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0. DOCUMENT INFORMATION

0.1. Amendment record

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1. INTRODUCTION

- 1.1. This annex presents several examples of application of the TSIs to some cases along the different stages of the projects.
- 1.2. The examples range from easy cases where only one subsystem is involved and one TSI is applicable to more complex cases which are closer to the real situations.
- 1.3. In the tables below, the 'applicants' may be different for different tasks indicated (EC verification of different subsystems, verification of conformity to national rules for different subsystems, request for the authorisation for placing in service, placing in service, etc.).
- 1.4. The tasks of the different notified bodies and designated bodies may be performed by one single entity (provided, of course, that this entity is notified and designated for all applicable subsystems, TSIs and national rules). However, from a formal point of view, these activities and related certificates should be clearly separated.



2. ELECTRIFICATION OF A SECTION OF AN EXISTING LINE

- 2.1. This example shows a case of electrification of a section of an existing conventional railway line. The section does not include stations or tunnels. The TSIs do not include open points (theoretical example), and there are no specific cases applicable. There are no derogations.
- 2.2. In this case, the structural subsystem subject to verification is 'Energy', and the applicable TSI is CR ENE TSI (which requires application of the 'new' SG or SH1 modules). The TSI has to be applied in full.

Table 2: Electrification of a section of an existing conventional line

	Applicant	Notified body for ENE	NSA
1. Project stage	ENE subsystem - Design - Production - Final testing TSI fully applied <div style="border: 1px solid black; padding: 2px; display: inline-block;">EC declaration of verification</div>	EC verification procedure of ENE subsystem, conformity to: - CR ENE TSI <div style="border: 1px solid black; padding: 2px; display: inline-block;">EC certificate of verification + technical file</div>	
2. Authorisation and placing in service	Before placing in service: <div style="border: 1px solid black; padding: 2px; display: inline-block;">EC declaration</div> <div style="border: 1px solid black; padding: 2px; display: inline-block;">Risk assessment report</div> IM SMS update PLACING IN SERVICE		Checking technical compatibility and safe integration (Art. 15(1), (2) of ID) <div style="border: 1px solid black; padding: 2px; display: inline-block;">Authorisation for placing in service</div>
3. Subsystem in service	Operation and maintenance according to, inter alia, the provisions of the applied TSI.		Checking in the context of supervision of safety authorisation (Art. 15(3) of ID and Art. 11 of SD)

3. NEW NON-ELECTRIFIED CONVENTIONAL LINE

- 3.1. This example shows a case of building a new non-electrified conventional line. The section of the line does not include passenger stations or tunnels. The TSIs do not include open points (theoretical example), and there are no specific cases applicable. There are no derogations.
- 3.2. In this case, the structural subsystems subject to verification and the TSIs applicable to them are:
- Infrastructure
 - CR infrastructure TSI (which requires application of the 'new' SG or SH1 modules)
 - Trackside control command and signalling
 - CR CCS TSI (which requires application of the 'old' SB+SD or SB+SF or SG or SH2 modules)

Table 3: New non-electrified conventional line

	Applicant	Notified bodies		NSA
		NoBo for INF	NoBo for CCS	
1. Project stage	INF subsystem - Design - Production - Final testing TSI fully applied <div style="border: 1px solid black; padding: 2px; display: inline-block;">EC declaration of verification</div>	EC verification procedure for INF subsystem, conformity to: - CR INF TSI <div style="border: 1px solid black; padding: 2px; display: inline-block;">EC certificate of verification + technical file</div>		
	CCS subsystem - Design - Production - Final testing TSI fully applied <div style="border: 1px solid black; padding: 2px; display: inline-block;">EC declaration of verification</div>		EC verification procedure of CCS subsystem, conformity to: - CR CCS TSI trackside part <div style="border: 1px solid black; padding: 2px; display: inline-block;">EC certificate of verification + technical file</div>	
2. Authorisation and placing in service	Before placing in service: <div style="border: 1px solid black; padding: 2px; display: inline-block;">EC declarations</div> <div style="border: 1px solid black; padding: 2px; display: inline-block;">Risk assessment report</div>			Checking technical compatibility and safe integration (Art. 15(1), (2) of ID)
	IM SMS update PLACING IN SERVICE			<div style="border: 1px solid black; padding: 2px; display: inline-block;">Authorisation for placing in service</div>
3. Subsystem in service	Operation and maintenance according to, inter alia, provisions of the applied TSI.			Checking in the context of supervision of safety authorisation (Art. 15(3) of ID and Art. 11 of SD)

