OPE NTSN revision in response to Regulation (EU) 2019/773

Version:	1.0		
Purpose:	Approval to proceed to consultation		
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Lead industry committee:	Traffic Operation and Management Standards Committee (TOM SC)	**Date:**	07 December 2021

This final business case for change sets out an assessment of the expected impacts from proposed changes to National Technical Specification Notices (NTSNs), to support standards committees and the Department for Transport in making decisions related to these.

Decision

Traffic Operation and Management Standards Committee (TOM SC) is asked to:

DECIDE if the proposed revision of the OPE NTSN is in a suitable state for consultation.

APPROVE that the proposed revision of the OPE NTSN is consulted on.

IDENTIFY any specific organisations or individuals to be included in the consultation.

Proposed documents

Number	Title	Issue
OPE NTSN	Operation and Traffic Management National Technical Specification Notice	2

Superseded documents

Number	Title	Issue
OPE NTSN	Operation and Traffic Management National Technical Specification Notice	N/A

Summary

Background and change

The Operation and Traffic Management (OPE) National Technical Specification Notice (NTSN) was transposed from the OPE Technical Specification for Interoperability (TSI) which applied on 31 December 2020. This was Commission Decision 2012/757 as amended by Regulation (EU) 2015/995 and clauses 4.2.2.1.3.2 and 4.4. from Regulation (EU) 2019/773.

The remainder of Regulation (EU) 2019/773 applied in the EU from June 2021[1]. Unless the OPE TSI amendments made by Regulation (EU) 2019/773 are considered for inclusion in the OPE NTSN, then the OPE NTSN and TSI will differ. These TSI changes have been assessed to form recommendations for where the OPE NTSN should also be changed.

The recommendations are to include amendments from Regulation (EU) 2019/773 in the OPE NTSN where either net benefits or at least no adverse impacts for GB are expected. This means not aligning with the OPE TSI only where there are demonstrable reasons not to.

All individual amendments made to the OPE TSI by Regulation (EU) 2019/773 have been grouped and categorised for assessment and presentation:

- 'C0' are recommended not to be made to the OPE NTSN, as they are not relevant or applicable to GB. These will be recorded as a continuing difference between the OPE NTSN and OPE TSI but are not a divergence from technical requirements.
- 'C1' are recommended to be made to the NTSN as these are not expected to have any impact on the GB rail sector, so can be incorporated to maintain full alignment between the OPE NTSN and TSI documents.
- 'C2' and 'C3' are changes that were initially assessed as potentially having a technical or regulatory impact on the GB rail sector. There are different recommendations depending on the individual amendments. These are summarised in section 2 of this paper. They are a combination of keeping the existing OPE NTSN text, adopting the TSI text and introducing GB specific text.

As a package, the proposed changes are not expected to change existing requirements with any material impacts on GB operational practice. The material changes to the OPE TSI introduced by Regulation (EU) 2019/773 that would require significant changes to GB operational practice, such as route compatibility checks and provision of information through RINF, are not recommended for inclusion in the OPE NTSN.

To supplement the Business Case for Change:

- The approach to the assessment is outlined in **Annex A**.
- The detailed assessment of 'C2' and 'C3' changes with potential for technical or regulatory implications is set out in **Annex B**.
- Further considerations for the assessment are included in **Annex C**.
- All 'C0' changes made by Regulation (EU) 2019/773 that are considered not relevant or applicable to GB are included in **Annex D**.

[1] apart from Appendices A and C which apply from 2024

- All 'C1' changes made by Regulation (EU) 2019/773 that are recommended for inclusion in the NTSN but with no technical or regulatory impact are included in **Annex E**.
- An impact matrix for potential technical and regulatory changes is in **Annex F**.
- A track change version of the proposed OPE NTSN for consultation is in **Annex G** ('*OPE NTSN 2021 Issue 2 Pre-Consultation*').

Industry impact due to changes

Impact areas	Scale of impact	Estimated value £ 000's
A. Legal compliance and assurance	High	Disproportionate to quantify
B. Health, safety and security	Low/None	Negligible
C. Reliability and operational performance	Low/None	Negligible
D. Design and maintenance	Low/None	Negligible
E. People, process and systems	Low/None	Negligible
F. Environment and sustainability	N/A	-
G. Customer experience and industry reputation	N/A	-
H. Trade and competition	Low/None	Negligible
Total value of industry opportunity =		**<£100k**

The standards change contribution to the total value of industry opportunity				
☐ None or low	☐ Minor but useful	☐ Moderate	☐ Important / essential	☑ **Urgent / critical**

Detail

1. What are the objectives associated with this NTSN change?

Objective 1 – Assess the alignment between the UK and EU's operation and traffic management requirements and recommend the rail sector's position on changes to the Secretary of State

1.1 After EU-Exit, the government committed to monitoring changes to EU's Technical Specifications for Interoperability (TSIs) and assessing whether UK's National Technical Specification Notices (NTSNs) should reflect the EU requirements or diverge from these when this is in the best interests of the GB railway system.

1.2 The current OPE NTSN, which has applied since 1 January 2021, retained the technical requirements contained in the OPE TSI that applied on 31 December 2020. This was Commission Decision 2012/757/EU, as amended by:

- Regulation (EU) 2015/995, and
- Regulation (EU) 2019/773, clauses 4.2.2.1.3.2 and 4.4 only.

1.3 The remainder of Regulation (EU) 2019/773 which amends the technical annex of the OPE TSI was published in 2019 but only applied in the EU from June 2021[2]. This content was not reflected in the OPE NTSN in line with the policy of only reflecting requirements which were in force at the end of the EU-Exit transition period. As a result, if the OPE NTSN is not changed to incorporate the amendments to the OPE TSI made by Regulation (EU) 2019/773 then the OPE NTSN will differ from the OPE TSI in some areas.

1.4 All amendments made to the OPE TSI by Regulation (EU) 2019/773 need to be assessed to recommend which should be incorporated into the OPE NTSN. Not doing so would lead to passive divergence against the TSI requirements. There may need to be divergence for specific amendments, but this should be a conscious decision made in the best interests of the GB rail sector rather than a passive divergence as a result of inaction.

Objective 2 – Realise the benefits of amendments made by Regulation (EU) 2019/773 for GB rail operations and ensure that no adverse impacts are introduced.

1.5 The amendments to the OPE TSI made by Regulation (EU) 2019/773 were developed and agreed before May 2019 while the UK was a member of the EU. Therefore, these amendments were previously accepted and, in many cases, developed and promoted by UK industry. As GB operations would have been considered through its development, we expect that in most cases incorporating Regulation (EU) 2019/773 would be beneficial for GB.

1.6 We should therefore ensure that the benefits derived from these are experienced by GB by including them in the OPE NTSN. In many cases, these have been proven, but the existing evidence should be revisited to justify incorporating them in GB regulations.

