

New transition regime

TSIs LOC&PAS, PRM, NOI, WAG, CCS

24.10.2023 | Webinar



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This presentation aims to

- Inform on the significant change in the implementation of the **TSIs LOC&PAS, WAG, PRM, NOI and CCS TSIs**.
- Explain the key principles and highlight the advantages of the new scheme.
- Explain its impact on EC Certification of Subsystems and Interoperable Constituents.
- Present general information and answer to series of questions relative to the application of the TSIs.

Questions received at TSI-QA-2023@era.europa.eu



Many can be summarized as:

- How is my project impacted?
- Will I need to move to the latest TSIs?

New rolling stock type projects

New rolling Stock type shall comply with the TSIs in force.

TSIs are applicable to all Rolling stock placed on the market after their date of application
except ongoing projects

- **TSI WAG 7.1:**

- This TSI is applicable to the subsystem ‘rolling stock — freight wagons’ within the scope set out in its points 1.1, 1.2 and 2.1, which are placed on the market after the date of application of this TSI, except where point 7.1.1 ‘Application to ongoing projects’ applies.

- **TSI LOC&PAS 7.1.1.1:**

- This TSI is applicable to all units of rolling stock in its scope which are placed on the market after the date of application set out in Article 12, except where point 7.1.1.2 ‘Application to ongoing projects’ or point 7.1.1.3 ‘Application to special vehicles, such as on-track machines’ below apply.

Ongoing rolling stock projects

For projects in phase A (or B) at the EIF of the **TSIs 2023**, it is possible to continue with the set of TSIs defined at the beginning of phase A, or to migrate to the new set of TSIs

- **TSI WAG 7.1.1:**
 - The application of this TSI applicable from 28 September 2023 **is not mandatory for projects that, on that date, are in phase A or phase B** as defined in points 7.2.3.1.1 and 7.2.3.1.2 of the ‘previous TSI’ (i.e. this Regulation, as amended by Commission Implementing Regulation (EU) 2020/387).
- **TSI LOC&PAS 7.1.1.2:**
 - The application of the version of this TSI applicable from 28 September 2023 **is not mandatory for projects that, on that date, are in phase A or phase B** as defined in point 7.1.3.1 of the ‘previous TSI’ (i.e. this Regulation, as amended by Commission Implementing Regulation (EU) 2020/387).

Ongoing rolling stock projects

For projects in phase A (or B) that continue with the set of TSIs defined at the beginning of phase A, permissible to use the revised TSI either totally or for particular sections

- **TSI WAG 7.1.1:**

- Without prejudice to Appendix A, Table A.2, the application of the requirements of Chapters 4, 5, 6 to projects referred in point (1) is possible on a voluntary basis.

- **TSI LOC&PAS 7.1.1.2:**

- Without prejudice to Appendix L, Table L.2, the application of the requirements of Chapters 4, 5, and 6 to projects referred in point (1) is possible on a voluntary basis.

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- What are the main changes in TSIs requirements (chapters 4,5,6)?

Changes are listed and categorised in the TSIs

For changes not listed in the specific Appendix, compliance with the TSI in its version applicable before 28 September 2023 is deemed equivalent to compliance with the new TSI

- **TSI WAG Appendix A:**

- For other TSI points than these listed in Table A.1 and Table A.2, compliance with the ‘previous TSI’ (i.e. this Regulation, as amended by Commission Implementing Regulation (EU) 2020/387) imply compliance with this TSI applicable from 28 September 2023.

- **TSI LOC&PAS Appendix L:**

- For other TSI points than these listed in Table L.1 and Table L.2, compliance with the ‘previous TSI’ (i.e. this Regulation, as amended by Implementing Regulation (EU) 2020/387) imply compliance with this TSI applicable from 28 September 2023

Changes are listed in the TSIs

Example: TSI LOC&PAS Appendix L

Changes of requirements and transition regimes

For other TSI points than these listed in Table L.1 and Table L.2, compliance with the ‘previous TSI’ (i.e. this Regulation, as amended by Implementing Regulation (EU) 2020/387) imply compliance with this TSI applicable from 28 September 2023.

Table L.1

Transition regime of 7 years

TSI point(s)	TSI point(s) in previous TSI	Explanation of the TSI change
4.2.2.5 (7)	4.2.2.5 (7)	Evolution of the specification referenced in Appendix J-1 index [3]
4.2.2.10 (1)	4.2.2.10 (1)	Additional requirements
4.2.3.2.1 (2)	4.2.3.2.1 (2)	Change of the requirement
4.2.3.7	4.2.3.7	Change of the requirements

Changes are listed in the TSIs

Example: TSI LOC&PAS Appendix L

Changes of requirements and transition regimes

For other TSI points than these listed in Table L.1 and Table L.2, compliance with the ‘previous TSI’ (i.e. this Regulation, as amended by Implementing Regulation (EU) 2020/387) imply compliance with this TSI applicable from 28 September 2023.

Table L.2

Specific transition regime

TSI point(s)	TSI points(s) in previous version	Explanation on TSI change	Transition regime			
			Design phase not started	Design phase started	Production phase	units in operation
Points referring to the specification referenced in Appendix J-2, index [B]	4.2.4.4.1, 4.2.5.3.4, 4.2.5.5.6, 4.2.8.2.9.8, 4.2.10.4.2	Train interface functions specified between ETCS onboard and rolling stock are identified end to end including provisions on EC verification	For new train interface functions identified in index 7, transition regimes are defined in Appendix B, Table B.1 – ETCS system version of TSI CCS. For train interface functions not modified in index 7, transition regimes are defined in Appendix B, Table B1 – partial fulfilment of TSI CCS			

Changes are listed in the TSIs


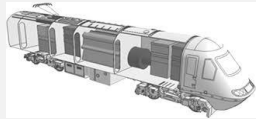
Same principle applies:

- TSI WAG Appendix A
- TSI LOC&PAS Appendix L
- TSI PRM Appendix P
- TSI NOI Appendix H
- TSI CCS Appendix B


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- What are the definition ?
- What are the impacts to NoBo assessment?



Design phase: The design phase is the period starting once a notified body, which is responsible for EC verification, is contracted by the applicant and ending when the EC type or design examination certificate is issued.