4. **NEW ELECTRIFIED HIGH-SPEED LINE**

4.1. **New electrified high-speed line without stations and tunnels (without open points, specific cases or derogations)**

4.1.1. This example shows a case of building a new high-speed line. The section of the line does not include passenger stations or tunnels. The TSIs do not include open points (theoretical example), and there are no specific cases applicable. There are no derogations.

4.1.2. In this case, the structural subsystems subject to verification and the TSIs applicable to them are:

- Infrastructure
 - HS Infrastructure TSI (which requires application of the 'old' SG or SH2 modules)
- Energy
 - HS Energy TSI (which requires application of the 'old' SG or SH2 modules)
- Trackside control command and signalling
 - HS CCS TSI (which requires application of the 'old' SB+SD or SB+SF or SG or SH2 modules)

The TSIs are applicable in full.



Table 4: New HS line without stations and tunnels (without open points, specific cases or derogations)

	Applicant	Notified bodies			NSA
		NoBo for INF	NoBo for CCS	NoBo for ENE	
1. Project stage	INF subsystem - Design - Production - Final testing TSIs applied in full EC declaration of verification	EC verification procedure for INF subsystem, conformity to: - HS INF TSI EC certificate of verification + technical file			
	CCS subsystem - Design - Production - Final testing TSIs applied in full EC declaration of verification		EC verification procedure of CCS subsystem, conformity to: - HS CCS TSI trackside part EC certificate of verification + technical file		
	ENE subsystem - Design - Production - Final testing TSIs applied in full EC declaration of verification			EC verification procedure of ENE subsystem, conformity to: - HS ENE TSI EC certificate of verification + technical file	



Table 4: New HS line without stations and tunnels (without open points, specific cases or derogations)

	Applicant	Notified bodies			NSA
		NoBo for INF	NoBo for CCS	NoBo for ENE	
2. Authorisation and placing in service	Before placing in service: <div style="border: 1px solid black; padding: 2px; display: inline-block;"> EC declarations Risk assessment report </div>				Checking technical compatibility and safe integration (Art. 15(1), (2) of ID)
	IM SMS update PLACING IN SERVICE				<div style="border: 1px solid black; padding: 2px; display: inline-block;"> Authorisation for placing in service </div>
3. Subsystem in service	Operation and maintenance according to, inter alia, provisions of the applied TSI.				Checking in the context of supervision of safety authorisation (Art. 15(3) of ID and Art. 11 of SD)

4.2. New electrified high-speed line with stations and tunnels (without open points, specific cases or derogations)

4.2.1. This example shows a case of building a high-speed railway line, as in the example of section 4.1 above; but this time it includes passenger stations and tunnels. The rest of the conditions are the same: TSIs with no open points (theoretical situation), no applicable specific cases and no derogations.

4.2.2. In this case, the structural subsystems subject to verification and the TSIs applicable to them are:

- Infrastructure
 - HS Infrastructure TSI (which requires application of the 'old' SG or SH2 modules)
 - Persons with Reduced Mobility TSI, Infrastructure subsystem part (which requires application of the 'old' SB+SD or SG or SH2 modules)
 - Safety in Railway Tunnels TSI, Infrastructure subsystem part (which requires application of the 'old' SG or SH2 modules)
- Trackside Control Command and Signalling
 - HS CCS TSI (which requires application of the 'old' SB+SD or SB+SF or SG or SH2 modules)
 - Safety in railway tunnels TSI, CCS subsystem part (which requires application of the 'old' SG or SH2 modules)
- Energy
 - Energy HS TSI (which requires application of the 'old' SG or SH2 modules)
 - Safety in Railway Tunnels TSI, Energy subsystem part (which requires application of the 'old' SB+SD or SB+SF or SG or SH2 modules)

The TSIs are applicable in full.