1.7 Although the UK was heavily involved in the development of Regulation (EU) 2019/773, there may be individual aspects that UK industry did not support as potentially having an adverse impact on GB rail operations. The regulatory separation of NTSNs from TSIs gives the

[2] apart from Appendices A and C, which will apply from 2024

opportunity for these amendments in Regulation (EU) 2019/773 to be excluded from the NTSN or replaced with alternative GB specific text where this would otherwise have an adverse impact or introduce an inoperability with reference to EU legislation or activities which do not apply in the UK.

2. How does the content in the NTSN need to change to achieve this?

Options

2.1 There are four overarching options for changing the OPE NTSN.

i) **Option 0 (Do Nothing)** – Retain the current OPE NTSN and only make changes on a case-by-case basis when requested by the GB rail sector.

ii) **Option 1 (Do Minimum)** – Update the OPE NTSN to include all amendments to the OPE TSI with no further consideration of the impact as these have effectively been previously accepted by the GB rail sector.

iii) **Option 2** – Update the OPE NTSN to include amendments to the OPE TSI only where benefits to the GB rail sector can be clearly demonstrated. This means aligning with the TSI only where there are demonstrable reasons to.

iv) **Option 3** – Update the OPE NTSN to include amendments to the OPE TSI where either net benefits or at least no adverse impact can be clearly demonstrated for the GB rail sector. This means diverging from the TSI only where there are demonstrable reasons to.

2.2 **Option 3** best fulfils the objectives and is aligned with the government's position on EU legislation. This means assessment of each amendment to the OPE TSI and recommendations for whether or not the OPE NTSN should align with these.

Categorisation of NTSN changes

2.3 Regulation (EU) 2019/773 replaced the technical annex of the previous OPE TSI with an extensive set of amendments. This consists of:

- amendments which are not expected to have an impact on the NTSN requirements or GB operational practice. For these, any which are not relevant to GB or an unnecessary editorial change are categorised as 'C0' and detailed in **Annex D** of this document. The remainder which may be incorporated without any impact are categorised as 'C1' and detailed in **Annex E** of this document.
- amendments that could potentially result in a technical change (category C2) or regulatory change (category C3) to the requirements, so need full assessment to make a recommendation on whether these should be incorporated in the OPE NTSN. These are detailed in **Annex B** of this document.

2.4 A marked-up version of the OPE NTSN with the proposed amendments is provided in the accompanying document *'OPE NTSN 2021 Issue 2 Pre-Consultation'*.

- Blue, underlined text shows what is proposed to be added to the NTSN.
- Red, strikethrough text shows what is proposed to be removed from the NTSN.

- Comments show where the text differs from TSI amendments made by Regulation (EU) 2019/773.

Assessment of NTSN changes

2.5 C0 and C1 changes were considered and agreed by the OPE NTSN Mirror Group and DfT to have no material impact. As a result, they were not subject to further formal assessment and are proposed to be either disregarded (for C0) or included (for C1) in the OPE NTSN.

2.6 The C2 and C3 changes that were initially assessed by the OPE NTSN Mirror Group and DfT as potentially having an impact on the technical or other regulatory requirements of the OPE NTSN are grouped into 10 areas. These are:

(1) **Driver documentation** – adding flexibility to the language of the Rule Book and putting more emphasis on the Railway Undertaking to ensure the Route Book accurately reflects the operational conditions related to line and vehicle characteristics.

(2) **Infrastructure Manager / Railway Undertaking provision of information** – requiring the Register of Infrastructure (RINF) to be used by the Infrastructure Manager to provide information to the Railway Undertaking with a condition that information must be provided by the Infrastructure Manager within 15 days of receiving a request.

(3) **Route compatibility** – replacing the previous section on Route Compatibility and Appendix D with a new Appendix D1 listing a comprehensive set of route compatibility checks, including all parameters and procedures.

(4) **Signals** – requiring harmonisation of luminous intensity of vehicle headlamps for permissive lines by 2026 and removing reference to rear end requirements for freight trains not crossing a border. Note, for this section to reflect GB practice, requirements on rear end signals for freight trains are also proposed to be updated in the NTSN.

(5) **Fundamental Operational Principles (FOPs)** – adding FOPs to Appendix B, which are slightly different to the FOPs in the Operational Concept for the GB Mainline Railway.

(6) **Communications** – adding new emergency communications terminology of 'Mayday, Mayday, Mayday' and replacing 'written orders' with 'operational instructions' (including standards formats for European instructions).

(7) **Definitions** – updating definitions in Appendix J to use those in Directive (EU) 2016/797 and adding or changing definitions for: 'End of Authority passed without permission', 'Evacuation', 'Exceptional Transport' and 'Incident'.

(8) **Regulatory framework** – listing areas for national rules and open points in Appendix I.

(9) **References to legislation/supporting documents** – updating the version of the ERTMS operational principles and rules referred to in Appendix A to version 5, and adding a condition for monitoring processes for use of operational instructions in Appendix C.

(10) **Implementation** – removing reference to National Implementation Plans and principles for implementation.

2.7 The proposed changes to the NTSN in these areas are in the following table. The relevant text and detailed assessment of these is in **Annex B**.

Area	Item	TSI Section	Description	Preferred Option	Alignment with OPE TSI
1) Driver Documentation	1-1	4.2.1.2.1.	Rule Book language	Adopt TSI text	Full alignment
	1-2	4.2.1.2.2.1.	RU responsibility for Route Book accuracy	GB specific change	Alignment of principles
2) RU/IM provision of information	2-1	4.2.1.2.2.1.	RINF – information for the Route Book	GB specific change	Regulatory divergence
	2-2	4.2.2.6.2. & 4.8.1.	RINF – information for line characteristics/rail infrastructure	Keep NTSN text	Alignment of principles
	2-3	4.2.2.6.2. & 4.8.1.	IM providing information within 15 days	GB specific change	Regulatory divergence
	2-4	4.8.	Registers of infrastructure and vehicles	GB specific change	Alignment of principles
3) Route compatibility	3-1	4.2.2.5.	Route compatibility	GB specific change	Regulatory divergence
	3-2	4.2.2.5.	RU responsibilities for train composition	Adopt TSI text	Full alignment
	3-3	Appendix D	Route Compatibility	GB specific change	Regulatory divergence
	3-4	Appendix D	Route Book	Adopt TSI text	Full alignment
4) Signals	4-1	4.2.2.1.2.	Front end signal	Keep NTSN text	Regulatory divergence
	4-2	4.2.2.1.3.3	Rear end signal	GB specific change	Alignment of principles
5) FOPs	5-1	Appendix B	Fundamental Operational Principles	GB specific change	Alignment of principles
6) Communications	6-1	Appendix C	Mayday, Mayday, Mayday	GB specific change	Alignment of principles
	6-2	Appendix J	Operational instructions	GB specific change	Alignment of principles
7) Definitions	7-1	Appendix J	Definition references	GB specific change	Alignment of principles
	7-2	Appendix J	New definitions	Adopt TSI text	Full alignment
	7-3	Appendix J	Incident	Keep NTSN text	Alignment of principles
8) Regulatory framework	8-1	Appendix J	Open Points	Keep NTSN text	Alignment of principles
9) References to legislation/supporting documents	9-1	Appendix A	ERTMS rules	Adopt TSI text	Full alignment
	9-2	Appendix C	Monitoring instructions	GB specific change	Alignment of principles
10) Implementation	10-1	7.1.	Implementation principles	GB specific change	Alignment of principles
	10-2	7.2.	Implementation guidelines	Adopt TSI text	Full alignment

3. How urgently does the NTSN change need to happen?

3.1 The amendments to the OPE TSI from Regulation (EU) 2019/773 applied in the EU from 16 June 2021. There are no known areas where the differences are causing an immediate problem, but changes to the NTSN should be made as soon as possible to minimise the period of misalignment between them.