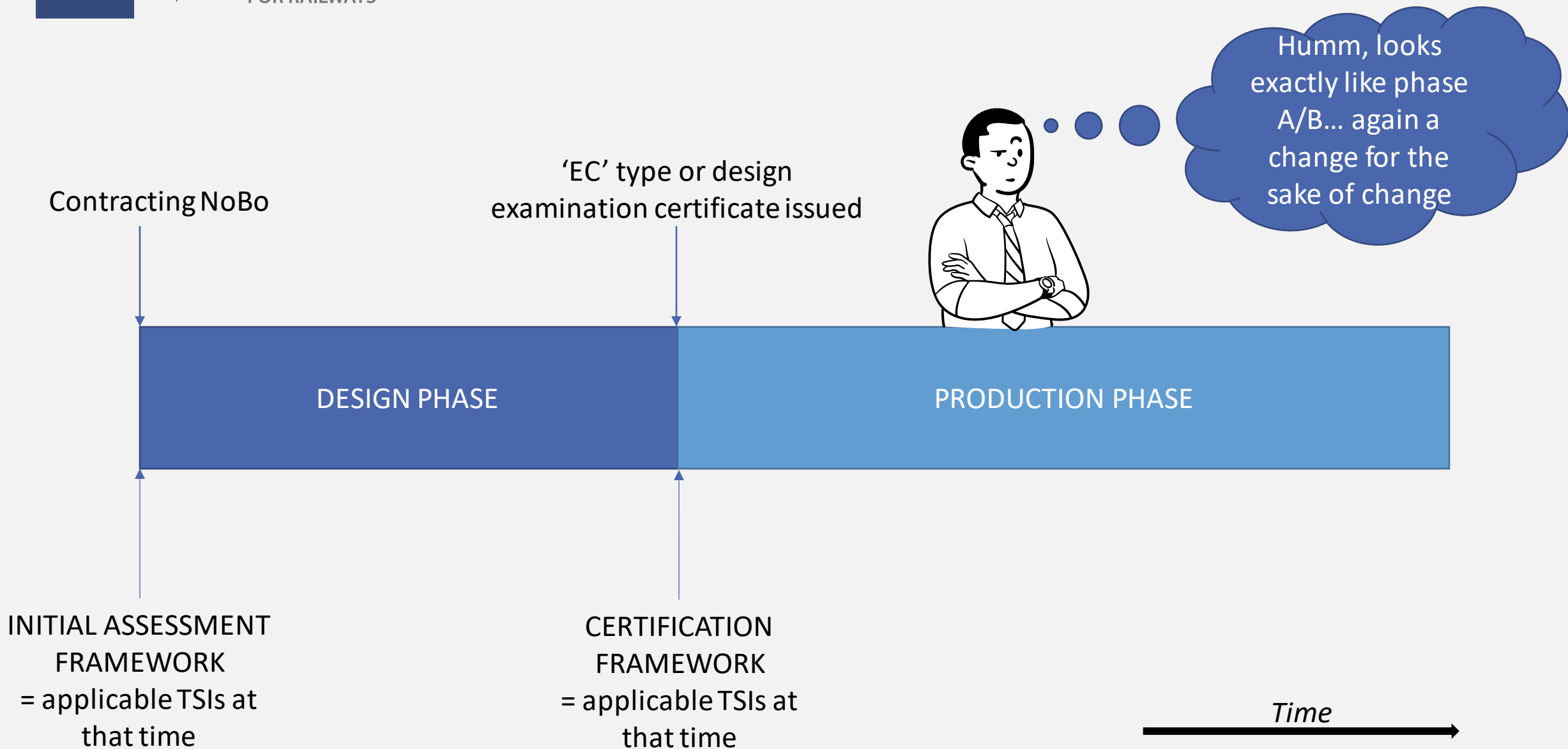
Production phase: The production phase is the period during which rolling stock subsystems may be placed on the market on the basis of an EC declaration of verification referring to a valid EC type or design examination certificate.



Initial assessment framework: The initial assessment framework is the set of TSIs (i.e. this TSI, TSI NOI and TSI PRM) applicable at the beginning of the design phase when the notified body is contracted by the applicant.

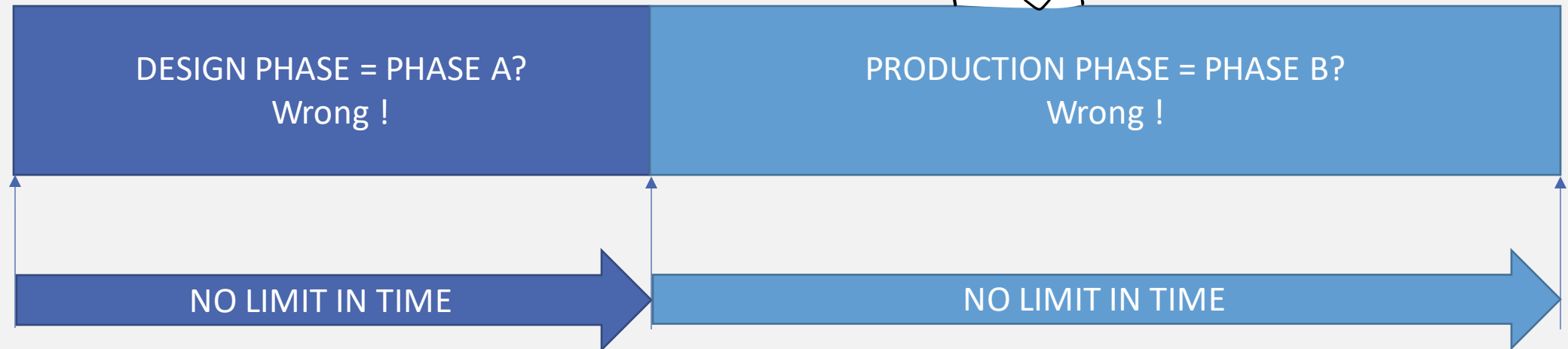
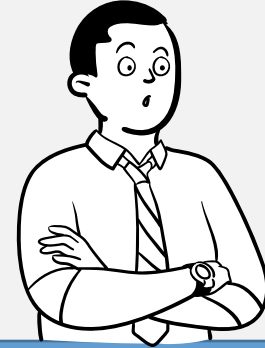
Certification framework: The certification framework is the set of TSIs (i.e. this TSI, the TSI NOI and the TSI PRM) applicable at the time of issuing the EC type or design examination certificate. It is the initial assessment framework amended with the revisions of TSIs that came into force during the design phase.