Table 5: New HS line with stations and tunnels (without open points, specific cases or derogations)

	Applicant	Notified bodies			NSA
		NoBo for INF	NoBo for CCS	NoBo for ENE	
1. Project stage	INF subsystem - Design - Production - Final testing TSIs applied in full EC declaration of verification	EC verification procedure for INF subsystem, conformity to: - HS INF TSI - PRM TSI (infrastructure part) - SRT TSI (infrastructure part) EC certificate of verification + technical file			
	CCS subsystem - Design - Production - Final testing TSIs applied in full EC declaration of verification		EC verification procedure of CCS subsystem, conformity to: - HS CCS TSI (trackside part) - SRT TSI (CCS trackside part) EC certificate of verification + technical file		
	ENE subsystem - Design - Production - Final testing TSIs applied in full EC declaration of verification			EC verification procedure of ENE subsystem, conformity to: - HS ENE TSI - SRT TSI (energy part) EC certificate of verification + technical file	



Table 5: New HS line with stations and tunnels (without open points, specific cases or derogations)

	Applicant	Notified bodies			NSA
		NoBo for INF	NoBo for CCS	NoBo for ENE	
2. Authorisation and placing in service	Before placing in service: <div style="border: 1px solid black; padding: 2px; display: inline-block;"> EC declarations Risk assessment report </div>				Checking technical compatibility and safe integration (Art. 15(1), (2) of ID) <div style="border: 1px solid black; padding: 2px; display: inline-block;"> Authorisation for placing in service </div>
	IM SMS update PLACING IN SERVICE				
3. Subsystem in service	Operation and maintenance according to, inter alia, provisions of the applied TSI.				Checking in the context of supervision of safety authorisation (Art. 15(3) of ID and Art. 11 of SD)

4.3. New electrified high-speed line with stations and tunnels (with open points, specific cases and derogations)

4.3.1. This example shows a case of building a high-speed railway line, which includes passenger stations and tunnels, as in section 4.2 above. This time it is considered that the TSIs include open points, and there are applicable specific cases. There are also derogations.

4.3.2. In this case, the structural subsystems subject to verification and the TSIs applicable to them are:

- Infrastructure
 - HS Infrastructure TSI (which requires application of the 'old' SG or SH2 modules)
 - Persons with Reduced Mobility TSI, Infrastructure subsystem part (which requires application of the 'old' SB+SD or SG or SH2 modules)
 - Safety in Railway Tunnels TSI, Infrastructure subsystem part (which requires application of the 'old' SG or SH2 modules)
- Trackside Control Command and Signalling
 - HS CCS TSI (which requires application of the 'old' SB+SD or SB+SF or SG or SH2 modules)
 - Safety in Railway Tunnels TSI, CCS subsystem part (which requires application of the 'old' SG or SH2 modules)
- Energy
 - Energy HS TSI (which requires application of the 'old' SG or SH2 modules)
 - Safety in Railway Tunnels TSI, Energy subsystem part (which requires application of the 'old' SB+SD or SB+SF or SG or SH2 modules)

The TSIs are applicable in full, except where derogations according to Article 9 of the Interoperability Directive have been granted.

Table 6: New HS line with stations and tunnels (with open points, specific cases and derogations)

	Applicant	Notified bodies			Designated bodies	NSA
		NoBo for INF	NoBo for CCS	NoBo for ENE		
1. Project stage	INF subsystem - Design - Production - Final testing TSIs applied in full, except where derogation has been granted EC declaration of verification + National declaration of verification	EC verification procedure for INF subsystem, conformity to: - HS INF TSI - PRM TSI (infrastructure part) - SRT TSI (infrastructure part) (does not include parts covered by specific cases or derogation) EC certificate of verification + technical file			Verification procedure for INF subsystem (based on national rules notified under Art. 17 of ID) for: - open points - specific cases - derogations National certificate of verification + technical file	
	CCS subsystem - Design - Production - Final testing TSIs applied in full, except where derogation has been granted EC declaration of verification + National declaration of verification		EC verification procedure of CCS subsystem, conformity to: - HS CCS TSI (trackside part) - SRT TSI (CCS trackside part) (does not include parts covered by specific cases or derogation) EC certificate of verification + technical file		Verification procedure for CCS subsystem (based on national rules notified under Art. 17 of ID) for: - open points - specific cases - derogation National certificate of verification + technical file	

