DRAFT RSC-G-015-C Appendix 1
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"RST" referrs to: TSI RST CR 2011/291/EU (amended by 2012/88/EU, 2012/464/EU)
"PRM" referrs to: TSI PRM 2008/164/EU (amended by 2012/464/EU)
"SRT" referrs to: TSI SRT 2008/163/EU (amended by 2012/464/EU)
"NOI" referrs to: TSI NOI CR 2011/229/EU (amended by 2012/464/EU)
"OPE" referrs to: TSI OPE CR 2011/314/EU (amended by 2012/464/EU)

	Parameter	Parameter No. to 2009/965/EC	Parameter to 2009/965/EC	Parameter Explanation to 2009/965/EC	Explanation	National Technical Rules IRL	TSIs and other EU legislation	Mandatory Standards	Voluntary Standards EU	National Technical Rules 1	National Technical Rules 2
1.0	General Information	1.0	General documentation	General documentation (including description of new, renewed or upgraded vehicle and its intended use, design, repair, operation and maintenance information, technical file, etc.)	Heading only, no rule required to be notified						
1.1	General description of Project/ Product(s)/ Interfaces	1.1	General documentation	General documentation, technical description of the vehicle, its design and intended use for the kind of traffic (long-distance train, suburban vehicles, commuter services, etc.) inclusive of intended and max design speed, including general plans, diagrams and necessary data for registers, e.g. length of vehicle, axle arrangement, axle spacing, mass per unit, etc.	>type designation of RST (preferably NVR-type designation) >intended use (Intercity/ Commuter/ Suburban/ Freight/ OTM/ Heritage/ Industrial/ etc.) >signalling systems fitted >identification of compatibility to networks and route classes (network/ TSI class/ national class), >max design speed >general functional/ technical description of the vehicle type, general plans/ diagrams/ dimensions, length of vehicle, axle arrangement, axle spacing, mass concept, payload, interfaces, supply voltages, country packages, signalling systems, radio systems, fixed formations, multiple unit operation (with same type/ other types), push-pull operation, etc., >declaration on intended design life, >previous upgrading and renewals, technical file, documentation relating to 2008/57/EC, documentation relating to other regulations deriving from the treaty, etc.	RST: 4.1.2 4.1.3 4.1.4 4.8 6.2.6 6.2.7 6.2.8 4.2.3.2.1 4.2.12.2 EN 15663:2009 Multiple operation: The resulting train formation must in normal and degraded operating conditions comply with all relevant Parameters and the	RST: 4.1.2 4.1.3 4.1.4 4.8 6.2.6 6.2.7 6.2.8 4.2.3.2.1 4.2.12.2	EN 15663:2009			Multiple operation: The resulting train formation must in normal and degraded operating conditions comply with all relevant Parameters and the relevant NTRs.
1.2	APIS related information	1.1 + 1.4	General documentation + Track-side tests of the complete vehicle	General documentation, technical description of the vehicle, its design and intended use for the kind of traffic (long-distance train, suburban vehicles, commuter services, etc.) inclusive of intended and max design speed, including general plans, diagrams and necessary data for registers, e.g. length of vehicle, axle arrangement, axle spacing, mass per unit, etc.	>defininiton of project scope/ boundaries relating Subsystems and Parameters (general description and description in the context of any applicable TSI), >defininiton of project scope relating New Build/ Upgrade/ Renewal (refer to 2008/57/EC), >evidence of derrogations enjoyed under 2008/57/EC, >where applicable: evidence of previous APIS in other MS (2008/57/EC chapter V) + records showing the vehicle's maintenance history and technical modifications undertaken after the authorisation + technical file + in the case of vehicles equipped with data recorders, information on the data collection procedure, permitting read out and evaluation (2008/57/EC chapter V), >documentation relating to 2008/57/EC and other regulations deriving from the treaty (EC-Declaration(s), EC-Technical File, National Technical File(s), CSM-AB report(s), Declaration(s) of conformity to						
1.3	evidence on technical compatibility and safe integration	1.1	General documentation	General documentation, technical description of the vehicle, its design and intended use for the kind of traffic (long-distance train, suburban vehicles, commuter services, etc.) inclusive of intended and max design speed, including general plans, diagrams and necessary data for registers, e.g. length of vehicle, axle arrangement, axle spacing, mass per unit, etc.	>evidence on the technical compatibility of the subsystem(s) with the (railway) system into which they are being integrated, safe integration of these subsystems in accordance with Articles 4(3) and 6(3) of Directive 2004/49/EC (2008/57/EC Art15) >evidence on compliance, where applicable, with the relevant TSI provisions on operation and maintenance, repair, operation and maintenance information, >evidence on technical and operational characteristics that shows that the vehicle is compatible with the infrastructure(s) and fixed installations (e.g. platforms, depots, servicing facilities), including climate conditions, energy supply system, control-command and signalling system, track gauge and infrastructure gauges, line category, maximum permitted axle load and other constraints of the network (2008/57/EC chapter 5)						
1.4	Data sheet(s) containing ERATV, NVR information	1.1	General documentation	General documentation, technical description of the vehicle, its design and intended use for the kind of traffic (long-distance train, suburban vehicles, commuter services, etc.) inclusive of intended and max design speed, including general plans, diagrams and necessary data for registers, e.g. length of vehicle, axle arrangement, axle spacing, mass per unit, etc.	>register related information information according to applicable TSIs and to 2011/665/EU, 2011/107/EU	RST: 4.8 2011/665/EU	RST: 4.8	2011/665/EU			
1.5	absence and/or control of hazardous materials during design, operation, maintenance, de-commissioning.	1.1 + 8.7.5	General documentation + Ionisation detectors	General documentation, technical description of the vehicle, its design and intended use for the kind of traffic (long-distance train, suburban vehicles, commuter services, etc.) inclusive of intended and max design speed, including general plans, diagrams and necessary data for registers, e.g. length of vehicle, axle arrangement, axle spacing, mass per unit, etc.	>Manufacturer declaration on absense of Asbestos, PCB, radioactive material. >For other dangerous materials, polutants: Evidence on avoidance, reduction, containment and control during installation, operation, maintenance, de-commissioning.	REACH Manufacturers shall declare the absense of Asbestos, PCB, radioactive material. For other dangerous materials, polutants, evidence on avoidance, reduction, containment and control during installation, operation, maintenance, de-commissioning shall be provided..	REACH				Manufacturers shall declare the absense of Asbestos, PCB, radioactive material. For other dangerous materials, polutants, evidence on avoidance, reduction, containment and control during installation, operation, maintenance, de-commissioning shall be provided..
1.6	Mass Concept	2.1.2.1 + 2.1.2.2	Load conditions and weighted mass + Axle load and wheel load	For individual wheels/axles in accordance with load conditions and tolerances of 2.1.2.1	weight concept defining relevant vehicle masses (considering staff, tools and equipment, consumeables, wastewater, payload capability, tolerances, etc.) >Design mass under exceptional payload >Design mass under normal payload >Design mass in working order >Total vehicle mass (for each vehicle of a fixed formation) >Mass per axle (for each axle and all load conditions) >Mass per wheel(for each wheel) >Mass ratio l/r, different axles in same bogie >definition of national/ UIC/ TSI line category compatibility (based on axle loads in combination with axle spacing/ vehicle lenght and permitted design speeds)	RST: 4.2.2.10 4.2.3.2.1 4.2.3.2.2 4.2.12.2 6.2.2.2.1 6.2.2.2.3 OPE TSI 4.2.2.5 EN 14363:2005 4.5 EN50215 EN14363 EN15663 UIC700 EN 15528 Compatibility with Irish Network must	RST: 4.2.2.10 4.2.3.2.1 4.2.3.2.2 4.2.12.2 6.2.2.2.1 6.2.2.2.3	OPE TSI 4.2.2.5 EN 14363:2005 4.5	EN50215 EN14363 EN15663 UIC700	EN 15528	Compatibility with Irish Network must be demonstrated.
2	Additional requirements, relevant in combination with all parameters				Heading only, no rule required to be notified						
2.1	Environmental impact on RST - Altitude	6.1.1.1	Altitude		impact evaluation to include all functions and systems on board (incl. but not limited to HVAC driver/passengers, fuelsystems, engine air intake, cooling air intake, compressor air intake)	RST: 4.2.6.1.1 EN50125-1:1999	RST: 4.2.6.1.1	EN50125-1:1999			
2.2	Environmental impact on RST - Temperature	6.1.1.2	Temperature		impact evaluation to include all functions and systems on board (incl. but not limited to HVAC driver/passengers, fuelsystems, engine air intake, cooling air intake, compressor air intake)	RST: 4.2.6.1.2 EN50125-1:1999	RST: 4.2.6.1.2	EN50125-1:1999			
2.3	Environmental impact on RST - Humidity	6.1.1.3	Humidity	e.g. anti-condensation and anti-freezing measures	impact evaluation to include all functions and systems on board (incl. but not limited to HVAC driver/passengers, fuelsystems, engine air intake, cooling air intake, compressor air intake)	RST: 4.2.6.1.3 EN50125-1:1999	RST: 4.2.6.1.3	EN50125-1:1999			
2.4	Environmental impact on RST - Rain	6.1.1.4	Rain		impact evaluation to include all functions and systems on board (incl. but not limited to HVAC driver/passengers, fuelsystems, engine air intake, cooling air intake, compressor air intake)	RST: 4.2.6.1.4 EN50125-1:1999	RST: 4.2.6.1.4	EN50125-1:1999			