Definitions pictured on a project

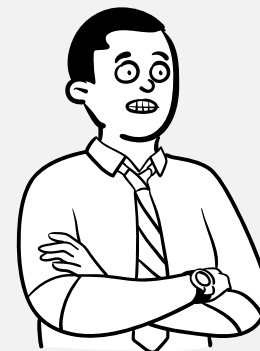
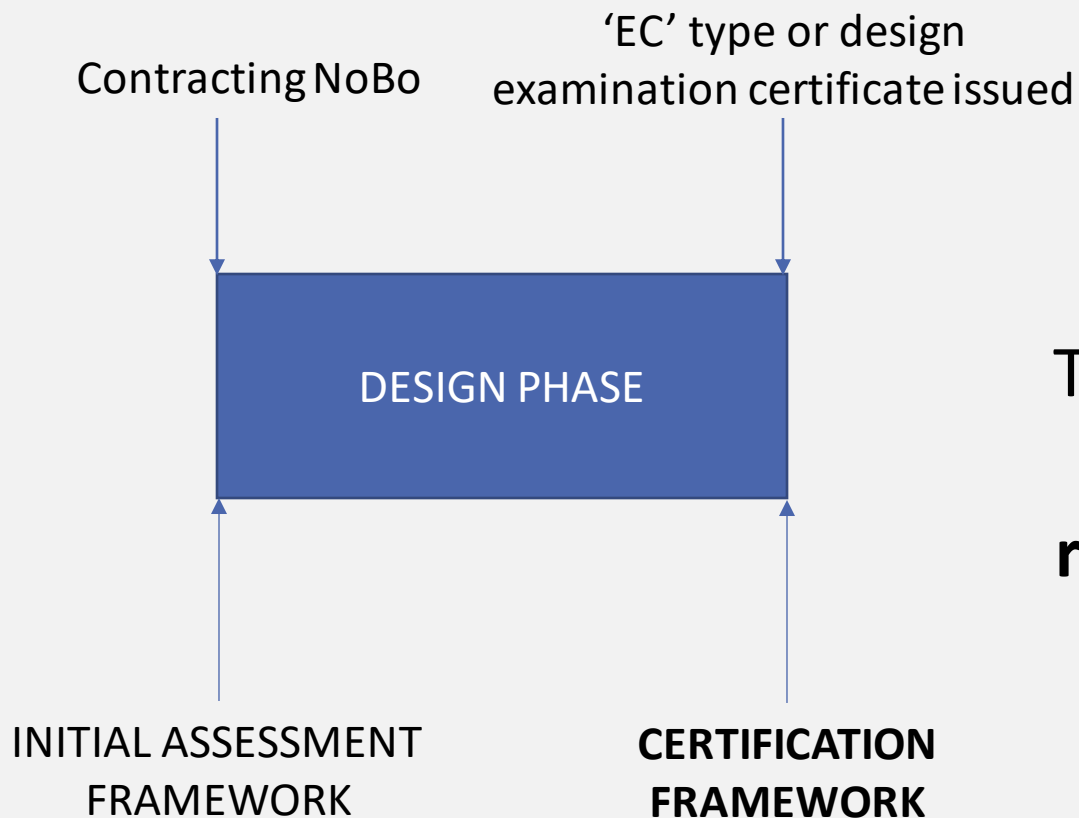


Why introducing new terms ?

1st change compared to phase A / phase B



Issuing the 'EC' type or design examination certificate 2nd change compared to phase A / phase B



The notified body shall issue the **EC type or design examination certificate referring to the certification framework**

Reminder: exception for this revision

Issuing the 'EC' type or design examination certificate Example WAG 7.2.3.1.2 (LOC&PAS 7.1.3.1.2 – CCS 7.2.4.1.2)

The transition is specified for each TSI change
Somehow, the former 4 (WAG) or 7 (LOC&PAS) years phase A is included in the TSIs

The notified body shall issue the EC type or design examination certificate referring to the certification framework.

When a revision of this TSI or of the TSI NOI comes into force during the design phase, the notified body shall issue the EC type or design examination certificate in accordance with the following rules:

—**For changes in the TSIs that are not referenced in Appendix A, conformity with the initial assessment framework leads to conformity to the certification framework. The Notified Body shall issue the EC type or design examination certificate referring to the certification framework without additional assessment.**

—**For changes in the TSIs that are referenced in Appendix A, their application is mandatory in accordance with the transition regime laid down in that Appendix. During the transition period, the Notified Body may issue the EC type or design examination certificate referring to the certification framework without additional assessment.** The Notified Body shall list in the EC type or design examination certificate all the points assessed in accordance with the initial assessment framework.

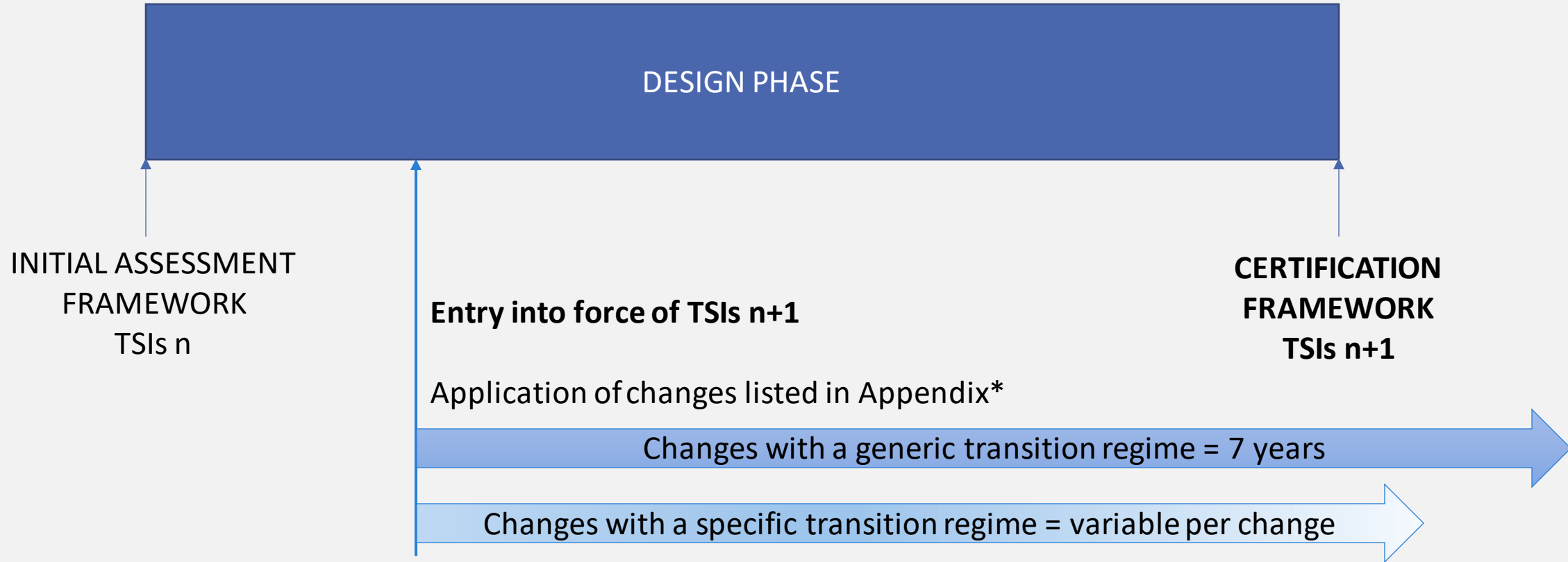
Assessment according to the certification framework

