TSI CR L&C 4.2.8.2.9.2 EN50119:2009 EN 15273 series +add. NTR: TBD	TSI ENE CR 4.2.14+Annex E	TSI CR L&C 4.2.8.2.9.2	EN50119:2009 EN 15273 series	
04.06	current collection	mean contact force	TSI ENE CR 4.2.15 TSI ENE CR 5.2.1.2 EN50367:2006 (7.1) +add. NTR: TBD	TSI ENE CR 4.2.15 TSI ENE CR 5.2.1.2	EN50367:2006 (7.1)		
04.07	current collection	dynamic behaviour and quality of current collection	TSI ENE CR 4.2.16 TSI ENE CR 5.2.1.3 TSI ENE CR 6.1.4.1 TSI ENE CR 6.2.4.5 EN50317:2002 EN50318:2002 EN50119:2009 (5.10.2, Tab.4, 5.2.5.2) EN50119:2009 +add. NTR: TBD	TSI ENE CR 4.2.16 TSI ENE CR 5.2.1.3 TSI ENE CR 6.1.4.1 TSI ENE CR 6.2.4.5	EN50317:2002 EN50318:2002 EN50119:2009 (5.10.2, Tab.4, 5.2.5.2)	EN50119:2009	
04.08	current collection	pantograph spacing (min. spacing between adjacent raised panth.)	TSI ENE CR 4.2.17 TSI ENE CR 5.2.1.5+E38 +add. NTR: TBD	TSI ENE CR 4.2.17 TSI ENE CR 5.2.1.5+E38			

04.09	current collection	max. no of permitted pantographs per train	TSI ENE CR 4.2.17(min: 2) +add. NTR: TBD	TSI ENE CR 4.2.17(min: 2)			
04.10	contact wire	contact wire material, crossection, permitted pantograph contact strip material (AC/DC)	TSI ENE CR 4.2.18 EN50149:2001 (4.1+4.2+4.5+4.7+excl.ta b.1) TSI CR L&C 4.2.8.2.9.4.2 +add. NTR: TBD	TSI ENE CR 4.2.18	EN50149:2001 (4.1+4.2+4.5+4. 7+excl.tab.1) TSI CR L&C 4.2.8.2.9.4.2		
04.11	feeder lines	feeder, negative feeder, primary feeders paralel to the railway, material, crossection, etc.	+add. NTR: TBD				
04.12	line crossings	electric protection concept of line crossings (OHLE, national grid, telecoms, etc.)	+add. NTR: TBD				
04.13	level crossings	electric protection concept of level crossings (signage, goal frames, etc.)	+add. NTR: TBD				
04.14	switch gear for OHLS	local and remote switching (incl.SCADA, etc.)	+add. NTR: TBD				
04.15	Mechanical properties of OCL	Mast systems, cantilevers, OCL support systems (standardised solutions, specific solutions, foundations/fixing to structures, drainage, etc.)	Eurocode +add. NTR: TBD		Eurocode		
04.16	Mechanical properties of OCL	Outriggers and Catenary systems (incl. isolators, carrying wire, suspension wires, fittings, clamps, outrigger hinges, over-head rails, feeders, jumpers, etc.)	+add. NTR: TBD				
<b>05.00</b>	<b>Return Current System</b>						
05.01	return current conductor	return conductors, bonding, earthing, impedance bonding, material, mechanical protection, etc.	TSI ENE CR 4.7.4 EN50122-1:1997 (7+9.2+9.6) +add. NTR: TBD	TSI ENE CR 4.7.4	EN50122-1:1997 (7+9.2+9.6)		
<b>06.00</b>	<b>Phase and System Separations</b>						

06.01	Phase separations	Geometry and general design concept of phase separation sections	TSI ENE CR 4.2.19 EN50367:2006 Ann.A.1 EN50388:2005 (5.1) TSI CR ENE Ann.F +add. NTR: TBD	TSI ENE CR 4.2.19	EN50367:2006 Ann.A.1 EN50388:2005 (5.1) TSI CR ENE Ann.F		
06.02	Phase separations	switchgear of phase separation sections (to allow re-start of trains)	TSI ENE CR 4.2.19 EN50367:2006 Ann.A.1 EN50388:2005 (5.1) TSI CR ENE Ann.F safety requirements to be developed, using: EN50126-1 EN50128 EN50129 EN50159	TSI ENE CR 4.2.19	EN50367:2006 Ann.A.1 EN50388:2005 (5.1) TSI CR ENE Ann.F	safety requirements to be developed, using: EN50126-1 EN50128 EN50129 EN50159	
06.03	Phase separations	local and remote control/ status detection functions	TSI ENE CR 4.2.19 EN50367:2006 Ann.A.1 EN50388:2005 (5.1) TSI CR ENE Ann.F safety requirements to be developed, using: EN50126-1 EN50128 EN50129 EN50159	TSI ENE CR 4.2.19	EN50367:2006 Ann.A.1 EN50388:2005 (5.1) TSI CR ENE Ann.F	safety requirements to be developed, using: EN50126-1 EN50128 EN50129 EN50159	
06.04	System separations	Geometry and general design concept of system separation sections	TSI ENE CR 4.2.20.1 EN50122-2:1998 (6.1.1) +add. NTR: TBD	TSI ENE CR 4.2.20.1	EN50122-2:1998 (6.1.1)		
06.05	System separations	System separations for raised pantograph transition (incl. provisions against short circuiting in case of vehicle circuit breaker failure)	TSI ENE CR 4.2.20.2 EN50119:2009 (5.10.3) +add. NTR: TBD	TSI ENE CR 4.2.20.2	EN50119:2009 (5.10.3)		
06.06	System separations	System separations for lowered pantograph transition (incl. raised pantograph detection, short circuit detection, power supply switch off, etc.)	TSI ENE CR 4.2.20.3 +add. NTR: TBD	TSI ENE CR 4.2.20.3			