4. What are the positive and negative impacts of implementing the change?

4.1 All C0 and C1 changes outlined in **Annex D** and **Annex E** are not expected to have any quantifiable impact on GB rail operations.

4.2 For all C2 and C3 changes that were initially assessed as potentially having an impact on GB rail operations, there are three options for treatment of these: keeping the NTSN text, adopting the TSI text, or developing GB specific text where necessary. The preferred option in for each is set out in section 2 and **Annex B**. The impact of these has not been quantified. This is because:

a) ***For recommendations to keep the existing NTSN text***, there is no quantifiable impact. There is clearly no impact on GB operations, and there are no expected wider impacts/trade implications by not aligning completely with the OPE TSI text in this area.

b) ***For recommendations to adopt the TSI text***, either:

i) The change was initially assessed as potentially having an impact on GB operations, but after further consideration was concluded not to change the requirement, and so GB operations are unaffected and therefore there is no quantifiable impact.

ii) The change does not directly result in changes to GB operations but enables benefits which cannot be quantified at this point, such as increased flexibility for the rule book language or introducing the fundamental operational principles.

iii) There is a very clear strategic need for alignment, such as consistency with ERTMS rules and operational instructions. This would be disproportionate to quantify as the strategic need is clear and the value of benefits would be difficult to assess with any certainty.

c) ***For recommendations to develop GB specific text where necessary***, in all cases this is seeking to preserve current GB operational practice, so again there is no quantifiable impact. Any differences from the TSI are either to remove inoperable references to EU legislation or are judged not to result in wider impacts/trade implications.

4.3 The alternative options in each case have been considered qualitatively. These have not been quantified because, either:

a) There is a clear regulatory reason why an alternative should not be considered, such as a reliance on EU legislation which does not apply in the UK, or lack of access to the RINF application, which is maintained by the ERA, meaning it is not possible to directly incorporate the TSI requirement.

b) Where there are no adverse impacts of alignment with the OPE TSI, it is desirable to align with this to satisfy the objectives of the change and so not proportionate to quantify the alternatives.

c) An alternative option has no quantifiable impact, such as minor changes to technical definitions.

d) An alternative option may result in expected cost increases with no clear benefits, or changes to benefits with no clear cost implications, so the options are clearly comparably better or worse. There is no trade-off and so no benefit in quantifying this to form a recommendation.

e) The expected cost or benefit impacts are relatively small, so quantification would be disproportionate to produce a figure which would not inform the recommendation.

4.4 Instead, for these changes, a full qualitative assessment is provided in **Annex B** to support the recommendation and an impact matrix has been produced in **Annex F** to show the affected areas of impact of the NTSN change.

4.5 As a package of changes, there is a high degree of confidence that the overall costs and benefits will be minimal as:

- The recommendations do not mandate any significant changes to GB operational practice.
- The corresponding ERA Impact Assessment for Regulation (EU) 2019/773 (which also did not assess the impact of individual changes) estimates overall EU-wide costs of €20m and benefits of €20m p.a. based on assumed improvement in efficiency of cross border traffic. Rescaling the estimate in the ERA Impact Assessment by the number of cross border connections for GB compared to the estimated total number of EU cross-border links with operational passenger or freight services (1/202[3]) suggests overall costs and annual benefits would be **less than £100k**. This figure would still be much higher than an estimate for the actual proposed OPE NTSN changes as:
  - This is based on specific operational challenges for European cross-border checks which will not be relevant for GB.
  - The changes related to RINF and route compatibility checks are the key driver of this estimate and are not proposed for inclusion in the OPE NTSN.

5. What is the contribution of this NTSN change in realising the value to industry opportunity?

5.1 It is only through assessing and amending the NTSN that regulatory alignment with the EU can be fully understood and maintained.

[3] https://ec.europa.eu/regional_policy/sources/docgener/studies/pdf/cb_rail_connections_en.pdf

6. What is the effort required to make the change?

6.1 RSSB, with the support of the OPE TSI Mirror Group and other stakeholders has analysed all amendments to the OPE TSI made by Regulation (EU) 2019/773 and has made recommendations for corresponding amendments to the OPE NTSN.

6.2 With support from the committee, the next steps are to:

- Undertake an industry consultation on the proposed amendments, which will be circulated to individuals who have registered to receive consultations on rail operations standards. This will also be provided to affected GB infrastructure managers and railway undertakings in scope of the NTSN who are not in scope of RSSB standards for the GB mainline such as HS1 and HS2.
- Return to the committee in early 2022 with the outcome of the consultation and any resulting changes to the OPE NTSN recommendations.
- Share these proposals with DfT and support DfT through production of a government regulatory impact assessment, its governance processes to Ministerial approval and publication of the NTSN. This is expected to take several months and may require support from the RSSB policy team.

6.3 We expect that the analysis and evidence in this BCfC is sufficient for the regulatory impact assessment the DfT will need to present alongside the proposed changes. But if further evidence is required, this may require support from an operational specialist.

7. Can this be delivered against industry's expected timescales?

7.1 We expect the NTSN may be published in draft in April 2022. This will allow time to undertake industry consultation, formally agree the changes and go through DfT governance for publication.

7.2 The proposed timeline for delivery is in the table below. These timescales could be extended by several months if the government's Regulatory Policy Committee requires further analysis and justification in the proposed areas of regulatory divergence, and these are deemed significant enough that a Ministerial Statement to Parliament is required.

Activity	Due
TOM-SC pre-consultation visit for approval of finalised NTSN text and Final BCfC	7 Dec 2021
Industry consultation	13 Jan 2021
TOM-SC approval of finalised NTSN text	1 Mar 2022
DfT's Regulatory Impact Assessment finalised	Mar 2022
Submission to Ministers to approve NTSN changes	Mar 2022
Publish updated NTSN (draft on RSSB website)	**Apr 2022**

8. How will the industry implement the change?

8.1 As the recommended changes do not require (but in some cases permit) a change to current industry practice, there should be minimal effort needed from Railway Undertakings or

Infrastructure Managers to familiarise themselves with the changes, and no required revision of Safety Management Systems or working practices.