Summary

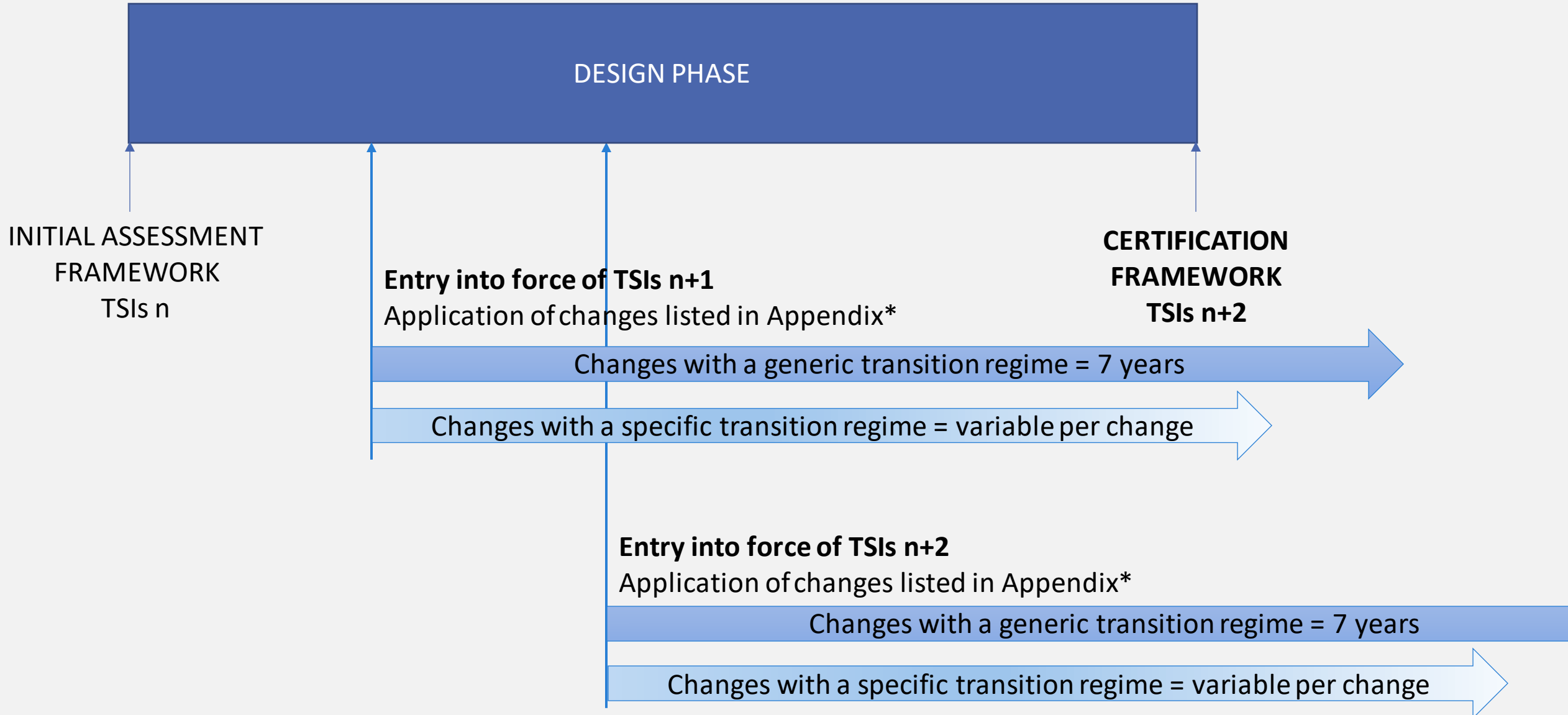
- With amendment 2023, TSIs changes are listed and categorised.
- Compliance with the previous TSI is deemed equivalent to compliance with the new TSI, except for changes listed in Appendix*.
- 2 types of changes :
 - Changes with a **generic transition regime** of 7 years:
 - Projects already in design phase shall comply with the requirement of this TSI from **EIF + 7 years**.
 - Projects in production phase and rolling stock in operation **are not affected** by those TSI requirements.
 - Changes with a **specific transition regime**:
 - Projects already in design phase, projects in production phase, and units in operation **shall comply with the requirements** of this TSI in accordance with the respective transition regime

* Appendix A in WAG TSI, B in CCS, L in LOC&PAS, P in PRM, H in NOI

What happens when new TSIs enter into force during the design phase?



What happens when several new TSIs enter into force during the design phase?



Use of most recent version of TSI during design phase WAG 7.2.3.1.2 – LOC&PAS 7.1.3.1.2 – CCS 7.2.4.1.2

- It is always permissible (but not mandatory) to use a most recent version of any TSI, **either totally or for particular points**, unless explicitly otherwise specified in the revision of these TSIs.
- If application **limited** to particular points, **Applicant justify and document** that applicable requirements remain consistent, and this has to be **approved by the NoBo**.

Questions received at TSI-QA-2023@era.europa.eu



- What means transition regime of 7 years ?
- What means specific transition regime?

Why 2 transition regimes how are they determined?

- **Changes with no impact:** TSI point for which the conformity with the previous version of that TSI ensures in all cases the conformity with the new version.
- **Generic transition regime:** TSI point for which the conformity with the previous version of that TSI does not lead to conformity with the new version.
- **Specific transition regime:** TSI point for which the conformity with the previous version of that TSI does not ensure the conformity with the new version and that:
 - fixes a critical issue concerning safety or technical compatibility
 - addresses a policy objective in a proportionate manner

Why 2 transition regimes - Applicability

Example: TSI LOC&PAS Appendix L

Changes with a generic transition regime of 7 years:

For TSI points listed in Table L.1, compliance with the previous TSI does not imply compliance with the version of this TSI applicable from 28 September 2023.

Projects already in design phase on 28 September 2023 shall comply with the requirement of this TSI from 28 September 2030.