06.07	System separations	switchgear of phase separation sections (to allow re-start of trains)	TSI ENE CR 4.2.20 safety requirements to be developed, using: EN50126-1 EN50128 EN50129 EN50159 +add. NTR: TBD	TSI ENE CR 4.2.20		safety requirements to be developed, using: EN50126-1 EN50128 EN50129 EN50159	
06.08	System separations	local and remote control/ status detection functions	TSI ENE CR 4.2.20 safety requirements to be developed, using: EN50126-1 EN50128 EN50129 EN50159 +add. NTR: TBD	TSI ENE CR 4.2.20		safety requirements to be developed, using: EN50126-1 EN50128 EN50129 EN50159	
<b>07.00</b>	<b>Signage</b>						
07.01	Signage	OCL related signage	TSI OPE CR 4.2.2.8 +add. NTR: TBD	TSI OPE CR 4.2.2.8			
<b>08.00</b>	<b>Auxilliary equipment</b>						
08.01	Auxilliary equipment	general information on aux. equipment powered by OHLE (e.g. turnout heating, etc.)	+add. NTR: TBD				
<b>09.00</b>	<b>Consumption metering</b>						
09.01	On board electric metering	on-board electric energy consumption measuring equipment	TSI ENE CR 4.2.21 TSI CR L&C 4.2.8.2.8 UIC 930 +add. NTR: TBD	TSI ENE CR 4.2.21	TSI CR L&C 4.2.8.2.8	UIC 930	
09.02	Substation electric metering	substation electric energy consumption measuring equipment	+add. NTR: TBD				
<b>10.00</b>	<b>Data recording equipment</b>						

10.01	Data recording	specific requirements, type of equipment (normal) permitted normal and degraded operational conditions, positioning of associated equipment, information/signals/frequency to be recorded	TSI OPE 4.2.3.5.1 +add. NTR: TBD	TSI OPE 4.2.3.5.1			
10.02	Data recording	interface spec.: remote control, data transmission, power supplies, control/display/read-out systems, other equipment	TSI OPE 4.2.3.5.2 +add. NTR: TBD	TSI OPE 4.2.3.5.2			
<b>11.00</b>	<b>provisions for operation</b>						
11.01	provisions for operation	<p>operating rules/ new rules/ specific training requirements for normal operations + degraded operations + emergency operations relating to this ENE (network/route)</p> <p>To cover at least documentation relating to the safety critical tasks of:</p> <ul style="list-style-type: none"> <li>-train preparation,</li> <li>-train dispatch,</li> <li>-authorisation for train movement (e.g. signalman),</li> <li>-driving of train,</li> <li>-accompanying a train</li> </ul> <p>Changes to existing SMS or interfaces to other SMS</p>	<p>TSI ENE CR 4.4</p> <p>TSI OPE CR 2.1</p> <p>TSI OPE CR 2.2.1</p> <p>TSI OPE CR 4.2.1.1</p> <p>TSI OPE CR 4.2.1.3</p> <p>TSI OPE CR 4.2.1.4</p> <p>TSI OPE CR 4.2.1.5</p> <p>TSI OPE CR 4.2.3.6</p> <p>TSI OPE CR 4.2.3.7</p> <p>TSI OPE CR 4.6.1</p> <p>2008/57/EC(15)2</p> <p>2004/49/EC</p> <p>TSI OPE CR App (J.1+2.2+2.4+3)</p> <p>TSI OPE CR App B (D)</p> <p>TSI OPE CR App C3.4</p> <p>+add. NTR: TBD</p>	<p>TSI ENE CR 4.4</p> <p>TSI OPE CR 2.1</p> <p>TSI OPE CR 2.2.1</p> <p>TSI OPE CR 4.2.1.1</p> <p>TSI OPE CR 4.2.1.3</p> <p>TSI OPE CR 4.2.1.4</p> <p>TSI OPE CR 4.2.1.5</p> <p>TSI OPE CR 4.2.3.6</p> <p>TSI OPE CR 4.2.3.7</p> <p>TSI OPE CR 4.6.1</p> <p>2008/57/EC(15)2</p> <p>2004/49/EC</p>	<p>TSI OPE CR App (J.1+2.2+2.4+3)</p> <p>TSI OPE CR App B (D)</p> <p>TSI OPE CR App C3.4</p>		