8.2 The Rule Book will require an update to reflect the use of 'Mayday, Mayday, Mayday' as a permissible term for emergency communications.

9. How will it be assessed whether the change is achieving the objectives?

9.1 The first objective of assessing the regulatory alignment has been achieved through this work. Any differences will be recorded in track change files comparing the OPE NTSN and the current OPE TSI.

9.2 For the second objective of delivering benefits to GB rail operations and ensuring no adverse impacts are introduced, after implementation, RSSB will seek feedback from infrastructure managers and train operators at operations industry forums. These will be recorded to develop the evidence base for future changes to the OPE NTSN.

9.3 RSSB will also continuously monitor any industry requests for help relating to the OPE NTSN and record and review any that are related to updates introduced in this change.

Annex A Options assessment

A.1 Baseline (Do-Nothing scenario)

A.1.1 The options are assessed against a 'Do-Nothing' scenario where:

- The current OPE NTSN text does not change and so the technical content of Regulation (EU) 2015/995, with clauses 4.2.2.1.3.2. and 4.4. of Regulation (EU) 2019/773, continues to apply in the UK.
- From June 2021, updated regulations for operation and traffic management apply in the EU.
- From June 2024, further updated regulations (for ERTMS rules and safety related communications) apply in the EU.

A.2 Options considered

A.2.1 There are four overarching options for changes to the NTSN:

- **Option 0** ('Do Nothing') – Retain the current NTSN and only make changes on a case-by-case basis when recommended by the GB rail sector.
- **Option 1** ('Do Minimum') – Update the OPE NTSN to include all amendments to the OPE TSI with no further consideration of the impact as these have effectively been previously accepted by the GB rail sector.
- **Option 2** – Update the OPE NTSN to include amendments to the OPE TSI only where benefits to the GB rail sector can be clearly demonstrated. This would mean aligning with the TSI only where there are demonstrable reasons to.
- **Option 3** – Update the OPE NTSN to include amendments to the OPE TSI where either net benefits or at least no adverse impact can be clearly demonstrated. This would mean diverging from the TSI only where there are demonstrable reasons to.

A.3 Qualitative options assessment

Option	Positive Impacts	Negative Impacts
Option 0 ('Do Nothing')	• No change to current GB practice, so no implementation costs or risks.	• Neglects valuable updates such as to ERTMS rules or options for the Rule Book language. • Potential negative impacts as the TSI develops and moves further from the NTSN, leading either to divergence in the future or reduced time for UK implementation to 'catch-up' with EU regulations. • The OPE NTSN and TSI documents would differ in many areas, including the structure, which could negatively affect the effort required to understand any material differences between the UK and EU regulations.

Option 1 ('Do Minimum')	• Full alignment with EU regulations.	• Not a viable option for some areas where inoperabilities would be introduced, such as references to EU Directives which do not apply in the UK, or to the RINF application which is developed and maintained by ERA and the UK does not have access to.
Option 2 (Align only where beneficial)	• Minimal changes to current GB practice. • Where there would be changes, justification would be clear.	• Difficult to take this approach and maintain an OPE NTSN with direct read-across to the TSI. This could negatively affect the effort require to understand alignment between UK and EU regulations.
Option 3 (Diverge only where necessary)	• Maximum possible alignment with EU regulations without negatively affecting current GB practice or introducing inoperabilities.	• There may be some differences between the OPE NTSN and TSI, but only where there is a clear reason to introduce this.

A.3.1 **Option 3 is the preferred option of best satisfying the objectives and aligning with government's position on EU legislation**. This means assessment of all individual amendments introduced by Regulation (EU) 2019/773 to determine where, and if, any divergence in the NTSN is necessary.

A.4 Assessment approach for individual changes

A.4.1 Within Option 3, there are then options for the assessment of individual OPE TSI amendments. These are to:

- Keep the existing NTSN text.
- Adopt the new TSI text.
- Develop GB specific text where neither keeping the NTSN text nor adopting the TSI text is appropriate.

A.4.2 The approach to this assessment is shown in the following flow diagram (Figure 1). This shows where the individual amendment would align (green) or diverge (red) from the technical requirements in the OPE TSI. This is a consistent approach to assessment, which is in line with Option 3.