Projects **in production phase and rolling stock in operation are not affected** by the TSI requirements listed in Table L.1

Table L.1

Transition regime of 7 years

TSI point(s)	TSI point(s) in previous TSI	Explanation of the TSI change
4.2.2.5 (7)	4.2.2.5 (7)	Evolution of the specification referenced in Appendix J-1 index [3]
4.2.2.10 (1)	4.2.2.10 (1)	Additional requirements
4.2.3.2.1 (2)	4.2.3.2.1 (2)	Change of the requirement
4.2.3.7	4.2.3.7	Change of the requirements

Why 2 transition regimes - Applicability

Example: TSI LOC&PAS Appendix L

Changes with a specific transition regime

For TSI points listed in table L.2, compliance with the previous TSI does not imply compliance with this TSI applicable from 28 September 2023.

Projects already in design phase on 28 September 2023, projects in production phase, and units in operation shall comply with the requirement of this TSI in accordance with the respective transition regime set out in Table L.2 starting from 28 September 2023.

Table L.2

Specific transition regime

TSI point(s)	TSI points(s) in previous version	Explanation on TSI change	Transition regime			
			Design phase not started	Design phase started	Production phase	units in operation
Points referring to the specification referenced in Appendix J-2, index [B]	4.2.4.4.1, 4.2.5.3.4, 4.2.5.5.6, 4.2.8.2.9.8, 4.2.10.4.2	Train interface functions specified between ETCS onboard and rolling stock are identified end to end including provisions on EC verification	For new train interface functions identified in index 7, transition regimes are defined in Appendix B, Table B.1 – ETCS system version of TSI CCS. For train interface functions not modified in index 7, transition regimes are defined in Appendix B, Table B1 – partial fulfilment of TSI CCS			

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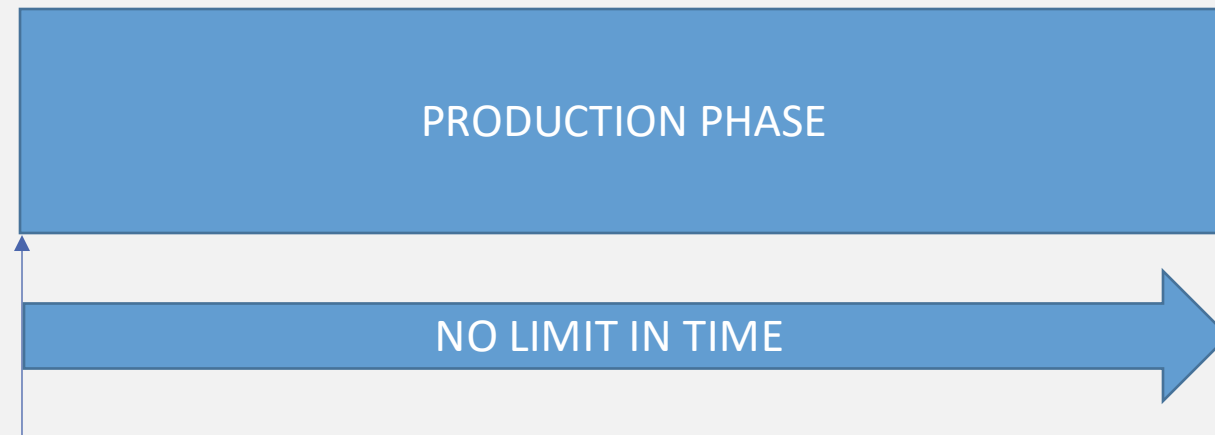


- What is the impact to 'EC' Certificate?
- Does the 'EC' type certificate has still validity end?
- Impact of TSIs to the QMS approval?

Validity of the EC type or design examination certificate

CCS 7.2.4.1.3 - LOC&PAS 7.1.3.1.3 – WAG 7.2.3.1.3

Only the changes to the TSIs with a specific transition regime can apply to vehicles in production phase or to vehicles in operation.



When a revision of this TSI comes into force, the EC type or design examination certificate for the **subsystem remains valid** unless it is required to be revised according to the specific transition regime of a TSI change as defined in Appendix B of this TSI.

EIF of new TSIs during production phase: Impact to the QMS approval (e.g. for module SD)

'EC' type or design
examination certificate issued
TSIs n

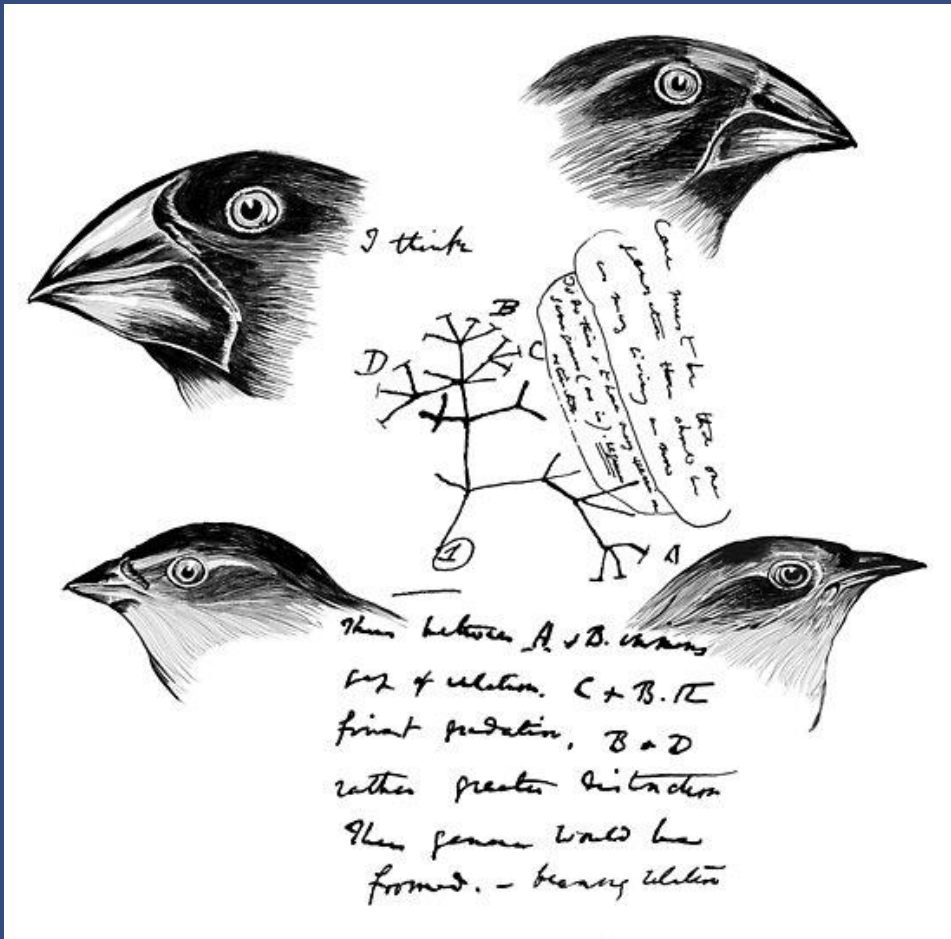
SD certificate refers to Type certificate
that may refer to **TSIs n or TSIs n+1**



Entry into force of TSIs n+1

- Changes with a generic transition regime don't apply to vehicles in production
- Changes with a specific transition regime may require to deliver a new type certificate

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- How transition regimes apply to Type, Variants and Versions?