2.5	Environmental impact on RST - Snow, ice and hail	6.1.1.5	Snow, ice and hail	e.g. snow cleaning devices, snow plough, ice free heaters, etc	impact evaluation to include all functions and systems on board (incl. but not limited to HVAC driver/passengers, fuelsystems, engine air intake, cooling air intake, compressor air intake)	RST: 4.2.6.1.5 EN50125-1:1999	RST: 4.2.6.1.5	EN50125-1:1999			
2.6	Environmental impact on RST - Solar radiation	6.1.1.6	Solar radiation		impact evaluation to include all functions and systems on board (incl. but not limited to HVAC driver/passengers, fuelsystems, engine air intake, cooling air intake, compressor air intake)	RST: 4.2.6.1.6 EN50125-1:1999	RST: 4.2.6.1.6	EN50125-1:1999			
2.7	Environmental impact on RST - Resistance to Pollution	6.1.1.7	Chemical and particulate matter	Impact upon vehicle equipment and functions due to chemicals and small airborne objects (e.g. ballast)	impact evaluation to include all functions and systems on board (incl. but not limited to HVAC driver/passengers, fuelsystems, engine air intake, cooling air intake, compressor air intake)	RST: 4.2.6.1.7 EN60721-3-5:1997	RST: 4.2.6.1.7	EN60721-3-5:1997			
2.8	Crosswind effects	6.1.2.1	Crosswind effects	Impact upon vehicle equipment and functions due to crosswinds	impact evaluation to include all functions and systems on board (incl. but not limited to running dynamics)	RST: 4.2.6.2.5 Requirements for operation under crosswiond shall be established based on Risk Management to CSM 352/2009, EN 50126, EN 50128, EN 50129.	RST: 4.2.6.2.5				Requirements for operation under crosswiond shall be established based on Risk Management to CSM 352/2009, EN 50126, EN 50128, EN 50129.
3.0	Structure	2.0 + 2.1	Structure and mechanical parts + Vehicle structure	Mechanical integrity and interface between vehicles (including draw and buffer gear, gangways, strength of vehicle structure and fittings (e.g. seats), loading capability, passive safety (incl. interior and exterior crashworthiness).	Heading only, no rule required to be notified						
3.1	Structural integrity of Bodyshell, Frame	2.1.1 + 2.1.4 + 2.1.5 + 3.3.7	Strength and integrety + Lifting and jacking + Fixing of devices to carbody structure + Rail guard	This parameter covers, for example, requirements of the mechanical strength of car body, under-frame, suspension systems, couplings, track sweeper and snow plough. Mechanical strength of separate items of this list such as bogie/running gear, axle box, axle, wheel, and pantograph will be defined separately + "protection of wheels from obstacles on the rails"	evidence on appropriate design and validation of: >car body structure >(under)frame, running gear mounting/ suspension, bogie mounting >access and egress systems/ lifts >track sweeper/ life gard/ obstacle deflector/ snow plough >lifting and jacking arrangements, bogie/ axle restraints >fitting of interiour and exteriour fittings (mounting of bogies, equipment components, windows, seats, etc.) >ferry-hooks >mounting of other relevant equipment >provisions secondary restaints for parts which may fall on track and cause derailment (e.g. brake rigging, drive shafts) >locking of movable parts which could infringe gauge (e.g. hatches, flaps, doors) >support, containment, restraint, protection of cargo/ moveable vehicle parts (including doors, hatches, tanks, floors, etc.), provisions for loading/unloading (incl. floors to support forklifts, handles/ levers, stands, ladders for staff)	RST: 4.2.2.1 4.2.2.4 4.2.2.5 4.2.2.6 4.2.2.7 4.2.2.8 4.2.2.10 4.2.3.7 4.2.6.1.5 4.2.6.2.3 Annex B OTM: Annex C.1+C.2 EN 12663-1:2010 (6.3.2+6.3.3+6.5.2+9.2.3.1) EN 12663:2000 UIC535-2 UIC530-2:2006	RST: 4.2.2.1 4.2.2.4 4.2.2.5 4.2.2.6 4.2.2.7 4.2.2.8 4.2.2.10 4.2.3.7 4.2.6.1.5 4.2.6.2.3 Annex B OTM: Annex C.1+C.2	EN 12663-1:2010 (6.3.2+6.3.3+6.5.2+9.2.3.1)		EN 12663:2000 UIC535-2 UIC530-2:2006	
3.2	Structural integrity and geometrical limits of vehicle connections/ gangways	2.2.7	Gangways		evidence on appropriate design and validation of: >Gangway/ step plates >vehicle connections >geometry (horizontal/ vertical/ rotational) >protection of passengers	RST: 4.2.2.1 4.2.2.3 4.2.5.8 4.2.2.7 of PRM TSI EN 12663 UIC 535-2	RST: 4.2.2.1 4.2.2.3 4.2.5.8	4.2.2.7 of PRM TSI		EN 12663 UIC 535-2	
3.3	Passive safety	2.3	Passive safety	Including e.g. obstacle deflector, limiting deceleration, survival space, structural integrity of occupied areas, reducing the risk of derailment and over-riding, limiting consequences of hitting a track obstruction, interior fittings for passive safety	evidence on appropriate design and validation of equipment limiting consequences of hitting a track obstruction/ of a collision: >obstacle deflector, >absorbers to limit deceleration, >survival space, structural integrity of occupied areas, >reduction measures for derailment and over-riding, >securing of interior fittings >track sweepers/ Life Guards >forward facing areas; protect	RST: 4.2.2.1 4.2.2.5 4.2.3.7 EN15227:2008 EN 15152 UIC 651 for forward facing surfaces.	RST: 4.2.2.1 4.2.2.5 4.2.3.7	EN15227:2008		EN 15152 UIC 651 for forward facing surfaces.	
3.4	Structural integrity of Bogies, Running gear	3.3.1	Bogies		evidence on appropriate design and validation of: >bogies and attached parts >running gear and attached parts >provisions of secondary restaints for parts which may fall on track and cause derailment (e.g. brake rigging, drive shafts)	RST: 4.2.3.5 EN 13749:2005 for bogies EN 14363 for other running gear	RST: 4.2.3.5	EN 13749:2005 for bogies EN 14363 for other running gear			
3.5	Structural integrity of Connections between various parts of the vehicle	2.1.7	Connections between various parts of the vehicle	E.g. connection/suspension between car body and bogie	e.g. connection/ suspension system/ traction bars/ torque links/ drive shafts/ tilting system between car body and bogie	RST: 4.2.2 EN 12663-1:2010	RST: 4.2.2	EN 12663-1:2010			
3.6	Wheelset and attached parts	3.3.2 + 3.3.3	Wheel set (axle + wheels)	Including variable gauge wheelsets, axle body, etc.	axle + wheels + brake disks + gearboxes >structural integrity >geometric tolerances >requirements for variable gauge wheelsets	RST: 4.2.3.5.2 5.3.2 7.3.2.8 EN13260:2009 3.2.1+3.2.2 EN13103:2009 4+5+6+7 EN13104:2009 4+5+6+7 EN13979-1:2003 7.2.1+7.2.2 EN13979-1:2003/A1:2009 6.2 (type A test)+7.3 EN 13103 EN 13104 EN 13260 EN 13261 EN 13262 EN 13979-1 CME-TMS-301 Requirements for variable gauge wheelsets shall be established based on Risk Management to CSM 352/2009, EN 50126, EN 50128, EN	RST: 4.2.3.5.2 5.3.2 7.3.2.8	EN13260:2009 3.2.1+3.2.2 EN13103:2009 4+5+6+7 EN13104:2009 4+5+6+7 EN13979-1:2003 7.2.1+7.2.2 EN13979-1:2003/A1:2009 6.2 (type A test)+7.3	EN 13103 EN 13104 EN 13260 EN 13261 EN 13262 EN 13979-1	CME-TMS-301	Requirements for variable gauge wheelsets shall be established based on Risk Management to CSM 352/2009, EN 50126, EN 50128, EN 50129.
3.7	Structural integrity of Bearingsystems (liners + bearings + grease + axlebox + speed probes)	3.3.5	Bearings on the wheelset			RST: 4.2.3.5.2 EN 12080 EN 12081 EN 12082	RST: 4.2.3.5.2		EN 12080 EN 12081 EN 12082		
3.8	Joining technologies, associated NDT	2.1.3	Joining technology		details on appropriate qualification, design and execution for: >welding, >bonding/glueing, >other joining methods, >associated NDT approaches (to prevent defects to decrease the mechanical characteristics of the structure)	RST: 4.2.2.4 EN15085series EN473 RSC-G-015 for joining other than welding	RST: 4.2.2.4		EN15085series EN473	RSC-G-015 for joining other than welding	