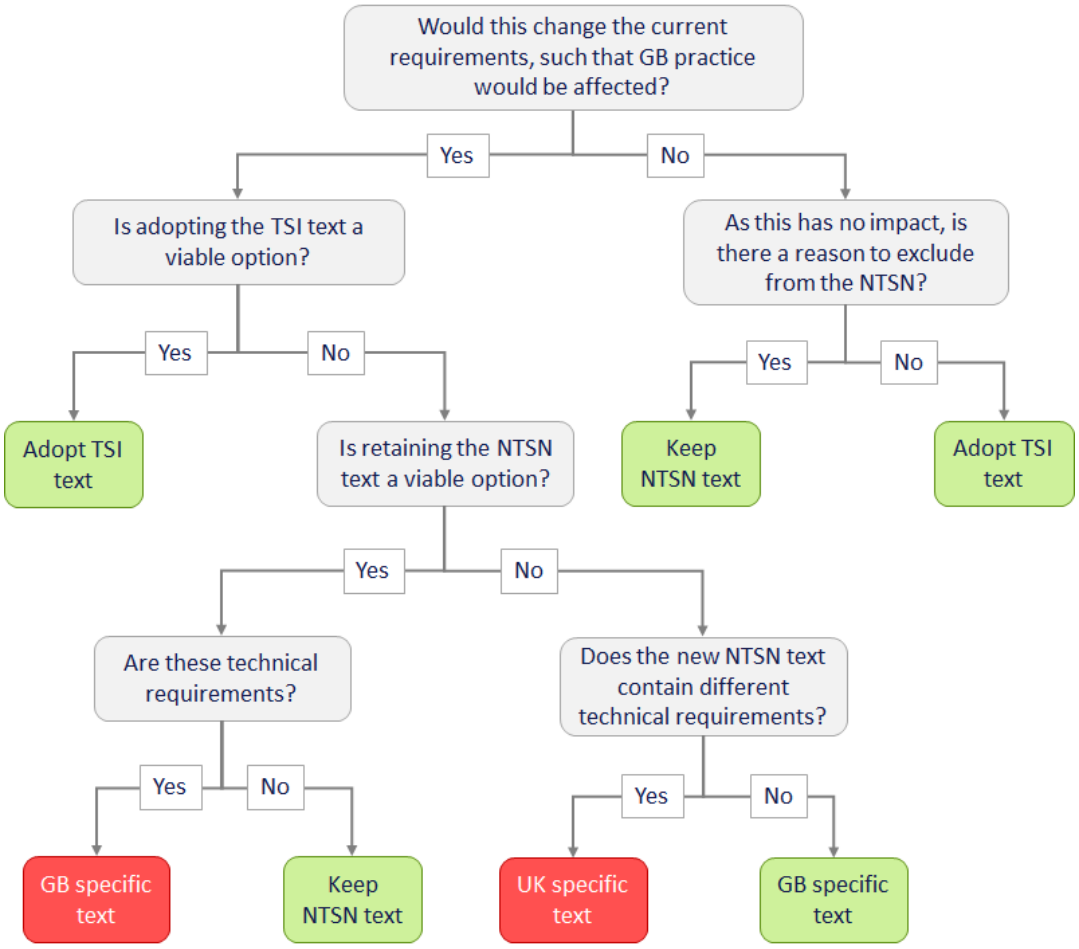

Figure 1: Assessment approach for individual changes

A.4.3 With this approach,

- for OPE TSI amendments that would not affect GB practice, but where there is a reason to exclude this from the NTSN text, **the preferred option is to keep the existing NTSN text**.
    - These have been defined as **C0** changes and shown in **Annex D.**
- for OPE TSI amendments that would not affect GB practice and there is no reason to exclude this from the NTSN text, **the preferred option is to adopt the TSI text**.
    - These have been defined as **C1** changes and shown in **Annex E.**
- For all other changes, where this could change the current requirement such that GB practice could potentially be affected, **the preferred options are shown in the table in Section 2** of this BCfC and in **Annex B**.
    - These have been defined as **C2** changes in the case of technical impacts and **C3** in the case of regulatory (non-technical) impacts.

Annex B Assessment of technical and regulatory changes

B.1.1 This Annex lists all amendments made to the OPE TSI by Regulation (EU) 2019/773 that were assessed by RSSB, the OPE TSI Mirror Group and DfT as potentially resulting in technical or regulatory changes to requirements with a potential impact on the GB rail sector (C2 and C3 changes). These are arranged under the 10 areas outlined in Section 2.

B.1.2 For each TSI amendment, the tables in this Annex show:

- A summary of the change and preferred option (whether to keep the existing NTSN text, adopt the new TSI text, or make a GB specific change).
- The relevant text from the OPE TSI. Blue text has been added in the OPE TSI compared to the OPE NTSN, and red strikethrough text has been removed from the OPE TSI compared to the OPE NTSN. The rest of the text is unchanged but included here for context.
- The qualitative assessment of this (following the approach in Figure 1).
- The proposed OPE NTSN text where the recommendation is for a GB specific change. Proposed additions to the OPE NTSN are shown in green text.

B.1 Driver documentation

Item 1-1 – Rule Book language

NTSN Change Summary	
Item	1-1
NTSN section	4.2.1.2.1.
Description	Rule Book language
Preferred Option	Adopt TSI text
Alignment	Full alignment
OPE TSI (Regulation (EU) 2019/773)	
… *The railway undertaking shall be responsible for the Driver's Rule Book and compile it in such a way that it is complete and accurate, and the driver's application of all operational rules is enabled.* *The railway undertaking must present the Driver's Rule Book in a clear format for the entire infrastructure over which their drivers will work.* *It shall have two appendices:* — *Appendix 1: Manual of communication procedures;* — *Appendix 2: Book of Forms.* *Predefined messages and forms shall at least exist ~~must remain~~ in the 'operating' language(s) of infrastructure manager(s).* *The railway undertaking's process for preparing and updating the Driver's Rule Book shall include the following steps:* *…*	
NTSN Assessment	
Would this change the current requirements, such that GB industry practice is affected?	No

Is there a reason this change should not be made to the NTSN?	No
Qualitative Assessment	Currently only the language of the Infrastructure Manager (IM) can be used for predefined messages. This change adds flexibility to permit the use of in-cab translation tools which are currently being developed. In future, pre-defined text messages could be sent in English and received in another language and vice-versa. This change helps facilitate the introduction of such technical aids. International freight services are expected to be the first beneficiaries of the translation tools this enables. As this change to the requirement adds flexibility rather than mandating a change of practice, there are no associated costs of implementation. Therefore, this change should be made to the NTSN to enable future technology and maintain alignment with the TSI.
Assessment of costs/benefits	Costs: None (no requirement to change current process) Benefits: Enabling future technology (non-monetised)

Item 1-2 – RU responsibility for Route Book accuracy

NTSN Summary	
Item	1-2
NTSN section	4.2.1.2.2.1.
Description	RU responsibility for Route Book accuracy
Preferred Option	GB specific change
Alignment	Alignment of principles

OPE TSI (Regulation (EU) 2019/773)

The format of the Route Book shall be prepared in the same manner for all the infrastructures worked over by the trains of an individual railway undertaking.

The railway undertaking is responsible for the complete and correct compilation of the Route Book, using the information supplied by the infrastructure manager(s). The railway undertaking shall ensure that the content of the Route Book is complete and accurate, including when grouping the modifications to information contained within the Route book. The railway undertaking shall ensure the route book duly describes operational conditions related to line characteristics and vehicle characteristics.

…

The infrastructure manager must ensure that the content of the documentation provided to the railway undertaking(s) is complete and accurate.

~~*The railway undertaking must ensure that the content of the Route Book is complete and accurate.*~~

4.2.1.2.2.2 Modifications to information contained within the Route Book

The infrastructure manager must advise the railway undertaking of any permanent or temporary modifications to information supplied in accordance with point 4.2.1.2.2.1.

These changes must be grouped by the railway undertaking into a dedicated document or computer medium whose format must be the same for all the infrastructures worked over by the trains of an individual railway undertaking.

The infrastructure manager must ensure that the content of the documentation provided to the railway undertaking(s) is complete and accurate.

~~*The railway undertaking must ensure that the content of the document grouping the modifications to information contained within the Route Book is complete and accurate.*~~

NTSN Assessment

Would this change the current requirements, such that GB industry practice is affected?	No
Is there a reason this change should not be made to the NTSN?	Yes
Qualitative Assessment	The OPE NTSN already contains requirements for the Railway Undertaking (RU) to ensure that the content of the Rule Book is complete and accurate. The only additional requirement in the OPE TSI is for the RU to 'ensure the route book duly describes operational conditions related to line characteristics and vehicle characteristics.' This addition does not fundamentally change the obligations on the RU as this is already covered by the existing requirement for the Railway Undertaking to ensure the Rule Book is complete and accurate. But the existing NTSN requirement is sufficient for the NTSN, so for clarity it is proposed that the additional text is not incorporated; only that the current requirements are moved for alignment with the OPE TSI structure.
Assessment of costs/benefits	No impact (no change to requirements)
Proposed NTSN change	*The format of the Route Book shall be prepared in the same manner for all the infrastructures worked over by the trains of an individual railway undertaking.* *The railway undertaking is responsible for the complete and correct compilation of the Route Book, using the information supplied by the infrastructure manager(s). The railway undertaking shall ensure that the content of the Route Book is complete and accurate, including when grouping the modifications to information contained within the Route book.* *…* *The infrastructure manager must ensure that the content of the documentation provided to the railway undertaking(s) is complete and accurate.* ~~*The railway undertaking must ensure that the content of the Route Book is complete and accurate.*~~ ***4.2.1.2.2.2 Modifications to information contained within the Route Book*** *The infrastructure manager must advise the railway undertaking of any permanent or temporary modifications to information supplied in accordance with point 4.2.1.2.2.1.* *These changes must be grouped by the railway undertaking into a dedicated document or computer medium whose format must be the same for all the infrastructures worked over by the trains of an individual railway undertaking.* *The infrastructure manager must ensure that the content of the documentation provided to the railway undertaking(s) is complete and accurate.* ~~The railway undertaking must ensure that the content of the document grouping the modifications to information contained within the Route Book is complete and accurate.~~