Table 6: New HS line with stations and tunnels (with open points, specific cases and derogations)

	Applicant	Notified bodies			Designated bodies	NSA
		NoBo for INF	NoBo for CCS	NoBo for ENE		
	ENE subsystem - Design - Production - Final testing TSIs applied in full, except where derogation has been granted <div style="border: 1px solid black; padding: 2px; margin-top: 5px;"> EC declaration of verification + National declaration of verification </div>			EC verification procedure of ENE subsystem, conformity to: - HS ENE TSI - SRT TSI (energy part) (does not include parts covered by specific cases or derogation) <div style="border: 1px solid black; padding: 2px; margin-top: 5px;"> EC certificate of verification + technical file </div>	Verification procedure for ENE subsystem (based on national rules notified under Art. 17 of ID) for: - open points - specific cases - derogation <div style="border: 1px solid black; padding: 2px; margin-top: 5px;"> National certificate of verification + technical file </div>	
2. Authorisation and placing in service	Before placing in service: <div style="border: 1px solid black; padding: 2px; margin-top: 5px;"> EC declarations National declarations Risk assessment report </div> IM SMS update PLACING IN SERVICE				Checking technical compatibility and safe integration (Art. 15(1), (2) of ID) <div style="border: 1px solid black; padding: 2px; margin-top: 5px;"> Authorisation for placing in service </div>	
3. Subsystem in service	Operation and maintenance according to, inter alia, provisions of the applied TSI.				Checking in the context of supervision of safety authorisation (Art. 15(3) of ID and Art. 11 of SD)	

5. UPGRADING FROM CONVENTIONAL TO HIGH-SPEED AND ELECTRIFICATION OF AN EXISTING LINE

5.1. This example shows a case of upgrading of an existing line from conventional to high speed. The line includes passenger stations and tunnels. The infrastructure and trackside control – command and signalling subsystems of the line are being upgraded. At the same time, the line is being electrified. The TSIs include open points, and there are applicable specific cases. There are no derogations.

5.2. In this case, the structural subsystems subject to verification and the TSIs applicable to them are:

- Infrastructure
 - HS Infrastructure TSI (which requires application of the ‘old’ SG or SH2 modules)
 - Persons with Reduced Mobility TSI, Infrastructure subsystem part (which requires application of the ‘old’ SB+SD or SG or SH2 modules)
 - Safety in Railway Tunnels TSI, Infrastructure subsystem part (which requires application of the ‘old’ SG or SH2 modules)
- Trackside Control Command and Signalling
 - HS CCS TSI (which requires application of the ‘old’ SB+SD or SB+SF or SG or SH2 modules)
 - Safety in Railway Tunnels TSI, CCS subsystem part (which requires application of the ‘old’ SG or SH2 modules)
- Energy
 - Energy HS TSI (which requires application of the ‘old’ SG or SH2 modules)
 - Safety in Railway Tunnels TSI, Energy subsystem part (which requires application of the ‘old’ SB+SD or SB+SF or SG or SH2 modules)

For infrastructure and trackside control command and signalling (upgraded subsystems) the TSIs are applicable in the extent defined by the Member State according to Article 20 of the Interoperability Directive; for energy (new subsystem), the TSIs are applicable in full.