3.9	Windows/ Glasing	5.2	Windows	E.g. mechanical characteristics of windows and glass, requirements for emergencies, for mechanical characteristics of windscreens see 9.1.3.1	>mechanical characteristics of windows and other glasing (including mirrors) >requirements for emergency exits through windows	RST: 4.2.2.9 4.2.5.10 PRM SRT relevant national or international standard	RST: 4.2.2.9 4.2.5.10 PRM SRT	relevant national or international standard			
3.10	Structural Integrity of Pantograph	8.2.2.1	Pantograph overall design		evidence on appropriate design and validation of: >pantograph	EN 12663				EN 12663	
4.0	Coupling	2.2	Mechanical interfaces for end coupling or intermediate coupling		Heading only, no rule required to be notified						
4.1	Automatic End Coupling	2.2.1	Automatic coupling		>coupling system desription >mechanical interface push/pull (structural integrety) >electrical interface >pneumatic interface >elastic system >calculation of suspension and coupler hights >retraction and storage system >geometric interface (dimentions, gathering range, rotation, horizontal, vertical, longitudinal movements)	RST: 4.2.2.2.1 4.2.2.2.3 Annex I of the CR WAG TSI (to be adapted) UIC 541-1:Nov 2003 Annex B2 Figure 16b or 16c (to be adapted) UIC 648:Sep 2001(to be adapted) UIC 530-2	RST: 4.2.2.2.1 4.2.2.2.3	Annex I of the CR WAG TSI (to be adapted) UIC 541-1:Nov 2003 Annex B2 Figure 16b or 16c (to be adapted) UIC 648:Sep 2001(to be adapted)		UIC 530-2	
4.2	Rescue Adapter between Automatic End Coupling and Standard End Coupling	2.2.2	Characteristic of rescue coupling	for operational requirements to rescue trains see also 13.1 and 13.3		RST: 4.2.2.2.1 4.2.2.2.4 4.2.4.10 5.3.1 7.3.2.2 IRL EN15020 (to be adapted) UIC 648:Sep 2001(to be adapted) CME-TMS-303	RST: 4.2.2.2.1 4.2.2.2.4 4.2.4.10 5.3.1 7.3.2.2 IRL	EN15020 (to be adapted) UIC 648:Sep 2001(to be adapted)		CME-TMS-303	
4.3	Standard End Coupling - Screw Coupling and Buffer System, end cocks	a)2.2.3 b)2.2.4 c)2.2.5 d)2.2.6	a)Screw couplings b)Buffer, inner coupling and draw gear components c)Buffer marking	Including design, functionality and characteristics e.g. elasticity of buffers	coupling system: >screw coupling, drawhook, drawbar with elastic system >structural integrety, mounting, capacity, position, free space for mounting of rescue coupling >calculation of suspension and buffer hight >calculation of buffer face hight and width >position of end cocks >handrails under buffers >buffer marking	RST: 4.2.2.2.1 4.2.2.2.3 4.2.2.2.4 4.2.2.2.5 A.1+A2+A.3 7.3.2.2 IRL EN15551:2009 EN15566:2009 UIC541-1:11/2009 (Annex B2 figure 16b+c) UIC648:09/2001 Calculation of suspension/ buffer/ coupling hight to ERRI B12 DT135 annE	RST: 4.2.2.2.1 4.2.2.2.3 4.2.2.2.4 4.2.2.2.5 A.1+A2+A.3 7.3.2.2 IRL	EN15551:2009 EN15566:2009 UIC541-1:11/2009 (Annex B2 figure 16b+c) UIC648:09/2001	Calculation of suspension/ buffer/ coupling hight to ERRI B12 DT135 annE		
4.4	Intermediate Coupling System	2.2.4	Buffer, inner coupling and draw gear components	Including design, functionality and characteristics e.g. elasticity of buffers	>structure, mounting, capacity, position >calculation of suspension and coupler/ buffer hight >calculation of any buffer face hight and width >to include also also intermediate coupling systems >buffer marking >technical provisions for rescue	RST: 4.2.2.2.1 4.2.2.2.2 A.1 to A.3 of Annex A 6.5.3 and 6.7.5 of the EN12663-1:2010 Note: Electrification system in greater Dublin area is out of scope of IOD and any TSI.	RST: 4.2.2.2.1 4.2.2.2.2 A.1 to A.3 of Annex A	6.5.3 and 6.7.5 of the EN12663-1:2010			Note: Electrification system in greater Dublin area is out of scope of IOD and any TSI.
5.0	Running safety and dynamics	3.2	Vehicle dynamics	Rolling stock dynamic behaviour including equivalent conicity, instability criterion, tilting, safety against derailments on twisted track, track loading, etc.	Heading only, no rule required to be notified						
5.1	Running safety and dynamics	3.2.1	Running safety and dynamics	Including tolerance of vehicle to distortion of track, running on curved or twisted tracks, safe running on points and diamond crossings, etc.	>safety against derailment, dynamic >safety against derailment, quasistatic >safety against derailment, S-curves >for new/ maintenance limit wheel profiles and equivalent conicities >for permited combinations of push/pull/ tilting/ payloads/ distribution of wheelloads/ suspension conditions >for permitted in service limited of equivalent conicity >prevention of unacceptable build up of snow / ice in running gear/ suspension components	RST: 4.2.3.4 4.2.6.1.5 generally EN 14363 Twisted Track 4.1 of EN 14363:2005 Dynamic Req.EN 14363:2005 clause 5 Tilting Trains EN 15686:2010 test track data EN 13848-1:2003 / A1:2008 7.3.2.5 IRL CME-TMS-301 CME-TMS-302	RST: 4.2.3.4 4.2.6.1.5	generally EN 14363 Twisted Track 4.1 of EN 14363:2005 Dynamic Req.EN 14363:2005 clause 5 Tilting Trains EN 15686:2010 test track data EN 13848-1:2003 / A1:2008	7.3.2.5 IRL	CME-TMS-301 CME-TMS-302	
5.2	Running safety and dynamics	3.2.2	Equivalent conicity, wheel profile and limits		>Equivalent conicity, wheel profile and new and in service limits to be established	RST: 4.2.3.4.3 EN15302:2008	RST: 4.2.3.4.3	EN15302:2008 EN13715:2006	7.3.2.5 IRL	EN 14363 EN 14033 for OTMs	
5.3	Running safety and dynamics	3.2.3	Track loading compatibility parameters	E. g. dynamic wheel force, wheel forces exerted by a wheel set on the track (quasi static wheel force, maximum total dynamic lateral force, quasi static guiding force)		RST: 4.2.3.2.1 7.3.2.5 IRL	RST: 4.2.3.2.1		7.3.2.5 IRL		
5.4	Running safety and dynamics	3.2.4	Vertical acceleration	e.g. dynamic effects transmitted to bridge decks including resonance in bridges		UIC 702, load model 71				UIC 702, load model 71	
6.0	Safety Integrity and Availability of Train Control Functions	7.0	External warning, marking functions and software integrity requirements	External warnings, marking functions and integrity of software, e.g. safety-related functions with impact on the train behaviour including train bus	Heading only, no rule required to be notified						
6.1	Active control of Running Dynamics	7.1	Integrity of software employed for safety-related functions	e.g. Integrity of software of train bus		RST: 4.2.1.3 4.2.3.4.2 4.2.9.3.3 4.2.9.3.4 CSM 352/2009 EN50126 EN50128 EN50129 EN50159	RST: 4.2.1.3 4.2.3.4.2 4.2.9.3.3 4.2.9.3.4 CSM 352/2009		EN50126 EN50128 EN50129 EN50159		

6.2	Passenger Alarm	7.1	Integrity of software employed for safety-related functions	e.g. Integrity of software of train bus	>Indication of passenger alarm to driver >indication of alarm operation to passenger	RST: 4.2.1.3 4.2.5.3 4.2.9.3.3 4.2.9.3.4 CSM 352/2009 EN50126 EN50128 EN50129 EN50159	RST: 4.2.1.3 4.2.5.3 4.2.9.3.3 4.2.9.3.4 CSM 352/2009		EN50126 EN50128 EN50129 EN50159		
6.3	Control and Status indication of External Doors	7.1	Integrity of software employed for safety-related functions	e.g. Integrity of software of train bus	>status of doors, moveable steps and locks >control of doors, movable steps and locks (remote/ local) >Emergency Door opening Control >integrety of speed interlocking >Traction interlocking with open door >loccking doors out of cervice	RST: 4.2.1.3 4.2.5.6 4.2.9.3.3 4.2.9.3.4 4.2.10.4 CSM 352/2009 EN50126 EN50128 EN50129 EN50159	RST: 4.2.1.3 4.2.5.6 4.2.9.3.3 4.2.9.3.4 4.2.10.4 CSM 352/2009		EN50126 EN50128 EN50129 EN50159		
6.4	Power supply Voltage indication to driver	7.1	Integrity of software employed for safety-related functions	e.g. Integrity of software of train bus		RST: 4.2.1.3 EN50126 EN50128 EN50129 EN50159	RST: 4.2.1.3		EN50126 EN50128 EN50129 EN50159		
6.5	Electric Power Supply protection	7.1	Integrity of software employed for safety-related functions	e.g. Integrity of software of train bus	>control of circuit braker status >indication of circuit braker status >protection against over current (max I and max delta I/delta t) >protection against over voltage (max V and max delta V/delta t) >protection against undervoltage (min V) >protection against surges/ lightning >control of earthing for high voltage equipment	RST: 4.2.1.3 4.2.8.2.10 4.2.9.3.3 4.2.9.3.4 CSM 352/2009 EN50126 EN50128 EN50129 EN50159	RST: 4.2.1.3 4.2.8.2.10 4.2.9.3.3 4.2.9.3.4 CSM 352/2009		EN50126 EN50128 EN50129 EN50159		
6.6	Isolation of Batteries	7.1	Integrity of software employed for safety-related functions	e.g. Integrity of software of train bus	>isolation of both poles at floating systems	RST: 4.2.1.3 EN50126 EN50128 EN50129 EN50159	RST: 4.2.1.3		EN50126 EN50128 EN50129 EN50159		
6.7	Pantograph lowering	7.1	Integrity of software employed for safety-related functions	e.g. Integrity of software of train bus	>control of pantograph status >indication of pantograph status to driver	RST: 4.2.8.2.9.10 4.2.9.3.3 4.2.9.3.4 EN50126 EN50128 EN50129 EN50159	RST: 4.2.8.2.9.10 4.2.9.3.3 4.2.9.3.4		EN50126 EN50128 EN50129 EN50159		
6.8	Driver Vigilance Control	7.1	Integrity of software employed for safety-related functions	e.g. Integrity of software of train bus		RST: 4.2.1.3 4.2.9.3.1 4.2.9.3.3 4.2.9.3.4 CSM 352/2009 EN50126 EN50128 EN50129 EN50159	RST: 4.2.1.3 4.2.9.3.1 4.2.9.3.3 4.2.9.3.4 CSM 352/2009		EN50126 EN50128 EN50129 EN50159		
6.9	Lamp Controls	7.1	Integrity of software employed for safety-related functions	e.g. Integrity of software of train bus	>control of all lights >preventing inadvertent illumination of rear lights in the middle of a train consist or after unintentional train separation >preventing inadvertent illumination of rear light at front of train >evaluation of effects of inadvertent illumination of head lights at the rear of a train >evaluation of effects of inadvertent loss of headlights >control of shunting movement signal	RST: 4.2.7.1.4 4.2.9.3.3 4.2.9.3.4	RST: 4.2.7.1.4 4.2.9.3.3 4.2.9.3.4				
6.10	warning horn	7.2.3.4	Warning horns, control			RST: 4.2.7.2.4	RST: 4.2.7.2.4				
6.11	Driver's speed indication	7.1	Integrity of software employed for safety-related functions	e.g. Integrity of software of train bus	>generation and distribution of speed signal >indication of speed to driver	RST: 4.2.9.3.2 4.2.9.3.3 4.2.9.3.4 TSI CCS CR	RST: 4.2.9.3.2 4.2.9.3.3 4.2.9.3.4	TSI CCS CR			
6.12	Fire Barriers	7.1	Integrity of software employed for safety-related functions	e.g. Integrity of software of train bus	>control of moveable fire barriers	RST: 4.2.1.3 4.2.10.5 4.2.9.3.3 4.2.9.3.4 CSM 352/2009 EN50126 EN50128 EN50129 EN50159	RST: 4.2.1.3 4.2.10.5 4.2.9.3.3 4.2.9.3.4 CSM 352/2009		EN50126 EN50128 EN50129 EN50159		
6.13	Onboard Hot Axle Box detection	7.1	Integrity of software employed for safety-related functions	e.g. Integrity of software of train bus	>determination of intervention limits >detection fnction >alarm function	RST: 4.2.1.3 4.2.9.3.3 4.2.9.3.4 CSM 352/2009 EN50126 EN50128 EN50129 EN50159	RST: 4.2.1.3 4.2.9.3.3 4.2.9.3.4 CSM 352/2009		EN50126 EN50128 EN50129 EN50159		