For all type variant(s) and type version(s), **the design phase is considered starting at the same time as for the Type.**

The **Initial Assessment Framework** of the variants/versions is the **same** as for the Type.

- LOC&PAS 7.1.3.1.1 – WAG 7.2.3.1.1
- **A design phase can cover a type and one or several type variant(s) and type version(s).** For all type variant(s) and type version(s), the design phase is considered as starting at the same time as for the main type.
- CCS TSI 7.2.4.1.1
- **A design phase covers the CCS subsystem integrated in a vehicle type and one or several type variant(s) and type version(s).** For all type variant(s) and type version(s), the design phase is considered as starting at the same time as for the main type.



Questions received at TSI-QA-2023@era.europa.eu

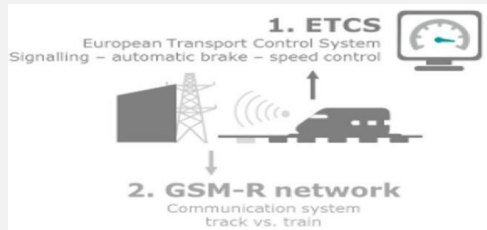
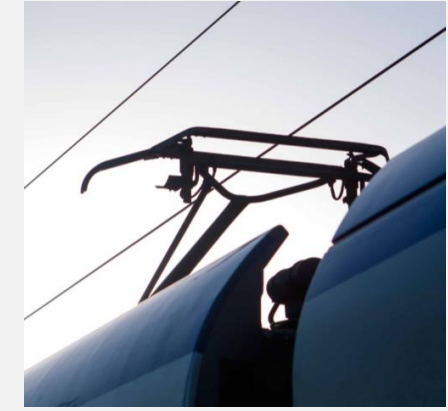
- How transition regimes apply to RST Interoperable constituents?

Recall: transition regimes before 2023 Interoperability Constituents

TSIs LOC&PAS, PRM and WAG contain specific provisions on validity of certificates:

- Type or design examination or suitability for use EC certificate is valid for a period of **5 years for ICs defined in LOC&PAS and PRM** and **10 years for ICs defined in WAG**.
- During this period “new constituents” of the same type are permitted to be placed on the market without a new type assessment, **unless explicitly otherwise specified in the revision of a TSI**.

TSI CCS : No similar provisions.



How does the transition regime apply to ICs?

- The **transitions** defined for requirements in Appendix* **apply at the level of the subsystems, but may impact ICs.** When a requirement of Appendix* impacts an IC, depending on the transition regime, the applicant can either :
 - use an IC certified vs the previous TSI or
 - an IC certified vs the new TSI.
- In any case, when the IC type certificate expires, the IC needs to be reassessed vs the TSI in force at that time - see [ERA/OPI/2016-3 - Opinion of the European Union Agency for Railways to the European Commission regarding the question of NB-Rail QC-STR-009 concerning the certification according to withdrawn TSIs | European Union Agency for Railways \(europa.eu\)](#)
- **Only when there is no backward compatibility, an IC certified vs a previous TSI can be used.**

- Unless otherwise explicitly specified in the revision of a TSI, the type or design examination or suitability for use **remains valid even if a revision of TSIs enters into force.**
- During this time, new constituents of the same type are permitted to be placed on the market without a new type assessment.

Example of fitting an IC into a subsystem: 1 - head lamps

- **Head lamps specified in TSI LOC&PAS point 5.3.6:**
 - TSI 2020 refers to EN 15153-1:2013+A1:2016
 - TSI 2023 refers to EN 15153-1:2020
 - The change is not listed in Appendix*, so compliance with TSI 2020 leads in all cases to compliance with TSI 2023
- **IC manufacturer:**
 - Can deliver ICs in conformity to a type compliant with TSI 2020 as long as the certificate is valid (5 years)
 - Once the certificate **has expired, shall assess the head lamp vs the TSI 2023.**
- **Applicant subsystem:**
 - May equip its rolling stock with any of both types of IC

Example of fitting an IC into a subsystem: 2 - interface of the call for aid device

- **Device specified in TSI PRM point 5.3.2.6:**
 - TSI 2020 requires “a sign having a **green or yellow background** and a **white symbol**”
 - TSI 2023 requires “a sign having a **yellow background** contrasting with a **black symbol**”
 - The change is listed in Appendix*, compliance with TSI 2020 doesn’t lead to compliance with TSI 2023
- **IC manufacturer:**
 - Can deliver ICs in conformity to a type compliant with TSI 2020 as long as the certificate is valid (5 years maximum)
 - Once the certificate has expired:
 1. shall assess the call for aid device vs the TSI 2023,
 2. may assess the call for aid device vs the TSI 2020 for subsystems where it will be required (no backward compatibility), with a type validity of 5 years
- **Applicant subsystem when in design phase:**
 - Subsystem may be certified during 7 years with a call for aid device compliant with TSI 2020

CCS TSI Transition Regime

| 24.10.23 | Application Guide – Appendix B



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Questions #1

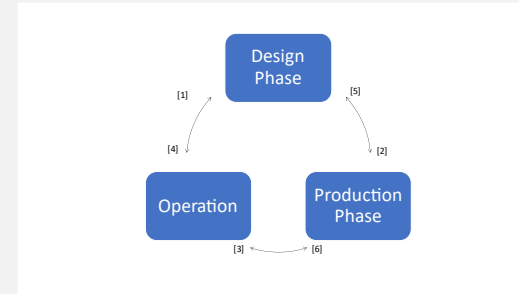
- **Where** are the different transition regimes defined in the CCS TSI?
- How they apply to the **Interoperability Constituents?**
- Where I can find **more information?**



CCS TSI Transition Regime

- Same definition of phases as for the LOC&PAS TSI, to have as much as possible a vehicle approach.