B.2 Infrastructure Manager/Railway Undertaking provision of information

Item 2-1 – RINF – information for the Route Book

NTSN Summary	
Item	2-1
NTSN section	4.2.1.2.2.1.
Description	RINF – information for the Route Book
Preferred Option	GB specific change

Alignment	Regulatory divergence

OPE TSI (Regulation (EU) 2019/773)

The infrastructure manager shall provide the railway undertaking with at least the information for the Route Book as defined in Appendix D2 through RINF. This information shall include relevant information that shall be taken into account to adapt train operation to line characteristics and vehicle characteristics. Until RINF provides the relevant parameters in accordance with Article 6 of Commission Implementing Regulation (EU) 2019/777(3), the infrastructure manager shall provide this information through other means free of charge and as soon as reasonably possible and in any event within 15 days for the first submission unless the railway undertaking agrees a longer deadline.

The infrastructure manager shall inform the railway undertaking of the changes on the information of the route book through RINF whenever such information becomes available or through other means until RINF allows for such functionality.

The infrastructure manager shall ensure that the information provided to the railway undertaking(s) is complete and accurate. For emergency situations or real time information appropriate alternative means of communication of the infrastructure manager shall ensure immediate information to the railway undertaking about Appendix D2.

~~*The following information must be included (this list is not exhaustive):*~~

~~*(a) the general operating characteristics:*~~

~~*(a) type of signalling system and corresponding operational regime (double track, reversible working, left- or right-hand running, etc.),*~~

~~*(a) type of power supply,*~~

~~*(a) type of track to train radio equipment.*~~

~~*(b) indication of rising and falling gradients with their gradient values and location;*~~

~~*(c) detailed line diagram:*~~

~~*- names of stations on the line and key locations and their location,*~~

~~*- tunnels, including location, name, length, specific information such as the existence of walkways and points of safe egress as well as the location of safe areas where evacuation of passengers can take place,*~~

~~*- essential locations such as neutral sections,*~~

~~*- permissible speed limits for each track, including, if necessary, differential speeds relating to certain types of train,*~~

~~*- the responsible infrastructure manager,*~~

~~*- means of communication with the traffic management/control centre in normal and degraded mode.*~~

~~*The infrastructure manager must ensure that the content of the documentation provided to the railway undertaking(s) is complete and accurate.*~~

NTSN Assessment	
Would this change the current requirements, such that GB industry practice is affected?	Yes
Is adopting the TSI text a viable option?	No
Is retaining the NTSN text a viable option?	No
Does the new NTSN text contain different technical requirements to the TSI?	No
Qualitative Assessment	The TSI change introduces requirements around how and when the IM provides the information for the Route Book to the RU; most importantly a requirement to use the 'Register of Infrastructure' ('RINF') application and provide the information within 15 days of the RU request.

	Regarding RINF, Commission Implementing Regulation (EU) 2019/777 which sets the specification for RINF has been amended by the Railways (Interoperability) (Miscellaneous Amendments and Revocations) (EU Exit) Regulations 2020 [S.I. 2020/318] to remove any references to the RINF application and omit Article 6 of 2019/777, which removes the basis for the requirement in the TSI. Therefore, there is no legal basis for the TSI reference to RINF in the NTSN. The RINF application is hosted and managed by the EU Agency for Railways (ERA). Following EU-Exit, there is no means for new information from UK IMs to be uploaded to RINF, so this cannot be used by UK IMs without changes to access. Even if RINF was accessible to UK IMs, RINF still needs to be developed further to hold the information required in the OPE NTSN, and concerns have been raised by CER and EIM about the practicalities of delivering this and that the benefits are unlikely to justify the cost. Assuming the RINF was successfully expanded, a requirement for the UK to try to use this would add cost with no clear benefit; the information Network Rail had previously provided for RINF is an aggregated export of more detailed datasets Network Rail manages, so mandating that this is uploaded to RINF in a format which may be less suitable for RUs would be a less efficient and less flexible way of providing data to RUs compared to the current process. As the data required for RINF, which is specified in Regulation (EU) 2019/777, is the same in the EU and UK, and there is still a requirement for the IM to maintain a register of infrastructure with this information under Regulation 35 of the Railway Interoperability Regulations 2011 (as amended), UK IMs would be able to provide all data that would otherwise be captured in RINF. Given there is no existing legislative requirement to use the RINF application, no practical means to do so and no clear benefit in doing so, this should not be mandated in the OPE NTSN. Separate to this change, the benefits of a standardised data format with all parameters required for the Route Book may need to be considered for the UK, but further work is required to define the requirements around this. Regarding the TSI requirement to provide the information within 15 days of the request, regulation 35 2(a) of the Railways (Interoperability) Regulations 2011 (RIR), contains a requirement for this information to be made available within 28 days of receiving the request. For consistency with the requirements in RIR, this requirement in the OPE NTSN should be 28 days. The remainder of the TSI requirement can be incorporated as reflecting current practice and being an improvement on the readability of the current NTSN which is repetitive of the full set of requirements in Appendix D. However, one improvement to the TSI text proposed for the NTSN is the requirement to 'ensure immediate information' is replaced with the requirement to 'ensure timely information' to avoid possible confusion around the term 'immediate'.
Assessment of costs/benefits	No impact (no change to existing processes)
Proposed NTSN change	*The infrastructure manager shall provide the railway undertaking with at least the information for the Route Book as defined in Appendix D. This information shall include relevant information that shall be taken into account to adapt train operation to line characteristics and vehicle characteristics. The infrastructure manager shall provide this information free of charge and as soon as reasonably possible and in any event within 28 days of the first submission unless the railway undertaking agrees a longer deadline.* *The infrastructure manager shall inform the railway undertaking of the changes on the information of the Route Book whenever such information becomes available.*