6.14	Train Radio	7.1	Integrity of software employed for safety-related functions	e.g. Integrity of software of train bus		RST: 4.2.5.2 4.2.9.3.3 4.2.9.3.4 EN50126 EN50128 EN50129 EN50159	RST: 4.2.5.2 4.2.9.3.3 4.2.9.3.4		EN50126 EN50128 EN50129 EN50159		
6.15	Public Address System	7.1	Integrity of software employed for safety-related functions	e.g. Integrity of software of train bus		RST: 4.2.5.2 4.2.9.3.3 4.2.9.3.4 EN50126 EN50128 EN50129 EN50159	RST: 4.2.5.2 4.2.9.3.3 4.2.9.3.4		EN50126 EN50128 EN50129 EN50159		
6.16	Emergency Ventilation	7.1	Integrity of software employed for safety-related functions	e.g. Integrity of software of train bus		RST: 4.2.5.9 4.2.9.3.3 4.2.9.3.4 6.2.2.2.9 EN50126 EN50128 EN50129 EN50159	RST: 4.2.5.9 4.2.9.3.3 4.2.9.3.4 6.2.2.2.9		EN50126 EN50128 EN50129 EN50159		
6.17	Braking/ Traction Interlocking	4.2.1	Traction/braking interlocking	E.g. traction inhibition		RST: 4.2.1.3 4.2.4.2 4.2.4.7 4.2.4.8.1 4.2.4.2.2 6.2.2.2.4 CSM 352/2009 EN50126 EN50128 EN50129 EN50159	RST: 4.2.1.3 4.2.4.2 4.2.4.7 4.2.4.8.1 4.2.4.2.2 6.2.2.2.4 CSM 352/2009		EN50126 EN50128 EN50129 EN50159		
6.18	Emergency Brake Functions	4.4.1	Emergency braking command		including >automatic EB upon train seperation in all permitted normal and degraged modes of operation (this includes train system setup in case of coupling) >connection of EB to passenger EB-request >EB suppression systems >EB caused by signalling system, on board hot box detection or DVD >EB caused by staff EB-request (last notch of brake handle, add. EB brake actuators for staff) >redundancy (e.g. indirect/ direct braking)	RST: 4.2.1.3 4.2.4.2 4.2.4.4.1 4.2.4.7 4.2.4.8.1 4.2.4.2.2 6.2.2.2.4 CSM 352/2009 EN50126 EN50128 EN50129 EN50159	RST: 4.2.1.3 4.2.4.2 4.2.4.4.1 4.2.4.7 4.2.4.8.1 4.2.4.2.2 6.2.2.2.4 CSM 352/2009		EN50126 EN50128 EN50129 EN50159		
6.19	Service Brake Functions	4.4.2	Service braking command			RST: 4.2.4.4.2 EN50126 EN50128 EN50129 EN50159 UIC 540 EN 15624 EN 15625 UIC 541-1 UIC 545	RST: 4.2.4.4.2		EN50126 EN50128 EN50129 EN50159	UIC 540 EN 15624 EN 15625 UIC 541-1 UIC 545	
6.20	Direct Brake Functions	4.4.3	Direct braking command		if DB is performing EB functions, including e.g.: >automatic EB upon train seperation in all permitted normal and degraged modes of operation (this includes train system setup in case of coupling) >connection of EB to passenger EB-request >EB suppression systems >EB caused by signalling system or DVD >EB caused by driver EB-request (last notch of brake handle and add. EB brake actuators for staff)	RST: 4.2.1.3 4.2.4.2 4.2.4.4.3 4.2.4.7 4.2.4.8.1 4.2.4.2.2 6.2.2.2.4 CSM 352/2009 EN50126 EN50128 EN50129 EN50159	RST: 4.2.1.3 4.2.4.2 4.2.4.4.3 4.2.4.7 4.2.4.8.1 4.2.4.2.2 6.2.2.2.4 CSM 352/2009		EN50126 EN50128 EN50129 EN50159		
6.21	Safety Integrity of Dynamic Brake Functions	4.4.4	Dynamic braking command			RST: 4.2.4.4.4 EN50126 EN50128 EN50129 EN50159 UIC 540 EN 15624 EN 15625	RST: 4.2.4.4.4		EN50126 EN50128 EN50129 EN50159	UIC 540 EN 15624 EN 15625	
6.22	Safety Integrity of Parking Brake Functions	4.4.5	Parking braking command			RST: 4.2.1.3 4.2.4.2 4.2.4.4.5 4.2.4.5.5 4.2.4.2.2 6.2.2.2.4 CSM 352/2009 EN50126 EN50128 EN50129 EN50159	RST: 4.2.1.3 4.2.4.2 4.2.4.4.5 4.2.4.5.5 4.2.4.2.2 6.2.2.2.4 CSM 352/2009		EN50126 EN50128 EN50129 EN50159		
6.23	Safety Integrity of WSP system Functions	4.6.2	Wheel slide protection system			RST: 4.2.4.7 5.3.3 EN50126 EN50128 EN50129 EN50159 EN 15595	RST: 4.2.4.7 5.3.3		EN50126 EN50128 EN50129 EN50159	EN 15595	

6.24	brake status testing, detection and fault indication functions	4.8	Brake state and fault indication		safety integrety of: >testing of brake fuctions (for state of operation/ continuity) >detection of status >indication of status applied/ released/ brake test passed/ failed for all relevant types of brakes	RST: 4.2.1.3 4.2.4.9 CSM 352/2009 EN50126 EN50128 EN50129 EN50159	RST: 4.2.1.3 4.2.4.9 CSM 352/2009		EN50126 EN50128 EN50129 EN50159		
6.25	Recording device	9.6	Recording device	for the purpose of monitoring the behaviour of driver and train		RST: 4.2.9.6	RST: 4.2.9.6				
6.27	Remote control functions	9.8	Remote control function			RST: 4.2.9.3.6 risk assessment "recognised standards"	RST: 4.2.9.3.6	risk assessment "recognised standards"			
6.28	Other Safety Related Functions	9.1.1.5	Other facilities to control operation of the train		>including all functions employing Elelectric/ Electronic/ Programmable Devices	RST: 4.2.1.3 4.2.9.3.3 4.2.9.3.4 CSM 352/2009 EN50126 EN50128 EN50129 EN50159	RST: 4.2.1.3 4.2.9.3.3 4.2.9.3.4 CSM 352/2009		EN50126 EN50128 EN50129 EN50159		
7.0	Braking	4	Braking	Braking-related items (including wheel-slide protection, braking control and braking performance in service, emergency and parking modes)	Heading only, no rule required to be notified						
7.1	Description of braking systems, braking functions	4.1	Functional requirements for braking at train level	e.g. automaticity, continuity, inexhaustibility	overall functional description of all braking functions, incl. automaticity, continuity, inexhaustibility, redundancy, blending, roll back prevention, interface with signalling system, braking distances, etc.	RST: 4.2.4.1 4.2.4.2 4.2.4.3 4.2.4.4 EN14198:2004 5.4	RST: 4.2.4.1 4.2.4.2 4.2.4.3 4.2.4.4	EN14198:2004 5.4			
7.2	Brake system architecture	4.3	Brake system, Recognised architecture and associated standards	Reference to existing solutions e.g. UIC	>including blending, multiple unit/ remote operation, WSP system in all permitted normal and degraged modes of operation >evaluation of effects of snow and ice (build up, ice inside brake system) on brake performence, design provisions, permitted operating conditions >prevention of compounding effects (e.g. PB+EB)	RST: 4.2.4.1 4.2.4.2 4.2.4.3 4.2.4.4 4.2.4.5 4.2.6.1.5 5.3.3 6.1.2.2.1 EN50126 EN50128 EN50129 EN50159 EN15595:2009 CSM 352/20009 UIC 541-1 UIC 545 EN 14198 EN 14601 UIC 541-2	RST: 4.2.4.1 4.2.4.2 4.2.4.3 4.2.4.4 4.2.4.5 4.2.6.1.5 5.3.3 6.1.2.2.1	EN50126 EN50128 EN50129 EN50159 EN15595:2009 CSM 352/20009		UIC 541-1 UIC 545 EN 14198 EN 14601 UIC 541-2	
7.3	Limit of wheel rail adhesion	3.4 + 4.6.1	Limit of maximum longitudinal positive and negative acceleration + Limit of wheel rail adhesion profile			RST: 4.2.4.5.1 4.2.4.6 4.2.4.6.1 EN15595:2009 4+5+6+6.2.3 UIC544-1 I.4	RST: 4.2.4.5.1 4.2.4.6 4.2.4.6.1	EN15595:2009 4+5+6+6.2.3 UIC544-1 I.4			
7.4	Emergency braking performance	4.5.1	Emergency braking		>indirect and direct brake >performance in critical weather conditions (e.g. wet) >material performance of pad/ block/ wheel/ disc	RST: 4.2.4.5 4.2.4.6 6.2.2.2.5 EN14531-1:2005 EN14531-6:2009 I-SIG-2145	RST: 4.2.4.5 4.2.4.6 6.2.2.2.5	EN14531- 1:2005 EN14531- 6:2009		I-SIG-2145	
7.5	Service braking performance	4.5.2	Service braking		>indirect and direct brake >performance in critical weather conditions (e.g. wet) >material performance of pad/ block/ wheel/ disc	RST: 4.2.4.5 4.2.4.6 EN14531-1:2005 EN14531-6:2009	RST: 4.2.4.5 4.2.4.6	EN14531- 1:2005 EN14531- 6:2009			
7.6	thermal capacity	4.5.3	Calculations related to thermal capacity		>blocks, pads, wheels, discs >rheostats >retarders >to cover directly repeated EB >to state all permitted degraded operations (isolations and service patterns)	RST: 4.2.4.5 4.2.4.6 EN14531-1:2005 EN14531-6:2009	RST: 4.2.4.5 4.2.4.6	EN14531- 1:2005 EN14531- 6:2009			
7.7	Parking brake performance	4.5.4 + 4.7.5	Parking brake + Parking brake			RST: 4.2.4.5 4.2.4.6 EN14531-1:2005 EN14531-6:2009	RST: 4.2.4.5 4.2.4.6	EN14531- 1:2005 EN14531- 6:2009			
7.8	Wheel slide protection system	4.6.2	Wheel slide protection system		>limit to extention of braking distance above dry conditions	RST: 4.2.4.6.2 6.2.2.2.7 EN15595:2009 4+5+6+6.2.3	RST: 4.2.4.6.2 6.2.2.2.7	EN15595:2009 4+5+6+6.2.3			
7.9	Brake blocks	4.7.1.1	Brake blocks		>material properties >performance requirements	RST: 4.2.3.3.1.1 UIC V-BKS ERA/TD/2009-02/INT EN 14535-1 prEN 14535-2 prEN 15328 UIC 541-4 UIC 541-1	RST: 4.2.3.3.1.1		UIC V-BKS ERA/TD/2009- 02/INT	EN 14535-1 prEN 14535-2 prEN 15328 UIC 541-4 UIC 541-1	