11.02	provisions for operation	training and examination requirements relating to this ENE (analysis of training needs, training content, content of examinations)	TSI OPE CR 2.2.1 TSI OPE CR 4.6.1 TSI OPE CR 4.6.2 TSI OPE CR 4.6.3 TSI OPE CR 4.6.3.2 2008/57/EC(15)2 2004/49/EC TSI OPE CR App J.2.3+J.3 TSI OPE CR App L.2.2+L.3 +add. NTR: TBD	TSI OPE CR 2.2.1 TSI OPE CR 4.6.1 TSI OPE CR 4.6.2 TSI OPE CR 4.6.3 TSI OPE CR 4.6.3.2 2008/57/EC(15)2 2004/49/EC	TSI OPE CR App J.2.3+J.3 TSI OPE CR App L.2.2+L.3		
11.03	provisions for operation	Safety Assessment of comprehensiveness and suitability of operating rules/ specific training requirements for normal and degraded operations	TSI OPE CR 2.2.1 TSI OPE CR 4.6.3.2 2008/57/EC(15)2 2004/49/EC RSD+CSM 352/2009 +add. NTR: TBD	TSI OPE CR 2.2.1 TSI OPE CR 4.6.3.2 2008/57/EC(15)2 2004/49/EC	RSD+CSM 352/2009		
11.04	provisions for operation	INF specific IM network access requirements (Technical/ Operational) (incl. type of trains permitted, max. nominal current, etc.)	TSI OPE CR 4.1 TSI OPE CR 4.2.2.6.2 +add. NTR: TBD	TSI OPE CR 4.1 TSI OPE CR 4.2.2.6.2			
11.05	provisions for operation	ENE specific IM information for Drivers Rule Book - normal, degraded, emergency situations - safety assessment to ensure completeness and accuracy of information (incl. OCL signage, type of trains permitted, max. nominal current, etc.)	TSI OPE CR 4.2.1.2.1 +add. NTR: TBD	TSI OPE CR 4.2.1.2.1			
11.06	provisions for operation	ENE specific IM information for Route Book - normal, degraded, emergency situations - safety assessment to ensure completeness and accuracy of information	TSI OPE CR 4.2.1.2.2 +add. NTR: TBD	TSI OPE CR 4.2.1.2.2			
11.07	provisions for operation	ENE specific IM Route Book Real Time Information for drivers (incl. train current limitations, etc.)	TSI OPE CR 4.2.1.2.2.3 +add. NTR: TBD	TSI OPE CR 4.2.1.2.2.3			

11.08	provisions for operation	Earthing equipment and other devices for emergency use (type, capacity, track connector, handling, storage positions, etc.)	TSI CR ENE 4.4.2.3 +add. NTR: TBD	TSI CR ENE 4.4.2.3			
11.09	provisions for operation	Operational quality monitoring	TSI OPE CR 4.2.3.4.4+4.2.3.5.1 +add. NTR: TBD	TSI OPE CR 4.2.3.4.4+4.2.3.5. 1			
<b>12.00</b>	<b>Maintenance Requirements and Maintenance Plan</b>						
12.01	general requirements	All limits for ENE must be co-ordinated with other subsystem requirements.	TSI ENE CR 4.5+4.6+4.7 RSD+CSM 352/2009 +add. NTR: TBD	TSI ENE CR 4.5+4.6+4.7	RSD+CSM 352/2009		
12.02	provisions for maintenance	Occupational Health & Safety, specific training	+add. NTR: TBD				

12.03	Safety Critical Maintenance	Concept on scope, intervals, maintenance records, tools, training	2008/57/EC(15)2 2004/49/EC TSI OPS +add. NTR: TBD	2008/57/EC(15)2 2004/49/EC TSI OPS			
12.04	Traceability of Safety Critical Components, Configuration Management	Component identifiers (unique ID, type, version, origin)	2008/57/EC(15)2 2004/49/EC TSI OPS +add. NTR: TBD	2008/57/EC(15)2 2004/49/EC TSI OPS			
12.05	Traceability of SW Components	Software identifiers (unique ID, type, version, origin)	2008/57/EC(15)2 2004/49/EC TSI OPS +add. NTR: TBD	2008/57/EC(15)2 2004/49/EC TSI OPS			
<b>13.00</b>	<b>Provisions during construction work</b>						
13.01	during construction work	health and safety at worksite	+add. NTR: TBD				
13.02	during construction work	protection of passengers/ running rail traffic/ other parties during execution of work	+add. NTR: TBD				
13.03	during construction work	protection of environment	+add. NTR: TBD				
13.04	during construction work	structural evaluation of scaffolding or any non-permanent structural works or earthworks during construction	+add. NTR: TBD				
13.05	during construction work	specific operating rules update during pre-planned work (temporary modifications to route book) (informing the driver in real time)	TSI OPE CR 4.2.1.2.2.2 TSI OPE CR 4.2.1.2.2.3 +add. NTR: TBD	TSI OPE CR 4.2.1.2.2.2 TSI OPE CR 4.2.1.2.2.3			