	The infrastructure manager shall ensure that the information provided to the railway undertaking(s) is complete and accurate. For emergency situations or real time information appropriate means of communication from the infrastructure manager shall ensure timely information to the railway undertaking about elements in Appendix D. ~~*The following information must be included (this list is not exhaustive):*~~ ~~*(a) the general operating characteristics:*~~ ~~*(a) type of signalling system and corresponding operational regime (double track, reversible working, left- or right-hand running, etc.),*~~ ~~*(a) type of power supply,*~~ ~~*(a) type of track-to-train radio equipment.*~~ ~~*(b) indication of rising and falling gradients with their gradient values and location;*~~ ~~*(c) detailed line diagram:*~~ ~~*- names of stations on the line and key locations and their location,*~~ ~~*- tunnels, including location, name, length, specific information such as the existence of walkways and points of safe egress as well as the location of safe areas where evacuation of passengers can take place,*~~ ~~*- essential locations such as neutral sections,*~~ ~~*- permissible speed limits for each track, including, if necessary, differential speeds relating to certain types of train,*~~ ~~*- the responsible infrastructure manager,*~~ ~~*- means of communication with the traffic management/control centre in normal and degraded mode.*~~ ~~The infrastructure manager must ensure that the content of the documentation provided to the railway undertaking(s) is complete and accurate.~~

Item 2-2 – RINF – information for line characteristics / rail infrastructure

NTSN Summary	
Item	2-2
NTSN section	4.2.2.6.2. / 4.8.1.
Description	RINF – information for line characteristics / rail infrastructure
Preferred Option	Keep NTSN text
Alignment	Alignment of principles
OPE TSI (Regulation (EU) 2019/773)	
4.2.2.6.2. Braking performance and maximum speed allowed *(1) The infrastructure manager shall provide the railway undertaking with all relevant line characteristics for each route through RINF:* *- Signalling distances (warning, stopping) containing their inherent safety margins,* *- gradients,* *- maximum permitted speeds, and* *- conditions of use of braking systems possibly affecting the infrastructure such as magnetic, regenerative and eddy-current brake.* *…*	

4.8.1. Infrastructure *The requirements for the rail infrastructure related data items with regard to the operation and traffic management subsystem, and which shall be made available to railway undertakings through RINF, are specified in Appendix D.*

NTSN Assessment	
Would this change the current requirements, such that GB industry practice is affected?	Yes
Is adopting the TSI text a viable option?	No
Is retaining the NTSN text a viable option?	Yes
Qualitative Assessment	The requirement to use RINF should not be incorporated as per the assessment in Item 2-1.
Assessment of costs/benefits	No impact (no change to existing processes)

Item 2-3 – IM providing information within 15 days

NTSN Summary	
Item	2-3
NTSN section	4.2.2.6.2. / 4.8.1.
Description	IM providing information within 15 days
Preferred Option	GB specific change
Alignment	Regulatory divergence

OPE TSI (Regulation (EU) 2019/773)
4.2.2.6.2. Braking performance and maximum speed allowed ***…*** *Until RINF provides the relevant parameters, the infrastructure manager shall provide this information through others means free of charge and as soon as reasonably possible and in any event within 15 days for the first submission unless the railway undertaking agrees a longer deadline.* *The infrastructure manager shall inform the railway undertaking of the changes on the line characteristics through RINF whenever such information becomes available or through other means until RINF allows for such functionality.* *The infrastructure manager shall ensure that the information provided to the railway undertaking(s) is complete and accurate.* ***…*** ***4.8.1. Infrastructure*** ***…*** *Until RINF is complete, the infrastructure manager shall provide this information through other means free of charge and as soon as reasonably possible and in any event within 15 days for the first submission unless the railway undertaking agrees a longer deadline.* *The infrastructure manager shall inform the railway undertaking of the changes on the infrastructure related data through RINF whenever such information becomes available or through other means until RINF allows for such functionality. The infrastructure manager is responsible for the correctness of the data.*

For emergency situations or real time information appropriate alternative means of communication of the infrastructure manager shall ensure immediate information to the railway undertaking. The infrastructure manager is responsible for the correctness of the data.

NTSN Assessment	
Would this change the current requirements, such that GB industry practice is affected?	Yes
Is adopting the TSI text a viable option?	No
Is retaining the NTSN text a viable option?	No
Does the new NTSN text contain different technical requirements to the TSI?	No

Qualitative Assessment	The TSI requirement for the IM to provide the information in 15 days should be changed to 28 days to align with RIR, as per assessment for Item 2-1. The remainder of the TSI text may be incorporated into the NTSN without any changes to current practice.
Assessment of costs/benefits	No impact (alignment with current regulatory requirements)
Proposed NTSN change	***4.2.2.6.2. Braking performance and maximum speed allowed*** ***…*** *The infrastructure manager shall provide this information free of charge and as soon as reasonably possible and in any event within 28 days of the first submission unless the railway undertaking agrees a longer deadline.* *The infrastructure manager shall inform the railway undertaking of the changes on the line characteristics whenever such information becomes available.* *The infrastructure manager shall ensure that the information provided to the railway undertaking(s) is complete and accurate.* ***…*** ***4.8.1. Infrastructure*** ***…*** *The infrastructure manager shall provide this information free of charge and as soon as reasonably possible and in any event within 28 days of the first submission unless the railway undertaking agrees a longer deadline.* *The infrastructure manager shall inform the railway undertaking of the changes on the infrastructure related data whenever such information becomes available. The infrastructure manager is responsible for the correctness of the data.* *For emergency situations or real time information appropriate means of communication from the infrastructure manager shall ensure timely information to the railway undertaking. The infrastructure manager is responsible for the correctness of the data.*

Item 2-4 – Registers of infrastructure and vehicles

NTSN Summary	
Item	2-4
NTSN section	4.8.
Description	Registers of infrastructure and vehicles
Preferred Option	GB specific change

Alignment	Alignment of principles
OPE TSI (Regulation (EU) 2019/773)	
4.8. Additional information on infrastructure and vehicles ~~*Due to the characteristics of the registers of infrastructure and vehicles, as defined in regulation 35 and 36 of the Railways (Interoperability) Regulations 2011, these registers are not suitable for the particular requirements of the operation and traffic management subsystem. Therefore this NTSN specifies nothing in respect of these registers.*~~ ~~*However, there is an operational requirement for certain infrastructure related data items to be made available to a railway undertaking and conversely for certain rolling stock related items to be made available to an infrastructure manager, as specified in point 4.8.1 and point 4.8.2. In both cases the data concerned must be complete and accurate.*~~	
NTSN Assessment	
Would this change the current requirements, such that GB industry practice is affected?	No
Is there a reason this change should not be made to the NTSN?	Yes
Qualitative Assessment	The NTSN text in 4.8 is context for clauses 4.8.1 and 4.8.2 and does not contain any substantive requirements. This has been removed in the OPE TSI, and similarly can be removed in the NTSN, other than the final sentence *'In both cases the data concerned must be complete and accurate'* which places a requirement on RUs and IMs. This requirement should be retained. For clarity, this can be removed from 4.8 (which would align with the TSI text) and be added to 4.8.1 and 4.8.2. This makes it clearer which organisation is responsible for the completeness and accuracy of the data in each case.
Assessment of costs/benefits	No impact (no change to requirements)
Proposed NTSN change	***4.8. Additional information on infrastructure and vehicles*** ~~*Due to the characteristics of the registers of infrastructure and vehicles, as defined in regulation 35 and 36 of the Railways (Interoperability) Regulations 2011, these registers are not suitable for the particular requirements of the operation and traffic management subsystem. Therefore this NTSN specifies nothing in respect of these registers.*~~ ~~*However, there is an operational requirement for certain infrastructure related data items to be made available to a railway undertaking and conversely for certain rolling stock related items to be made available to an infrastructure manager, as specified in point 4.8.1 and point 4.8.2. In both cases the data concerned must be complete and accurate.*~~ ***4.8.1. Infrastructure*** *The requirements for the rail infrastructure related data items with regard to the operation and traffic management subsystem, and which shall be made available to railway undertakings, are specified in Appendix D.* *[Text as Item 2-3 above]* *The infrastructure manager shall ensure the data is complete and accurate.* ***4.8.2. Rolling stock*** *The following rolling stock related data items must be available to infrastructure managers:* ~~*The keeper is responsible for the correctness of the data*~~*:* — *whether the vehicle is constructed from materials which may be hazardous in case of accidents or fire (for example, asbestos; the keeper is responsible for the correctness of the data. The keeper shall ensure the data is complete and accurate.*