7.10	Brake discs	4.7.1.2	Brake discs			EN 14535-1 prEN 14535-2 prEN 15328 UIC 541-4 UIC 541-1				EN 14535-1 prEN 14535-2 prEN 15328 UIC 541-4 UIC 541-1	
7.11	Brake pads	4.7.1.3	Brake pads			EN 14535-1 prEN 14535-2 prEN 15328 UIC 541-4 UIC 541-1				EN 14535-1 prEN 14535-2 prEN 15328 UIC 541-4 UIC 541-1	
7.12	Dynamic Brake performance	4.7.2	Dynamic brake linked to traction			RST: 4.2.4.7 UIC 544-2	RST: 4.2.4.7			UIC 544-2	
7.13	Magnetic track brake	4.7.3	Magnetic track brake		>design >performance	RST: 4.2.4.8.2	RST: 4.2.4.8.2				
7.14	Eddy current track brake	4.7.4	Eddy current track brake		>design >performance	RST: 4.2.4.8.3	RST: 4.2.4.8.3				
7.15	Brake requirements for rescue purposes	4.9	Brake requirements for rescue purposes		>permitted degraded operations	RST: 4.2.4.10 EN 14601 UIC 541-2	RST: 4.2.4.10			EN 14601 UIC 541-2	
8.0	Access and Egress	5.1	Access	Functional and technical specifications e.g. for people with reduced mobility	Heading only, no rule required to be notified						
8.1	Exterior doors	5.1.1	Exterior doors		>Passenger access/ egress >Staff access/ egress	RST: 4.2.2.8 4.2.5.6 4.2.5.7 PRM	RST: 4.2.2.8 4.2.5.6 4.2.5.7 PRM				
8.2	Emergency Exits	10.2.1	Passenger emergency exits		>positioning, distances, size, operation	RST: 4.2.10.4 PRM	RST: 4.2.10.4 PRM				
8.3	Interior doors	5.1.2	Interior doors		>including gangway doors	RST: 4.2.5.8 PRM	RST: 4.2.5.8 PRM				
8.4	Clearways	5.1.3	Clearways		>including gangways	PRM	PRM				
8.5	Steps/ Ramps	5.1.4 + 5.1.5	Steps and lighting + Floor height changes		>Exteriour steps, ramps >Interiour steps, ramps	PRM	PRM				
8.6	Handrails/ -holds	5.1.6	Handrails		>all areas, e.g. entrance/ vestibule, saloon/ compartments, toilets	PRM	PRM				
8.7	Boarding aids	5.1.7	Boarding aids		>on board bording aids >compatibility of boarding aid and RST >capacity/ dimensions/ structural integrity/ protection agianst slips, trips amd falls >recovery concept >safe on board storage	PRM	PRM				
9.0	Passenger facilities				Heading only, no rule required to be notified						
9.1	lighting	5.1.4	Steps and lighting		>emergency lighting >stair/step lighting >other lighting	PRM	PRM				
9.2	Toilets	5.3	Toilets	See 6.2.1.1 for toilet emissions		RST: 4.2.5.1 6.2.2.2.7 PRM 98/83/EC for drinking water 2006/7/EC for waste water 2006/11/EC for waste water EN 12221-1 EN 12221-2	RST: 4.2.5.1 6.2.2.2.7 PRM 98/83/EC for drinking water 2006/7/EC for waste water 2006/11/EC for waste water			EN 12221-1 EN 12221-2	
9.3	Public Address System	5.4.1	Public address system			RST: 4.2.5.2	RST: 4.2.5.2				
9.4	Passenger Communication Device	5.4.1	Public address system			RST: 4.2.5.5	RST: 4.2.5.5				

9.5	Signs and information	5.4.2	Signs and information	Including safety instructions to passengers and emergency markings for passengers		RST: 4.2.5.4 Annex B for Lifting Points PRM EVN-Requiremeents in TSI OPE	RST: 4.2.5.4 Annex B for Lifting Points PRM EVN-Requiremeents in TSI OPE				
9.6	Seats and specific PRM arrangements	5.5	Seats and specific PRM arrangements	except access (covered by 5.1)	>seats >priority seats >wheelchair spaces	PRM	PRM				
9.7	Specific passenger-related facilities	5.6	Specific passenger-related facilities			PRM	PRM				
9.8	Lift systems	5.6.1	Lift systems	conformity to CE (EC) or national regulation if any	>capacity/ dimensions/ structural integrity/ protection agianst slips, trips amd falls >recovery concept	PRM Lifts directive	PRM Lifts directive				
9.9	Heating, ventilation and Air condition systems	5.6.2	Heating, ventilation and Air condition systems	e.g. internal air quality, requirement in case of fire (switch off)	including requirements for internal air quality	RST: 4.2.5.9 6.2.2.2.9	RST: 4.2.5.9 6.2.2.2.9				
9.10	Passenger alarm	10.2.3	Passenger alarm			RST: 4.2.10.1.3 SRT: 4.2.5.3	RST: 4.2.10.1.3 SRT: 4.2.5.3				
9.11	Emergency lighting	10.2.4	Emergency lighting			RST: 4.2.10.1.3 SRT: 4.2.5.9 EN13272	RST: 4.2.10.1.3 SRT: 4.2.5.9			EN13272	
9.12	Other Passenger Facilities	5.6.3	Other	e.g. beverage dispensing units		To be investigated	To be investigated				
10.0	Visual and audible vehicle identification and warning functions	7.2	Visual and audible vehicle identification and warning functions		Heading only, no rule required to be notified						
10.1	Vehicle marking/ livery	7.2.1	Vehicle marking		>contrast of doors >visibility of vehicle front from distance by contrast/ warning colour penal	PRM ISO 3864-2 UIC 545 UIC 640	PRM			ISO 3864-2 UIC 545 UIC 640	
10.2	Headlights	7.2.2.1	Headlights			RST: 4.2.7.1 4.2.7.1.1 5.3.4 6.1.2.2.2 EN15153-1:2007	RST: 4.2.7.1 4.2.7.1.1 5.3.4 6.1.2.2.2	EN15153-1:2007			
10.3	Marker lights	7.2.2.2	Marker lights			RST: 4.2.7.1 4.2.7.1.2 5.3.5 6.1.2.2.3 EN15153-1:2007	RST: 4.2.7.1 4.2.7.1.2 5.3.5 6.1.2.2.3	EN15153-1:2007			
10.4	Tail lights	7.2.2.3	Tail lights			RST: 4.2.7.1 4.2.7.1.3 5.3.6 6.1.2.2.4 EN15153-1:2007	RST: 4.2.7.1 4.2.7.1.3 5.3.6 6.1.2.2.4	EN15153-1:2007			
10.5	Lamp controls	7.2.2.4	Lamp controls			RST: 4.2.7.1.4	RST: 4.2.7.1.4				
10.6	Tail light brackets	7.2.4	Brackets	e.g. requirements for rear end signals: lamps, flags, etc.	tail light brackets (for Irish tail lights)	 CME-TMS-305				CME-TMS-305	
10.7	warning horn tones	7.2.3.1	Warning horn tones			RST: 4.2.7.2.1 5.3.7 6.1.2.2.5 EN 15153-2 EN ISO 7731 UIC 644	RST: 4.2.7.2.1 5.3.7 6.1.2.2.5			EN 15153-2 EN ISO 7731 UIC 644	
10.8	warning horn sound pressure levels	7.2.3.2 + 7.2.3.5	Warning horn sound pressure levels + Warning horns verification of sound pressure levels	Outside the cab - For internal sound level, see 9.2.1.2		RST: 4.2.7.2.2 5.3.7 6.1.2.2.5 EN 15153-2 EN ISO 7731 UIC 644	RST: 4.2.7.2.2 5.3.7 6.1.2.2.5			EN 15153-2 EN ISO 7731 UIC 644	

10.9	warning horn protection	7.2.3.3	Warning horns, protection			RST: 4.2.7.2.3 EN 15153-2 EN ISO 7731 UIC 644	RST: 4.2.7.2.3			EN 15153-2 EN ISO 7731 UIC 644	
11.0	Traction System	8.0	On-board power supply and control systems	On-board propulsion, power and control systems plus the interface of the vehicle to the power supply infrastructure and all aspects of EMC	Heading only, no rule required to be notified						
11.1	Traction performance	8.1.1 + 8.1.2 + 8.1.3	Residual acceleration at max speed + Residual traction capability in degraded mode + Traction wheel/rail adhesion requirements		>nominal traction performance (short time, permanent performence) >residual acceleration at max. speed >residual traction performance in degraded mode	RST: 4.2.8.1	RST: 4.2.8.1				
12.0	Electric Power Supply	8.0	On-board power supply and control systems	On-board propulsion, power and control systems plus the interface of the vehicle to the power supply infrastructure and all aspects of EMC	Heading only, no rule required to be notified						
12.1	Electric Power Supply	8.2.1.1 + 8.2.1.3	Power supply + Voltage and frequency of overhead contact line power supply		>nominal voltages/frequncies and tolerances >system design	RST: 4.2.8.2.1 4.2.8.2.2 EN 50388:2005	RST: 4.2.8.2.1 4.2.8.2.2			EN 50388:2005	
12.2	Impedance between pantograph and wheels	8.2.1.2	Impedance between pantograph and wheels			CME-TMS-301				CME-TMS-301	
12.3	Energy recuperation	8.2.1.4	Energy recuperation			RST: 4.2.8.2.3 EN 50388:2005	RST: 4.2.8.2.3	EN 50388:2005			
12.4	Maximum power and maximum current that is permissible to be drawn from the overhead contact line	8.2.1.5	Maximum power and maximum current that is permissible to be drawn from the overhead contact line	Incl. maximum current at standstill		RST: 4.2.8.2.4 4.2.8.2.5 6.2.2.2.13 EN 50388:2005	RST: 4.2.8.2.4 4.2.8.2.5 6.2.2.2.13	EN 50388:2005			
12.5	Power factor	8.2.1.6	Power factor			RST: 4.2.8.2.6 6.2.2.2.13 EN 50388:2005 TSI ENE CR Ann G	RST: 4.2.8.2.6 6.2.2.2.13	EN 50388:2005 TSI ENE CR Ann G			
12.6	Harmonics, overvoltages	8.2.1.7.1	Harmonic characteristics and related overvoltages on the overhead contact line			RST: 4.2.8.2.7 EN50388:2005	RST: 4.2.8.2.7	EN50388:2005			
12.7	Protection against effects of DC content in AC supply	8.2.1.7.2	Effects of DC content in AC supply			Risk Assessment					Risk Assessment
12.8	Main electrical circuit configuration	8.3.2	Main electrical circuit configuration								
12.9	High voltage components	8.3.3	High voltage components		>Main circuit braker >voltage measuring devices >surge arrestors >isolators	RST: 5.3.9 TSI ENE CR Ann K	RST: 5.3.9	TSI ENE CR Ann K			
12.10	Electrical protection	8.2.1.8 + 8.5	Electrical protection + Protection against electrical hazards	e.g. selectivity of onboard protections and substation protection system	>main circuit braker >isolation coordination >mechanical enclosure	RST: 4.2.8.4 4.2.8.2.10 EN150153:2002	RST: 4.2.8.4 4.2.8.2.10	EN150153:2002			
12.11	Energy consumption measurement	8.3.1	Energy consumption measurement			RST: 4.2.8.2.8 Annex D	RST: 4.2.8.2.8 Annex D				
12.12	Earthing	8.3.4	Earthing			RST: 4.2.8.2.10 EN 50153:2002	RST: 4.2.8.2.10			EN 50153:2002	
13.0	Pantograph	8.2.2	Pantograph functional and design parameters		Heading only, no rule required to be notified						
13.1	Pantograph overall design	8.2.2.1	Pantograph overall design			RST: 5.3.8 6.1.2.2.6 EN 50367:2006 EN 50119:2009 EN 50206-1:2010 EN 50318:2002 EN 50317:2002	RST: 5.3.8 6.1.2.2.6	EN 50367:2006 EN 50119:2009 EN 50206- 1:2010 EN 50318:2002 EN 50317:2002			
13.2	Pantograph head geometry, general case	8.2.2.2	Pantograph head geometry			RST: 4.2.8.2.9.2 EN 50367:2006	RST: 4.2.8.2.9.2	EN 50367:2006			