- In the **CCS TSI** the **phases** are defined in **§7.2.4**:
Entry into force 28/09/2023



- Transition regimes** are defined in **Appendix B**:

- Table B1.1 For On-board CCS subsystems
- Table B1.2 For RST CCS subsystems in relation with Train Detection Compatibility
- Table B2 For Trackside CCS subsystems
- Table B3 For Interoperability Constituents

B1. Changes of requirements and transition regimes for On-Board Subsystems

Table B1.1

Transition Regime (*) for CCS On-Board Subsystem

No	TSI point(s)	TSI point(s) in previous version	Explanation on TSI change	Transition regime			
				Design phase started after TSI enters into force	Design phase started before TSI enters into force	Production phase	Vehicle in operation

- Currently working in the **CCS TSI** WP on the update of the **Application Guide** to the new regulation.
Several updates expected **during 2024**.
All inputs received from the sector and the Q&A for the webinars have been considered for the examples

IC Transition Regime

- Rules for IC are defined in **§7.2.4.3**:

7.2.4.3. Interoperability constituents

EC design or type certificates of interoperability constituents already placed on the market based on a previous version of this TSI remain valid even if a revision of this TSI comes into force, unless a requirement is applicable at CCS subsystem level which impacts the interoperability constituent (as specified in Table B1.1 or Table B2 of Appendix B) or unless explicitly otherwise specified in the revision of this TSI within Table B3 of Appendix B.

During this time, these interoperability constituents are permitted to be placed on the market without a new design or type examination.

- Transition period defined for Subsystems is applicable for IC except for the cases specified in Table B.3:

Table B3

Transition regime for CCS Interoperability Constituents

According to point 7.2.4.3 Interoperability constituents transition periods defined for CCS Subsystems are applicable for the Interoperability Constituents unless specified in this table.

Questions #2

- How the transition regimes are applied to the **CCS on-board subsystem**?
- When it is mandatory to **implement ETCS** on-board?
- How is it still possible to apply **set of specs from previous TSI** on the on-board CCS subsystem?
- When it is mandatory to implement **new functionalities**, for example **ATO** on the on-board CCS subsystem?



Examples for ETCS On-Board implementation

2.8.1.4. In example 1, it is assumed that ETCS On-Board is not required (yet) to operate on the network due to availability of Class B systems (Member State did not add additional national requirements according to point 7.4.3) and the applicant intends not to install ETCS On-Board (yet) on a newly built vehicle (assumption: no special vehicle). According to the row 2 of Table B1.1, following implementation rules apply for vehicles being authorised according to Table B1.1:

Example	Design phase started after TSI enters into force (28 September 2023)	Design phase started before TSI enters into force (28 September 2023)	Production phase	Vehicle in operation
1	<p>It is mandatory to implement ETCS On-Board on newly built vehicles.</p> <p>Note: see example 2 which set of specifications is allowed to be used.</p>	<p>It is allowed not to implement ETCS On-Board on newly built vehicle if design phase has ended before 01st January 2028.</p> <p>It is mandatory to implement ETCS On-Board on newly built vehicle if design phase has ended after 01st January 2028.</p> <p>Note: see example 2 which set of specifications is allowed to be used.</p>	<p>It is mandatory to implement ETCS on newly built vehicles from 01st January 2030 (also if these vehicles are part of a (large) series and the first vehicles are already authorised without ETCS On-Board implementation).</p> <p>Note: see example 2 which set of specifications is allowed to be used.</p>	<p>No upgrade is mandated by the CCS TSI 2023/1695.</p>

Examples for ETCS On-Board system versions

2.8.1.5. Context of example 2, it is assumed that ETCS On-Board system version 2.0 (based on set #2 of CCS TSI 2016/919) remains sufficient to operate without any need for implementation of error corrections that could prevent normal service (see section 7.2.10) or without any obligation to implement specific requirements (additional functions, national rules, ...) not specified in set #2 of CCS TSI 2016/919.

2.8.1.6. In example 2, an applicant intends to produce newly built vehicles in series based on an EC declaration of verification referring to a valid EC type or design examination certificate referring to set #2 of CCS TSI 2016/919. According to the column 'production phase' and rows 5 (minimum use of ETCS system version up to 2.1) and row 9 (minimum use of ETCS system version 2.1 based on ETCS B4R1) of Table B1.1, this is possible until 01st January 2030 on newly built vehicles.

Examples for ATO On-Board implementation

If ETCS is installed for first time, and this conditions are met, ATO shall be also implemented.

In any case, any ATO implementation shall follow the TSI specifications.

2.8.1.16. In the first example, it is assumed that ATO GoA2 will be in operation on some lines in the year 2031 and this is notified within RINF/network statement of the year 2026 (notification period of 5 years).

2.8.1.17. If the area of use of a vehicle includes the lines where ATO GoA2 is notified in RINF, following implementation rules apply for vehicles being authorised according to row 12 (ATO On-Board Implementation) of Table B1.1:

Example	Design phase started after TSI enters into force (28 September 2023)	Design phase started before TSI enters into force (28 September 2023)	Production phase	Vehicle in operation
1	<p>Design phase started after 01st January 2026: ATO on-board requirements are directly applicable.</p> <p>Design phase started between 28 September 2023 and before 01st January 2026: ATO on-board requirements are applicable if the design phase is not ended before 01st January 2031;</p>	ATO on-board requirements are applicable if the design phase is not ended within 01st January 2030;	No implementation requirements	No implementation requirements

Questions #3

- How it is possible to use the **set of specs from previous TSI** on the **trackside CCS** subsystem?
- How is the transition regime for **GSM-R** on the trackside from **B1 to B1 MR1**?
- How is the transition regime for the **ERA/ERTMS/033281** v4.0 to v5.0?



ETCS trackside set of specifications

- Transition period for the use the former set of specifications by trackside in **§7.4.1.2:**
- Pre-conditions:
 - **Set #1:** more than 1 000 km or 25% in operation or under construction in the Core Network Corridors before 31 December 2020
 - **Set #2 or #3:** ETCS lines in operation before entry into force (28/09/2023)
- **Conditions:**
 - Set #1: Notify to EC withing two years
 - All cases: **Maintain the infrastructure compatible with TSI complaint on-boards** and apply all necessary **error corrections** as defined in 7.2.10.
 - **Period** for placing in service
 - New projects 7 years (28/09/2030)
 - Upgrade or renewal projects: 10 years (28/09/2033)

GSM-R & TDC trackside

GSM-R B1 MR1

- For GSM-R B1 MR1 no new MI-requirements have been introduced ('MI: Mandatory for Interoperability').
- The principle same principle as for former set of specs applies.