Table 7: Upgrading (with a new authorisation for placing in service) from conventional to high speed of INF and CCS subsystems of an existing line and its electrification

	Applicant	Notified bodies			Designated bodies	Member State authorities
		NoBo for INF	NoBo for CCS	NoBo for ENE		
0. Preliminary stage	Project definition - INF upgrading - CCS upgrading - ENE new subsystem <div style="border: 1px solid black; padding: 2px;">File describing the project</div>					Examination of the file describing the project and the implementation strategy of the applicable TSIs, and deciding if new authorisation is needed for INF and CCS and if yes, whether the TSIs are to be applied fully or partly (Art. 20 of ID).
1. Project stage	INF subsystem - Design - Production - Final testing TSIs applied according to the decision of the MS <div style="border: 1px solid black; padding: 2px;">EC declaration of verification + National declaration of verification</div>	EC verification procedure for INF subsystem, conformity to: - HS INF TSI - PRM TSI (infrastructure part) - SRT TSI (infrastructure part) (does not include parts covered by specific cases or where TSIs are not applied) <div style="border: 1px solid black; padding: 2px;">EC certificate of verification + technical file</div>			Verification procedure for INF subsystem (based on national rules notified under ID) for: - open points (Art. 17 of ID) - specific cases (Art. 17 of ID) - parts not covered by the TSIs according to MS decision (Art 20 of ID) <div style="border: 1px solid black; padding: 2px;">National certificate of verification + technical file</div>	

Table 7: Upgrading (with a new authorisation for placing in service) from conventional to high speed of INF and CCS subsystems of an existing line and its electrification

	Applicant	Notified bodies			Designated bodies	Member State authorities
		NoBo for INF	NoBo for CCS	NoBo for ENE		
	CCS subsystem - Design - Production - Final testing TSIs applied according to the decision of the MS EC declaration of verification + National declaration of verification		EC verification procedure of CCS subsystem, conformity to: - HS CCS TSI (trackside part) - SRT TSI (CCS trackside part) (does not include parts covered by specific cases or where TSIs are not applied) EC certificate of verification + technical file		Verification procedure for CCS subsystem (based on national rules notified under ID) for: - open points (Art. 17 of ID) - specific cases (Art. 17 of ID) - parts not covered by the TSIs according to MS decision (Art 20 of ID) National certificate of verification + technical file	
	ENE subsystem - Design - Production - Final testing TSIs fully applied EC declaration of verification + National declaration of verification			EC verification procedure of ENE subsystem, conformity to: - HS ENE TSI - SRT TSI (energy part) (does not include parts covered by specific cases) EC certificate of verification + technical file	Verification procedure for ENE subsystem (based on national rules notified under Art. 17 of ID) for: - open points - specific cases National certificate of verification + technical file	



Table 7: Upgrading (with a new authorisation for placing in service) from conventional to high speed of INF and CCS subsystems of an existing line and its electrification

	Applicant	Notified bodies			Designated bodies	Member State authorities
		NoBo for INF	NoBo for CCS	NoBo for ENE		
2. Authorisation and placing in service	Before placing in service: <div style="border: 1px solid black; padding: 2px; width: fit-content;"> EC declarations National declarations Risk assessment report </div>					NSA: Checking technical compatibility and safe integration (Art. 15(1), (2) of ID) <div style="border: 1px solid black; padding: 2px; width: fit-content;"> Authorisation for placing in service </div>
	IM SMS update PLACING IN SERVICE					
3. Subsystem in service	Operation and maintenance according to, inter alia, provisions of the applied TSI.					NSA: Checking in the context of supervision of safety authorisation (Art. 15(3) of ID and Art. 11 of SD)



6. NEW FREIGHT WAGON

- 6.1. This example shows a case of building a new freight wagon. The TSIs do not include open points (theoretical example), and there are no specific cases applicable. There are no derogations.
- 6.2. In this case, the structural subsystem subject to verification is 'Rolling stock', and the applicable TSIs are CR WAG and Noise TSI (both of which require application of the 'old' SB+SD, SB+SF or SH2 modules). The TSIs have to be applied in full.