13.3	Pantograph head geometry, DART system	8.2.2.2	Pantograph head geometry			Requirements for DART system pantograph head shall be established based on Risk Management to CSM 352/2009, EN 50126, EN 50128, EN 50129. CME-TMS-306					Requirements for DART system pantograph head shall be established based on Risk Management to CSM 352/2009, EN 50126, EN 50128, EN 50129. CME-TMS-306
13.4	Pantograph static contact force	8.2.2.3	Pantograph static contact force			RST: 4.2.8.2.9.2 4.2.8.2.9.5	RST: 4.2.8.2.9.2 4.2.8.2.9.5				
13.5	Pantograph dynamic contact force	8.2.2.4	Pantograph contact force (including dynamic behaviour and aerodynamic effects)	Incl. quality of current collection		RST: 4.2.8.2.9.6 6.2.2.2.15 TSI ENE CR 4.2.16 EN 50317:2002	RST: 4.2.8.2.9.6 6.2.2.2.15 TSI ENE CR 4.2.16	EN 50317:2002			
13.6	working range height of pantograph	8.2.2.5	Working range of pantographs			RST: 4.2.8.2.9.1	RST: 4.2.8.2.9.1				
13.7	Current capacity	8.2.2.6 + 8.2.3.5	Current capacity + Current capacity		>Pantograph >Contact Strip	RST: 4.2.8.2.9.3	RST: 4.2.8.2.9.3				
13.8	Arrangement of pantographs	8.2.2.7	Arrangement of pantographs			RST: 4.2.8.2.9.7 6.2.2.2.16 TSI ENE CR 4.2.17 EN 50317:2002	RST: 4.2.8.2.9.7 6.2.2.2.16 TSI ENE CR 4.2.17	EN 50317:2002			
13.9	Insulation of pantograph from the vehicle	8.2.2.8	Insulation of pantograph from the vehicle			RST: 4.2.8.2.9.9	RST: 4.2.8.2.9.9				
13.10	Pantograph lowering	8.2.2.9 + 8.2.3.4	Pantograph lowering + Detection of contact strip breakage		>operational control >emergency control >automatic lowering (ADD)	RST: 4.2.8.2.9.10 EN 50206-1:2010 EN 50119:2009 ADD is manadatory above 165km/h.	RST: 4.2.8.2.9.10	EN 50206-1:2010 EN 50119:2009 ADD is manadatory above 165km/h.			
13.11	Running through phase separation sections	8.2.2.10	Running through phase separation sections			RST: 4.2.8.2.9.8 TSI ENE CR 4.2.19	RST: 4.2.8.2.9.8 TSI ENE CR 4.2.19				
13.12	Running through system separation sections	8.2.2.11	Running through system separation sections			RST: 4.2.8.2.9.8 TSI ENE CR 4.2.19	RST: 4.2.8.2.9.8 TSI ENE CR 4.2.19				
13.13	Contact strip geometry	8.2.3.1	Contact strip geometry			RST: 4.2.8.2.9.4.1 4.2.8.2.9.4.3 5.3.8.1 6.1.2.2.7 EN50405:2006 Risk Assessment for other geometries	RST: 4.2.8.2.9.4.1 4.2.8.2.9.4.3 5.3.8.1 6.1.2.2.7	EN50405:2006 Risk Assessment for other geometries			
13.14	Contact strip material	8.2.3.2 + 8.2.3.3	Contact strip material + Contact strip assessment			RST: 4.2.8.2.9.4.2 5.3.8.1 6.1.2.2.7 EN50405:2006 Risk Assessment for other materials	RST: 4.2.8.2.9.4.2 5.3.8.1 6.1.2.2.7	EN50405:2006 Risk Assessment for other materials			
14.0	Electromagnetic compatibility	8.4	Electromagnetic compatibility	The electromagnetic compatibility between the on-board electrical power supply and control system and: > other parts of the onboard electrical power supply and control system on the same vehicle; > other vehicles; > the trackside part of the railway system; > the external environment.	Heading only, no rule required to be notified						
14.1	EMC coordination	8.4.1	Electromagnetic compatibility within the onboard electrical power supply and control system	The electromagnetic compatibility between parts of the onboard electrical power supply and control system	>EMC plan to include all emmitting and susceptable vehcile equipment, any railway signalling eqiupment (including neighboring railways), any relevant susceptable groundbased equipment >EMC Plan and emmission limits must be agreed with all IMs where operation is intended and those railways which are neighboring to the operation	RST: 4.2.3.3.1.1 4.2.3.3.1.2 EN 50121-1 EN 50121-2 EN 50121-3-1 EN 50121-3-2	RST: 4.2.3.3.1.1 4.2.3.3.1.2			EN 50121-1 EN 50121-2 EN 50121-3-1 EN 50121-3-2	
14.1	EMC coordination	8.4.2	Electromagnetic compatibility with the signalling and telecommunications network	The electromagnetic compatibility between the onboard electrical power supply and control system and the signalling and telecommunications network part of the trackside		EN 50121-1 EN 50121-2 EN 50121-3-1 EN 50121-3-2				EN 50121-1 EN 50121-2 EN 50121-3-1 EN 50121-3-2	
14.1	EMC coordination	8.4.3	Electromagnetic compatibility with other vehicles and with the trackside part of the railway system	The electromagnetic compatibility between the onboard electrical power supply and control system and other vehicles and the trackside part of the railway system other than the signalling and telecommunications network		EN 50121-1 EN 50121-2 EN 50121-3-1 EN 50121-3-2				EN 50121-1 EN 50121-2 EN 50121-3-1 EN 50121-3-2	

14.1	EMC coordination	8.4.4	Electromagnetic compatibility with the environment	The electromagnetic compatibility between the onboard electrical power supply and control system and the environment external to the railway system (including people in the neighbourhood or on the platform, passengers, drivers/staff)		EN 50121-1 EN 50121-2 EN 50121-3-1 EN 50121-3-2				EN 50121-1 EN 50121-2 EN 50121-3-1 EN 50121-3-2	
15.0	Powered Systems	8.7	Systems requiring special monitoring and protection measures		Heading only, no rule required to be notified						
15.01	Thermal traction systems	8.6	Diesel and other thermal traction system requirements			To be investigated	To be investigated				
15.02	Tanks and pipe systems for flammable liquids	8.7.1	Tanks and pipe systems for flammable liquids	Special requirements for tanks and pipe systems for flammable liquids (including fuel)		RST: 4.2.10.3 Requirements for fuel system shall be established based on Risk Management to CSM 352/2009, EN 50126, EN 50128, EN 50129.	RST: 4.2.10.3				Requirements for fuel system shall be established based on Risk Management to CSM 352/2009, EN 50126, EN 50128, EN 50129.
15.03	Pneumatic Systems	8.7.2	Pressure vessel systems / pressure equipment			Pressure Equipment Directive Simple Pressure Vessels Directive EN 286	Pressure Equipment Directive Simple Pressure Vessels Directive			EN 286	
15.04	Hydraulic Systems	8.7.6	Hydraulic/pneumatic supply and control systems	Functional and technical specifications, e.g. compressed air power supply, capacity, type, temperature range, air dryers (towers), dew point indicators, insulation, air intake characteristics, fault indicators, etc.		Pressure Equipment Directive	Pressure Equipment Directive				
15.05	Steam boiler and steam systems	8.7.3	Steam boiler installations			Pressure Equipment Directive	Pressure Equipment Directive				
15.06	Technical systems in potentially explosive atmospheres	8.7.4	Technical systems in potentially explosive atmospheres	Special requirements for technical systems in potentially explosive atmospheres (e.g. liquid gas, natural gas and battery-powered systems, including protection of transformer tank)		ATEX directives Risk Assessment	ATEX directives				Risk Assessment
16.0	Driver Cab	9.1	Driver's cab design		Heading only, no rule required to be notified						
16.1	Cab Interior layout	9.1.1.1	Interior layout	e.g. space availability, cab arrangement and ergonomic requirements	e.g. space availability, cab arrangement and ergonomic requirements, stickers/ lables/ signage	RST> 4.2.9.1.4 Ann E	RST> 4.2.9.1.4 Ann E				
16.2	Cab ergonomics	9.1.1.2 + 9.1.1.3	Desk ergonomics + Driver's seat		>Desk/ controls ergonomics >Seat ergonomics >human factors	 UIC 651				UIC 651	
16.3	Cab side windows	9.1.1.4	Means for the driver to exchange documents		>Means for the driver to exchange documents >side windows						
16.4	Other facilities to control operation of the train	9.1.1.5	Other facilities to control operation of the train		>cab design (including related train control functions) shall permit single driver operation	RST 4.2.9.1.1	RST 4.2.9.1.1				
16.5	Access, egress and doors	9.1.2.1	Access, egress and doors			RST: 4.2.2.8 4.2.9.1.2.1 UIC 535-2	RST: 4.2.2.8 4.2.9.1.2.1			UIC 535-2	
16.6	Driver's cab emergency access/ egress	9.1.2.2	Driver's cab emergency exits			RST: 4.2.2.8 4.2.9.1.2.2	RST: 4.2.2.8 4.2.9.1.2.2				
16.7	Driver cab HVAC	9.2.1.1	Heating, ventilation and air condition systems in driver cabs		Heating, ventilation and air condition systems in driver cabs	RST: 4.2.6.1.5	RST: 4.2.6.1.5			EN 14813-1	
16.8	Noise in driver cabs	9.2.1.2	Noise in driver cabs	Including horn level inside the cab	Including horn level inside the cab	RST: 4.2.9.1.1 TSI NOI CR EN 15153-2	RST: 4.2.9.1.1 TSI NOI CR			EN 15153-2	
16.9	Lighting in driver cabs	9.2.1.3	Lighting in driver cabs								
16.10	other cab equipment	9.2.2	Others		>stickers/ lables/ markings inside/ outside of cab >emergency equipment for Irish Infrastructure >storage facilities for equipment and staff clothing/ bags						
16.11	speed indication	9.3.1.1	speed indication	recording of speed covered by 9.6							
16.12	driver display unit and screens	9.3.1.2	driver display unit and screens								
16.13	controls and indicators	9.3.1.3	controls and indicators								