Train Detection Compatibility - ERA/ERTMS/033281 v5.0

- V5 is directly applicable, there are some additional provisions in chapter 7



THANK YOU

Moving Europe towards a sustainable and safe railway system without frontiers.

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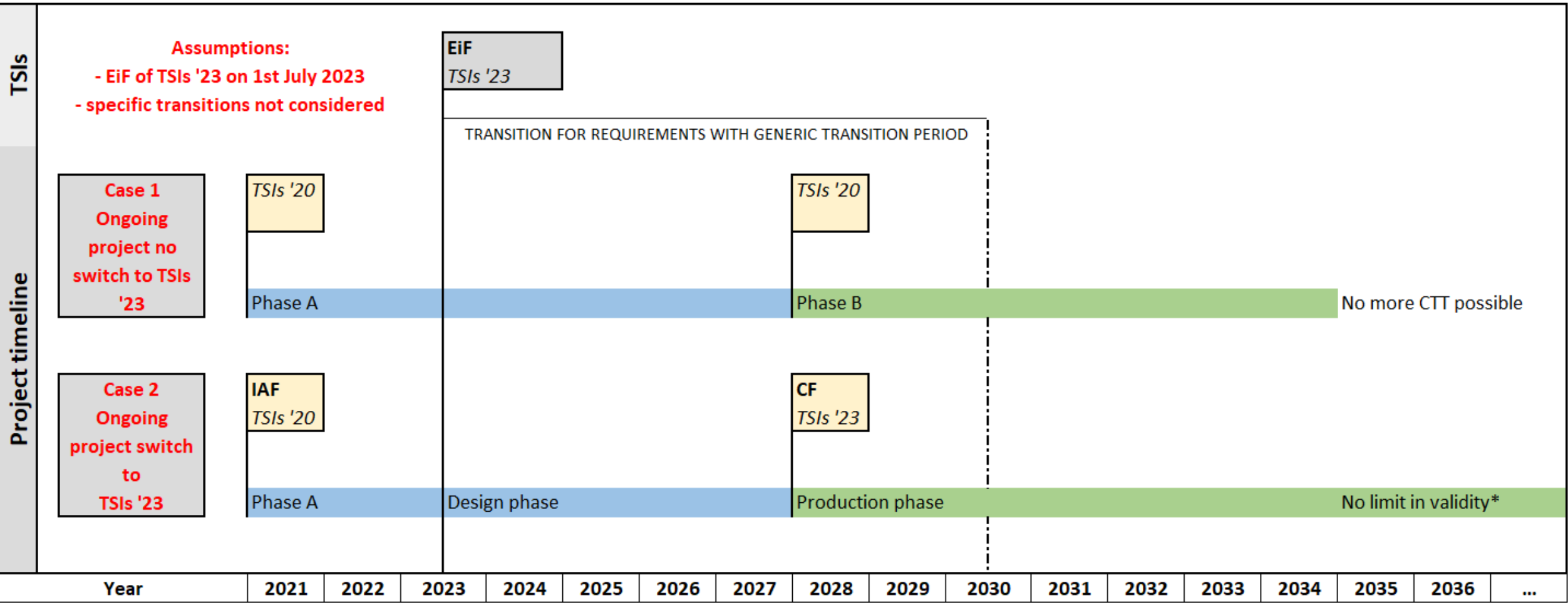


in



Back-up slides

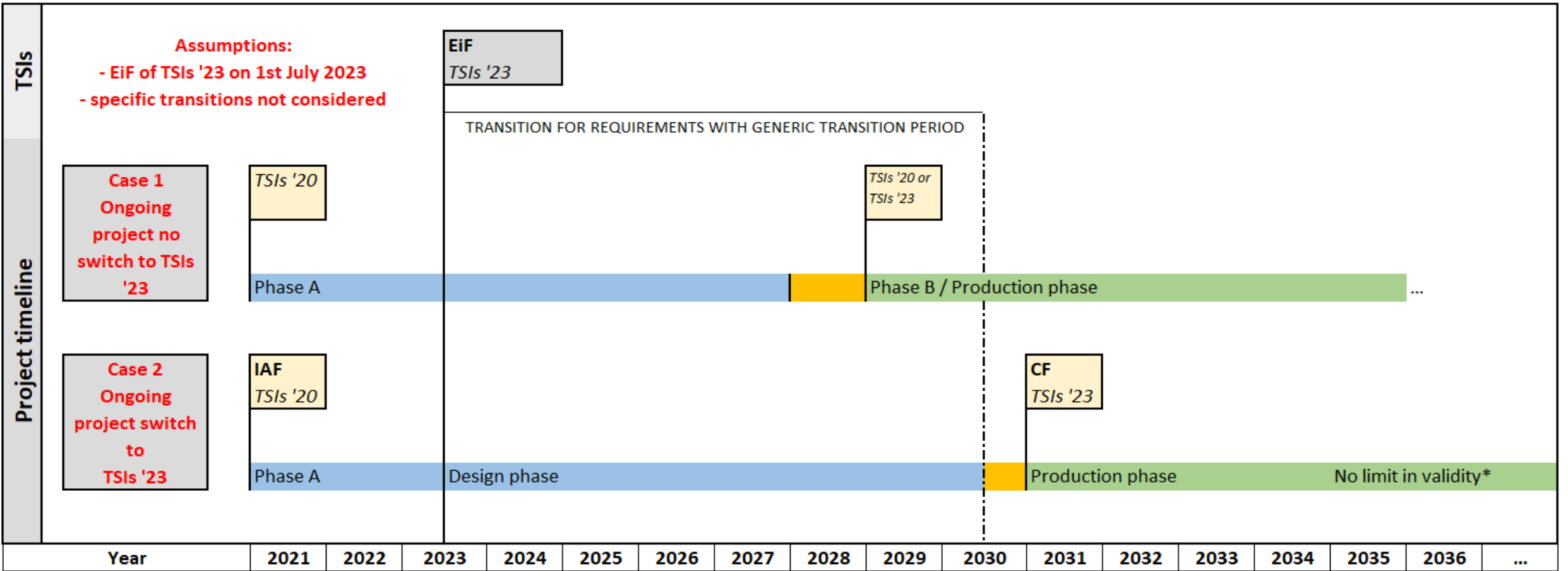
Example : Projects in design phase : switching or not to TSIs 2023



EiF Entry into force
 IAF Initial assessment framework
 CF Certification framework

* Unless required by a change with specific transition

Example: Projects with design phase very long



EIF Entry into force
 IAF Initial assessment framework
 CF Certification framework

* Unless required by a change with specific transition
 Need to apply the latest TSI requirements or ask for a derogation