Table 8: Freight wagon

	Applicant	Notified body for RST	NSA
1. Project stage	RST subsystem - Design - Production - Final testing TSIs fully applied <div style="border: 1px solid black; padding: 2px; display: inline-block;">EC declaration of verification</div>	EC verification procedure of RST subsystem, conformity to: - CR WAG TSI - CR RST Noise TSI <div style="border: 1px solid black; padding: 2px; display: inline-block;">EC certificate of verification + technical file</div>	
2. Authorisation and placing in service	Before placing in service: <div style="border: 1px solid black; padding: 2px; display: inline-block;">EC declaration Risk assessment report</div> IM SMS update PLACING IN SERVICE		Checking technical compatibility and safe integration (Art. 15(1), (2) of ID) <div style="border: 1px solid black; padding: 2px; display: inline-block;">Authorisation for placing in service</div>
3. Subsystem in service	Operation and maintenance according to, inter alia, provisions of the applied TSI.		Checking in the context of supervision of safety certificates (Art. 15(3) of ID* and Art. 10 of SD)

7. NEW HIGH-SPEED MULTIPLE UNIT

7.1. New high-speed multiple unit (without open points, specific cases and derogations)

7.1.1. This example shows a case of building a new high-speed multiple unit for use on both high-speed and conventional lines. The TSIs do not include open points (theoretical example), and there are no specific cases applicable. There are no derogations.

7.1.2. In this case, the structural subsystems subject to verification and the TSIs applicable to them are:

- Rolling Stock
 - HS RST TSI (which requires application of the 'old' SB+SD or SB+SF or SH2 modules)
 - CR LOC&PAS TSI (which requires application of the 'new' SB+SD or SB+SF or SH1 modules)
 - CR RST Noise TSI (which requires application of the 'old' SB+SD or SB+SF or SH2 modules)
 - Persons with Reduced Mobility TSI, Rolling Stock subsystem part (which requires application of the 'old' SB+SD or SB+SF or SH2 modules)
 - Safety in Railway Tunnels TSI, Rolling Stock subsystem part (which requires application of the 'old' SB+SD or SB+SF or SH2 modules)
- Onboard Control Command and Signalling
 - HS CCS TSI onboard equipment part (which requires application of the 'old' SB+SD or SB+SF or SH2 modules)
 - CR CCS TSI onboard equipment part (which requires application of the 'old' SB+SD or SB+SF or SH2 modules)

The TSIs are applicable in full.

Table 9: New HS multiple unit (without open points, specific cases and derogations)

	Applicant	Notified bodies		NSA
		NoBo for RST	NoBo for CCS	
1. Project stage	RST subsystem - Design - Production - Final testing TSIs applied in full EC declaration of verification	EC verification procedure for RST subsystem, conformity to: - HS RST TSI - CR LOC&PAS TSI - CR RST Noise TSI - PRM TSI (RST part) - SRT TSI (RST part) EC certificate of verification + technical file		
	CCS subsystem - Design - Production - Final testing TSIs applied in full EC declaration of verification		EC verification procedure of CCS subsystem, conformity to: - HS CCS TSI (onboard part) - CR CCS TSI (onboard part) EC certificate of verification + technical file	
2. Authorisation and placing in service	Before placing in service: EC declarations Risk assessment report RU SMS update PLACING IN SERVICE			Checking technical compatibility and safe integration (Art 15(1), (2) of ID) Authorisation for placing in service



Table 9: New HS multiple unit (without open points, specific cases and derogations)

	Applicant	Notified bodies		NSA
		NoBo for RST	NoBo for CCS	
3. Subsystem in service	Operation and maintenance according to, inter alia, provisions of the applied TSI.			Checking in the context of supervision of safety certificates (Art. 15(3) of ID and Art. 10 of SD)



7.2. New high-speed multiple unit (with open points, specific cases and derogations)

7.2.1. This example shows a case of building a new high-speed multiple unit for use on both high-speed and conventional lines. The TSIs include open points, and there are applicable specific cases. There are also derogations.