16.14	Driver Vigilance Control	9.3.2	Driver supervision	Driver activity control function e.g. vigilance		RST: 4.2.9.3.1	RST: 4.2.9.3.1				
16.15	rear and side view	9.3.3	rear and side view								risk assessment
16.16	Marking and labelling in Driver cabs	9.4	Marking and labelling in Driver cabs	Static display of basic information for the driver		RST: 4.2.9.3.5 UIC 545 UIC 640	RST: 4.2.9.3.5			UIC 545 UIC 640	
17.0	windscreen	9.1.3	Windscreen in driver's cab		Heading only, no rule required to be notified						
17.1	mechanical characteristics windscreen	9.1.3.1	mechanical characteristics			RST: 4.2.9.2 6.2.2.2.17 EN 15152:2007 UIC651	RST: 4.2.9.2 6.2.2.2.17	EN 15152:2007		UIC651	
17.2	equipment of windscreen	9.1.3.3	equipment	e.g. de-icing, de-misting, external cleaning devices, etc.	e.g. de-icing, de-misting, washer, wiper, external cleaning devices, etc.	RST: 4.2.9.3 EN 15152	RST: 4.2.9.3			EN 15152	
17.3	front visibility	9.1.3.4 + 9.1.3.2	front visibility + optical characteristics		>front: field of vision/ wiping/ demisting, absence of optical interference >rear and side view	RST: 4.2.9.1.3 Ann F EN 15152	RST: 4.2.9.1.3 Ann F			EN 15152	
18.0	staff facilities	9.5.1	Facilities onboard for staff		Heading only, no rule required to be notified						
18.1	Staff access for coupling /uncoupling	9.5.1.1	Staff access for coupling /uncoupling			 UIC 535-2				UIC 535-2	
18.2	External steps and handrails for shunting staff	9.5.1.2	External steps and handrails for shunting staff			 UIC 535-2				UIC 535-2	
18.3	Storage facilities for use by staff	9.5.1.3	Storage facilities for use by staff			RST: 4.2.9.5	RST: 4.2.9.5				
18.4	Other facilities	9.5.1.4	Other facilities								
18.5	staff acces doors	9.5.2	Staff and freight access doors	doors equipped with security device for opening only by staff including catering		RST: 4.2.2.8	RST: 4.2.2.8				
18.6	On-board tools and portable equipment	9.5.3	On-board tools and portable equipment	e.g. equipment needed by driver or staff in emergency situation		RST: 4.2.9.4 TSI RST HS:2008 4.2.7.2.3.2 CME-TMS-305	RST: 4.2.9.4	TSI RST HS:2008 4.2.7.2.3.2		CME-TMS-305	
18.7	On-board tools and portable equipment	9.5.4	Audible communication system	e.g. for communication between - the train crew, - the train crew and people inside/outside of the train							
19.0	Fire safety and evacuation	10	Fire safety and evacuation		Heading only, no rule required to be notified						
19.1	Gernal fire safety and evacuation concept	10.1.1.1	Classification of vehicle / Fire categories		including: > classification of vehicle/ fire categories > evacuation, emergenc exits, evacuation routes	RST: 4.1.4 4.2.10 SRT	RST: 4.1.4 4.2.10 SRT				
19.2	Gernal fire safety and evacuation concept	10.1.2.1	General protection measures for vehicles		including: > General protection measures for vehicles	RST: 4.1.4 4.2.10 SRT	RST: 4.1.4 4.2.10 SRT				
19.3	Gernal fire safety and evacuation concept	10.1.2.2	Fire protection measures for specific kinds of vehicles	E.g. requirements for freight trains or passenger trains on running capability, drivers' protection, etc.	including: > Fire protection measures for specific kinds of vehicles	RST: 4.1.4 4.2.10 SRT	RST: 4.1.4 4.2.10 SRT				
19.4	Gernal fire safety and evacuation concept	10.1.2.3	Protection of driver's cab		including: > Protection of driver's cab	RST: 4.1.4 4.2.10 SRT	RST: 4.1.4 4.2.10 SRT				
19.5	Gernal fire safety and evacuation concept	10.1.2.4	Fire barriers		including: > Fire barriers > Fire Spreading Prevention Measures	RST: 4.1.4 4.2.10 4.2.10.5 6.2.2.2.18 SRT EN1363-1:1999	RST: 4.1.4 4.2.10 4.2.10.5 6.2.2.2.18 SRT		EN1363-1:1999		

19.6	Fire Safety Material properties listing	10.1.2.5	Material properties		non-metallic parts list (material, location, quantities, material properties, evidence on material testing, etc.)	RST: 4.2.10.3 SRT: 4.2.5.1	RST: 4.2.10.3 SRT: 4.2.5.1				
19.7	Fire detection equipment	10.1.2.6	Fire detectors		detection, indication, alarms, control of automatic extinction equipment	RST: 4.2.10.3 SRT: 4.2.5.6	RST: 4.2.10.3 SRT: 4.2.5.6				
19.8	Fire extinction equipment	10.1.2.7	Fire extinction equipment			RST: 4.2.10.3 SRT EN 3	RST: 4.2.10.3 SRT			EN 3	
19.9	Additional measures	10.3	Additional measures		>e.g. compensatory measures	Risk Assessment					Risk Assessment
20.0	Vehicle Network Interfaces	3	Track interaction and gauging	Mechanical interfaces to the infrastructure (including static and dynamic behaviour, clearances and fits, gauge, running gear, etc.)	Heading only, no rule required to be notified						
20.1	Vehicle Gauge	3.1 + 3.1.1	Vehicle gauge + Specific case	Compatibility of the vehicle profile with the infrastructure and other vehicles (static and dynamic gauge) based on reference static and dynamic gauge + Specific case (e.g. vehicles to be carried on a ferry)	>vehicle gauge (requirerements for ferry operation not relevant for irish vehicles), >platform interface >pantograph gauge	RST: 4.2.3.1 4.2.3.6 6.2.2.2.2 7.3.2.3 IRL flexibility coefficient to EN 15273-2:2009 EN 14363 CME-TS-3xx pantograph gauge to EN 15273-2:2009 in conjunction with CME-TS-3xx	RST: 4.2.3.1 4.2.3.6 6.2.2.2.2 7.3.2.3 IRL	flexibility coefficient to EN 15273-2:2009 EN 14363 CME-TS-3xx pantograph gauge to EN 15273-2:2009 in conjunction with CME-TS-3xx			
20.2	Sanding/ Flange Lubrication	3.3.4	Wheel/rail interface (including wheel flange lubrication and sanding)	Wheel/rail interface (including wheel flange lubrication, upper sway / wearing track wheel interactions and sanding requirements deriving from traction, braking, train detection)	>position/ flow rate of sanding >sanding positions and performance >lubrication positions and performance (avoidance of railhead/wheel contamination)	RST: 4.2.3.3.1.1 4.2.3.3.1.2 7.5.3.1 Requirements for sanding positions/ rate and for flange lubrication devices compatibility with Irish Network (existing train detection systems) shall be established based on Risk Management to CSM 352/2009, EN	RST: 4.2.3.3.1.1 4.2.3.3.1.2 7.5.3.1				Requirements for sanding positions/ rate and for flange lubrication devices compatibility with Irish Network (existing train detection systems) shall be established based on Risk Management to CSM 352/2009, EN 50126, EN 50128, EN 50129.
20.3	Minimum curve radius to be negotiated	3.3.6	Minimum curve radius to be negotiated	Values and conditions (e.g. coach coupled/uncoupled)	Free movement of bogies, copling, gangways, etc. at minimum curve radius and S-curves to be negotiated	RST: 4.2.3.6 Min radius assessment to ERRI B85 DT135 annB (to be adapted). CME-TMS-302	RST: 4.2.3.6			Min radius assessment to ERRI B85 DT135 annB (to be adapted). CME-TMS-302	
21.0	Protection of environment				Heading only, no rule required to be notified						
21.1	Toilet emissions	6.2.1.1	Toilet emissions	Toilet discharge emissions to the external environment							
21.2	Exhaust gas emissions	6.2.1.2	Exhaust gas emissions	Exhaust gas emissions to the external environment		RST: 4.2.8.3	RST: 4.2.8.3				
21.3	exterior noise	6.2.2.1	Exterior noise impact	Exterior noise impact caused by the vehicle upon the environment external to the railway system		NOI	NOI				
21.4	exterior noise	6.2.2.2	Stationary noise impact	Stationary noise impact caused by the vehicle upon the environment external to the railway system		NOI	NOI				
21.5	exterior noise	6.2.2.3	Starting noise impact	Starting noise impact caused by the vehicle upon the environment external to the railway system		NOI	NOI				
21.6	exterior noise	6.2.2.4	Pass-by noise impact	Pass-by noise impact caused by the vehicle upon the environment external to the railway system		NOI	NOI				
22.0	Aerodynamic effects	6.2.3	Limits for aerodynamic loads impact	Limits for impact of aerodynamic loads caused by the vehicle upon other parts of the railway system and upon the environment	Heading only, no rule required to be notified						
22.1	Maximum pressure variation in tunnels	6.1.2.2	Maximum pressure variation in tunnels	Impact upon vehicle equipment and functions due to rapid changes in ambient pressure		RST: 4.2.6.2.4	RST: 4.2.6.2.4				
22.2	Head pressure pulse	6.2.3.1	Head pressure pulses	Effect of pressure pulses caused by the head of the train at the track side		RST: 4.2.6.2 4.2.6.2.3 6.2.2.2.12 EN 14067-4:2005/A1:2009	RST: 4.2.6.2 4.2.6.2.3 6.2.2.2.12	EN 14067-4:2005/A1:2009			
22.3	Slipstream Effects on passengers on platform	6.2.3.2	Aerodynamic impact on passengers / materials on the platform	Aerodynamic disturbance to passengers / materials on platform including assessment methods and operational loading conditions		RST: 4.2.6.2 4.2.6.2.1 6.2.2.2.10 EN 14067-4:2005/A1:2009	RST: 4.2.6.2 4.2.6.2.1 6.2.2.2.10	EN 14067-4:2005/A1:2009			

22.4	Slipstream Effects on trackside workers	6.2.3.3	Aerodynamic impact on track workers	Aerodynamic disturbance to Track workers		RST: 4.2.6.2 4.2.6.2.2 6.2.2.2.11	RST: 4.2.6.2 4.2.6.2.2 6.2.2.2.11				
22.5	protection against ballast pick-up	6.2.3.4	Ballast pick-up and projection onto neighbouring property		>protection against damage of train components due to ballast impact >protection against projection out of vehicle gauge	Requirements for Underframe impact protection shall be established based on Risk Management to CSM 352/2009, EN 50126, EN 50128, EN 50129.					Requirements for Underframe impact protection shall be established based on Risk Management to CSM 352/2009, EN 50126, EN 50128, EN 50129.
23.0	compatibility with train detection systems	12.2.3	Compatibility of rolling stock with track infrastructure	Compatibility e.g. with track-side detection systems or Hot Axle box detectors, for EMC see 8.4.2	Heading only, no rule required to be notified						
23.1	Vehicle geometry	12.2.3.1	Relation between axle distance and wheel diameter		>max. axle spacing >max. overhang bufferface to first axle >min. distance between outer axles >wheel geometry parameters >nin. wheel diameter (speed dependent)	RST: 4.2.3.3.1.1 4.2.3.3.1.2	RST: 4.2.3.3.1.1 4.2.3.3.1.2				
23.2	Vehicle design	a)12.2.3.2 b)12.2.3.3	a)Metal free space around wheels b)Metal mass of a vehicle		>min. axle load >wheelset electrical resistance >ferromagnetic requirements for wheelmaterial >requirements for metal free space around wheels must be agreed with all IMs where operation is intended >requirements for height of magnetic track brakes or inactive Eddie Current brakes ust be agreed with all IMs where operation is intended >minimum impedance between pantograph and wheels is not defined for Irish Network >active Eddie Current Brakes are not permitted on the Irish Network >min. metal mass of vehicle is not defined for the Irish Network	RST: 4.2.3.3.1.1 4.2.3.3.1.2 4.2.3.3.1.2 TSI CR CCS Ann A, App 1 EN 50238	RST: 4.2.3.3.1.1 4.2.3.3.1.2 4.2.3.3.1.2	TSI CR CCS Ann A, App 1		EN 50238	
23.3	visibility of axle bearings				>visibility of bearing to trackside equipment >permitted bearing operating temperatures, bearing differential temperatures shall be agreed with Irish network IM	RST: 4.2.3.3.2 7.3.2.4 IRL EN15437-1:2009 5.1+5.2	RST: 4.2.3.3.2 7.3.2.4 IRL	EN15437-1:2009 5.1+5.2			
24.0	Freight-related items	14	Freight-related items	Freight-specific requirements and environment (including facilities specifically required for dangerous goods)	Heading only, no rule required to be notified						
24.1	dangerous goods facilities	14.1	Design, operation and maintenance constraints for the transport of dangerous goods	e.g. requirements derived from RID, national rules or other regulations for the transport of dangerous goods		RID	RID				
24.2	Specific facilities for the transport of freight	14.2	Specific facilities for the transport of freight		>container >pressurised container >load securing, containment	TSI WAG	TSI WAG				
24.3	Doors, hatches, etc. and loading/ unloading facilities	14.3	Doors and loading facilities			TSI WAG	TSI WAG				
25.0	Provisions for Maintenance/ Servicing	1.2	Maintenance instructions and requirements		Heading only, no rule required to be notified						
25.1	The maintenance description file	1.2.1	Maintenance instructions	Maintenance manuals and leaflets, including requirements necessary to maintain design safety level of the vehicle. Any appropriate professional qualifications i.e. skills and associated training that are requested for equipment maintenance.	>evidence on the technical compatibility of the subsystem(s) with the (railway) system into which they are being integrated, safe integration of these subsystems in accordance with Articles 4(3) and 6(3) of Directive 2004/49/EC (2008/57/EC Art15) >evidence on compliance, where applicable, with the relevant TSI provisions on operation and maintenance, repair, operation and maintenance information, >Maintenance manuals and leaflets, including requirements necessary to maintain design safety level of the vehicle. >Any appropriate professional qualifications i.e. skills and associated training that are requested for equipment maintenance. >Appropriate concept on maintenance records and tracebility of safety critical components (HW/SW)	RST: 4.2.12 4.2.12.3 4.2.12.5 4.5	RST: 4.2.12 4.2.12.3 4.2.12.5 4.5				
25.2	The maintenance design justification file	1.2.2	The maintenance design justification file		Including assessment on: >adequacy of maintenence scope, tolerances and intervals of safety related activities, >adequacy of maintenance manuals and leaflets, >adequacy of training, >maintainability in relation to human factors and occupational health and safety. Providing general information as far as related to manintenance	RST: 4.2.12 4.2.12.1 4.2.12.2(related to documents required for Maintenance Design Function) 4.2.12.3 4.2.12.5 4.5	RST: 4.2.12 4.2.12.1 4.2.12.2(related to documents required for Maintenance Design Function) 4.2.12.3 4.2.12.5 4.5				
25.3	Compatibility with train cleaning facilities - external	11.1.1	Train external cleaning facilities	e.g. external cleaning through a washing plant	> external cleaning in washing plant > external cleaning of windscreen	RST: 4.2.11.2	RST: 4.2.11.2				
25.4	Compatibility with train cleaning facilities - internal	11.1.2	Train internal cleaning			RST: 4.2.11	RST: 4.2.11				
25.5	Waste water disposal systems	11.2.1	Waste water disposal systems	Including interface to toilet discharge system	No polluting substances may be emmitted from the vehcile.	RST: 4.2.11.3 5.3.10	RST: 4.2.11.3 5.3.10				
25.6	Water system	11.2.2	Water supply system	Conformity to sanitary regulations	supply, storage, distribution	RST: 4.2.11.4 5.3.11 7.3.2.21 IRL TSI HS RST 4.2.9.5.2	RST: 4.2.11.4 5.3.11 7.3.2.21 IRL	TSI HS RST 4.2.9.5.2			
25.7	Stabling of trains	11.2.3	Further supply facilities	e.g. special requirement for stabling of trains	> fittness for unattended stabling > power supply to stabled trains > design to cope with sudden loss/ restorage of power supply	RST: 4.2.11.6 7.3.2.22 IRL IE-CME-307	RST: 4.2.11.6 7.3.2.22 IRL IE-CME-307				

25.8	Refuling Interface	11.2.4	Interface to refuelling equipment for non-electric rolling stock	e.g. nozzles used for diesel fuels and others	> TSI interface > other interfaces > identification of vehicle at fueling point	RST: 4.2.11.7 7.3.2.23 IRL IE-CME-307 UIC 627-2:1980	RST: 4.2.11.7 7.3.2.23 IRL IE-CME-307	UIC 627-2:1980			
26.0	Provisions for Operation	1.3	Instructions and documentation for operation		Heading only, no rule required to be notified						
26.1	Operating Manual	1.3.1	Instructions for operation in normal and degraded modes of the vehicle		Including assessment on: >adequacy of documentation for operation, >adequacy of training, >consideration of human factors and occupational health and safety >permitted train formations/ pre defined formations/ MU operations	RST: 4.2.12 4.2.12.1 4.2.12.2 4.2.12.4 4.4 4.6 6.2.6 6.2.7 6.2.8 TSI OPE RFU-STR- 2007/59/EC Driver Training Program covering this RST	RST: 4.2.12 4.2.12.1 4.2.12.2 4.2.12.4 4.4 4.6 6.2.6 6.2.7 6.2.8 TSI OPE		RFU-STR- 2007/59/EC Driver Training Program covering this RST		
26.2	Specific requirments for tunnel operation					RST: 4.2.6.2.4 SRT	RST: 4.2.6.2.4 SRT				
26.3	on board equipment	13.1	Specific items to place on-board		> first aid box	CME-TMS-305					CME-TMS-305
26.4	Occupational health and safety	13.2	Occupational health and safety	e.g.occupational health and safety at loading/unloading/shunting							
26.5	Lifting diagram and instructions for rescue	13.3	Lifting diagram and instructions for rescue	Rescue, lifting and rerailing	in co-ordination with 2.1.4						
26.6	Operation under degraded conditions				Provide operating rules for: >operation outside of standard environmental (weather) conditions (e.g. winterisation, speed limits) >operation with isolated brake functions/ systems >operation with isolated doors/ HVAC/ toilets >operation under crosswind >rules for isolation of equipment (e.g. brakes, doors, HVAC, lighting, taction systems, batteries, toilets)	RST: 4.2.6.2.5	RST: 4.2.6.2.5				
26.7	Emergency operation				>evacuation rules >emergency services access >rules for operation with declared fire on board >rules for operation with declared technical failure(s) on board >electrical isolation/ earthing	RST: 4.2.12.6 4.4	RST: 4.2.12.6 4.4				
26.8	Recovery				>recovery /rescue haulage >rules for installation and operation with rescue adapter coupling >rules for re-railing >rules for lifting	RST: 4.2.12.6 4.4	RST: 4.2.12.6 4.4				
26.9	Rescue services' information, equipment and access	10.2.2	Rescue services' information, equipment and access			RST: 4.2.10.1.3 SRT: 4.2.5.12	RST: 4.2.10.1.3 SRT: 4.2.5.12				