7.2.2. In this case, the structural subsystems subject to verification and the TSIs applicable to them are:

- Rolling stock
 - HS RST TSI (which requires application of the 'old' SB+SD or SB+SF or SH2 modules)
 - CR LOC&PAS TSI (which requires application of the 'new' SB+SD or SB+SF or SH1 modules)
 - CR RST Noise TSI (which requires application of the 'old' SB+SD or SB+SF or SH2 modules)
 - Persons with Reduced Mobility TSI, Rolling Stock subsystem part (which requires application of the 'old' SB+SD or SB+SF or SH2 modules)
 - Safety in Railway Tunnels TSI, Rolling Stock subsystem part (which requires application of the 'old' SB+SD or SB+SF or SH2 modules)
- Onboard Control Command and Signalling
 - HS CCS TSI onboard equipment part (which requires application of the 'old' SB+SD or SB+SF or SH2 modules)
 - CR CCS TSI onboard equipment part (which requires application of the 'old' SB+SD or SB+SF or SH2 modules)

The TSIs are applicable in full, except where derogation according to Article 9 of the Interoperability Directive has been granted.

Table 10: New HS multiple unit (with open points, specific cases and derogations)

	Applicant	Notified bodies		Designated bodies	NSA
		NoBo for RST	NoBo for CCS		
1. Project stage	RST subsystem - Design - Production - Final testing TSIs applied in full, except where derogation has been granted <div style="border: 1px solid black; padding: 2px;"> EC declaration of verification + National declaration of verification </div>	EC verification procedure for RST subsystem, conformity to: - HS RST TSI - CR LOC&PAS TSI - CR RST Noise TSI - PRM TSI (RST part) - SRT TSI (RST part) (does not include parts covered by specific cases or derogation) <div style="border: 1px solid black; padding: 2px;"> EC certificate of verification + technical file </div>		Verification procedure for RST subsystem (based on national rules notified under ID*) for: - open points - specific cases - derogations <div style="border: 1px solid black; padding: 2px;"> National certificate of verification + technical file </div>	
	CCS subsystem - Design - Production - Final testing TSIs applied in full, except where derogation has been granted <div style="border: 1px solid black; padding: 2px;"> EC declaration of verification + National declaration of verification </div>	EC verification procedure of CCS subsystem, conformity to: - HS CCS TSI (onboard part) - CR CCS TSI (onboard part) (does not include parts covered by specific cases or derogation) <div style="border: 1px solid black; padding: 2px;"> EC certificate of verification + technical file </div>		Verification procedure for CCS subsystem (based on national rules notified under Art. 17 of ID*) for: - open points - specific cases - derogation <div style="border: 1px solid black; padding: 2px;"> National certificate of verification + technical file </div>	



Table 10: New HS multiple unit (with open points, specific cases and derogations)

	Applicant	Notified bodies		Designated bodies	NSA
		NoBo for RST	NoBo for CCS		
2. Authorisation and placing in service	Before placing in service: <div style="border: 1px solid black; padding: 2px;"> <i>EC declarations</i> <i>National declarations</i> <i>Risk assessment report</i> </div>				Checking technical compatibility and safe integration (Art. 15(1), (2) of ID)
	RU SMS update PLACING IN SERVICE				Authorisation for placing in service
3. Subsystem in service	Operation and maintenance according to, inter alia, provisions of the applied TSI.				Checking in the context of supervision of safety certificates (Art. 15(3) of ID* and Art. 10 of SD)

8. UPGRADING OR MODERNISATION OF A HIGH-SPEED MULTIPLE UNIT

8.1. This example shows a case of upgrading or modernisations of an existing high-speed multiple unit. The rolling stock and onboard control – command and signalling subsystems of the unit are being upgraded. The TSIs include open points, and there are applicable specific cases. There are no derogations.

8.2. In this case, the structural subsystems subject to verification and the TSIs applicable to them are:

- Rolling Stock
 - HS RST TSI (which requires application of the ‘old’ SB+SD or SB+SF or SH2 modules)
 - CR LOC&PAS TSI (which requires application of the ‘new’ SB+SD or SB+SF or SH1 modules)
 - CR RST Noise TSI (which requires application of the ‘old’ SB+SD or SB+SF or SH2 modules)
 - Persons with Reduced Mobility TSI, Rolling Stock subsystem part (which requires application of the ‘old’ SB+SD or SB+SF or SH2 modules)
 - Safety in Railway Tunnels TSI, Rolling Stock subsystem part (which requires application of the ‘old’ SB+SD or SB+SF or SH2 modules)
- Onboard Control Command and Signalling
 - HS CCS TSI onboard equipment part (which requires application of the ‘old’ SB+SD or SB+SF or SH2 modules)
 - CR CCS TSI onboard equipment part (which requires application of the ‘old’ SB+SD or SB+SF or SH2 modules)



Table 11: Upgrading or modernisations of a HS multiple unit (with open points and specific cases)

	Applicant	Notified bodies		Designated bodies	Member State authorities
		NoBo for RST	NoBo for CCS		
0. Preliminary stage	Project definition - RST upgrading or modernisation - CCS upgrading or modernisation <div style="border: 1px solid black; padding: 2px;">File describing the project</div>				Examination of the file describing the project and the implementation strategy of the applicable TSIs, and deciding if new authorisation is needed for RST and CCS and if yes, whether the TSIs are to be applied fully or partly (Art. 20 of ID).
1. Project stage	RST subsystem - Design - Production - Final testing TSIs applied according to the decision of the MS <div style="border: 1px solid black; padding: 2px;">EC declaration of verification + National declaration of verification</div>	EC verification procedure for RST subsystem, conformity to: - HS RST TSI - CR LOC&PAS TSI - CR RST Noise TSI - PRM TSI (RST part) - SRT TSI (RST part) (does not include parts covered by specific cases or where TSIs are not applied) <div style="border: 1px solid black; padding: 2px;">EC certificate of verification + technical file</div>		Verification procedure for RST subsystem (based on national rules notified under ID) for: - open points - specific cases - parts not covered by the TSIs according to MS decision (Art 20 of ID) <div style="border: 1px solid black; padding: 2px;">National certificate of verification + technical file</div>	

Table 11: Upgrading or modernisations of a HS multiple unit (with open points and specific cases)

	Applicant	Notified bodies		Designated bodies	Member State authorities
		NoBo for RST	NoBo for CCS		
	CCS subsystem - Design - Production - Final testing TSIs applied in full, except where derogation has been granted <div style="border: 1px solid black; padding: 2px; margin-top: 5px;"> EC declaration of verification + National declaration of verification </div>		EC verification procedure of CCS subsystem, conformity to: - HS CCS TSI (onboard part) - CR CCS TSI (onboard part) (does not include parts covered by specific cases or where TSIs are not applied) <div style="border: 1px solid black; padding: 2px; margin-top: 5px;"> EC certificate of verification + technical file </div>	Verification procedure for CCS subsystem (based on national rules notified under Art. 17 of ID) for: - open points - specific cases - parts not covered by the TSIs according to MS decision (Art 20 of ID) <div style="border: 1px solid black; padding: 2px; margin-top: 5px;"> National certificate of verification + technical file </div>	
2. Authorisation and placing in service	Before placing in service: <div style="border: 1px solid black; padding: 2px; margin-top: 5px;"> EC declarations National declarations Risk assessment report </div> RU SMS update PLACING IN SERVICE				Checking technical compatibility and safe integration (Art. 15(1), (2) of ID) <div style="border: 1px solid black; padding: 2px; margin-top: 5px;"> Authorisation for placing in service </div>
3. Subsystem in service	Operation and maintenance according to, inter alia, provisions of the applied TSI.				Checking in the context of supervision of safety certificates (Art. 15(3) of ID* and Art. 10 of SD)

ABBREVIATIONS

Table 12: Abbreviations

Term	Definition (Reference)
CCS	Command Control and Signalling
CR	Conventional Rail
ENE	Energy
ID	Interoperability Directive
IM	Infrastructure Manager
INF	Infrastructure
LOC&PAS	Locomotives and Passenger Rolling Stock
MS	Member State
NoBo	Notified Body
PRM	Persons with Reduced Mobility
RST	Rolling Stock
RU	Railway Undertaking

Table 12: Abbreviations

Term	Definition (Reference)
SD	Safety Directive
SMS	Safety Management system
SRT	Safety in Railway Tunnels
TSI	Technical Specification for Interoperability
WAG	Freight Wagons