	— *total length of the vehicle, including buffers if existing; the railway undertaking is responsible for the correctness of the data. The railway undertaking shall ensure the data is complete and accurate.*

B.3 Route compatibility

Item 3-1 – Route compatibility

NTSN Summary	
Item	3-1
NTSN section	4.2.2.5.
Description	Route compatibility
Preferred Option	GB specific change
Alignment	Regulatory divergence

OPE TSI (Regulation (EU) 2019/773)

4.2.2.5. Route compatibility and train composition

4.2.2.5.1. Route compatibility

(A) The railway undertaking is responsible for ensuring that all vehicles composing its train are compatible with the intended route(s).

The railway undertaking shall have a process in its SMS to ensure that all vehicles it uses are authorised, registered and compatible with the intended route(s) including the requirements to be followed by its staff.

The route compatibility process shall not duplicate processes performed as part of the vehicle authorisation under Commission Implementing Regulation (EU) 2018/545 (6) to ensure technical compatibility between the vehicle and the network(s). Parameters of Appendix D1 already verified and checked during vehicle authorisation or other similar processes shall not be reassessed in the framework of route compatibility check.

For vehicle authorised under Directive (EU) 2016/797, the relevant vehicle data related to the parameters listed in Appendix D1, already checked during the authorisation process, being part of:

- *the file referred to in Article 21(3) of Directive (EU) 2016/797, and*
- *the vehicle authorisation as referred to in Article 21(10) of Directive (EU) 2016/797,*

shall be provided by the applicant referred to in Article 2(22) of Directive (EU) 2016/797 or the keeper to the railway undertaking upon request, when such information is not available in ERATV or other registers for rail vehicles.

For vehicles authorised before Directive (EU) 2016/797, the relevant vehicle data related to the parameters listed in Appendix D1 shall be provided to the railway undertaking by the holder of the vehicle authorisation documentation or the keeper upon request, when such information is not available in ERATV or other registers for rail vehicles.

The processes for route compatibility in the SMS of the railway undertaking shall include the following checks, which may be performed in parallel at any appropriate time or in any appropriate sequence:

- *each vehicle is authorised and registered;*
- *each vehicle in the train is compatible with the route;*
- *the composition of the train is compatible with the route and the path;*
- *the preparation of the train ensuring that the train is correctly formed and complete.*

(B) The infrastructure manager shall provide the information for route compatibility as defined in Appendix D1 through RINF.

Appendix D1 sets out all the parameters that shall be used in the process of the railway undertaking before the first use of a vehicle or train configuration in order to ensure all vehicles composing a train are

compatible with the route(s) the train is planned to operate on including, where appropriate, deviation routes and routes to workshops. Modifications of the route and changes of infrastructure characteristics have to be taken into account. When a parameter of Appendix D1 is harmonised at network(s) level of an area of use, conformity with that parameter may be presumed for any vehicle authorised for that area of use. National rules or additional national requirements for network access in respect of route compatibility are in principle considered incompatible with Appendix D1. The infrastructure manager shall not require additional technical checks for the purpose of route compatibility beyond the list laid down in Appendix D1.

As required by Article 23(1)(b) of Directive (EU) 2016/797, until RINF provides all necessary information in respect of the relevant parameters, the infrastructure manager shall provide this information through other means free of charge as soon as possible and in electronic format to railway undertakings, authorized applicants for path requests and, where applicable, for the applicant referred to in Article 2(22) of Directive (EU) 2016/797.

The first submission of route compatibility information by the infrastructure manager through other mean than RINF shall be delivered at the request of the railway undertaking as soon as reasonably possible and in any event within 15 days unless the infrastructure manager and the railway undertaking agree a longer deadline. The infrastructure manager shall ensure that the information provided to the railway undertaking(s) is complete and accurate.

The infrastructure manager shall inform the railway undertaking of the changes on characteristics of the route through RINF whenever such information becomes available or through other means until RINF allows for such functionality.

For emergency situations or real time information, the infrastructure manager shall ensure immediate information is given to the railway undertaking through appropriate means of communication.

(C) Additional elements for route compatibility shall be checked when relevant:

- *transport of dangerous good as referred in point 4.2.3.4.3,*
- *quieter route as referred in Noise TSI,*
- *exceptional transport as referred in Appendix I*
- *access conditions to underground stations for diesel and other thermal traction systems as referred in clause 4.2.8.3 of LOC&PAS TSI.*

NTSN Assessment	
Would this change the current requirements, such that GB industry practice is affected?	Yes
Is adopting the TSI text a viable option?	No
Is retaining the NTSN text a viable option?	No
Does the new NTSN text contain different technical requirements to the TSI?	Yes
Qualitative Assessment	Section 4.2.2.5 is considered alongside changes to Appendix D1 on route compatibility (item 3-3 of this Annex) and RINF (item 2-1, 2-2 and 2-3 of this Annex). Much of the general TSI text and structure can be adopted in the NTSN such that there is no impact on current requirements around route compatibility, with the exception of: — Requirements that rely on Directive (EU) 2016/797 and Regulation (EU) 2018/545 that have not been transposed and so should not be included. — References to the RINF application which should not be included as per assessment in item 2-1 above. — The description of Appendix D1 as containing all parameters and procedures required for route compatibility checks. The approach to updating route compatibility requirements in Appendix D1 of the TSI is set out in item 3-3 below. While the corresponding Appendix D in the NTSN still sets out the parameters the IM should provide (consistent with the new text in 4.2.2.5.1.) it is not an exhaustive list of checks and does not contain procedures. Not including this in the NTSN would strictly be a divergence in the requirements for route compatibility specified in the NTSN, but one which will have no negative impacts on trade and competition given:

	— it does not relate to the design/manufacture of products, — it does not affect RUs with procedures in place that align with the OPE TSI, as this would be permitted and unaffected as the IM would hold and provide the same necessary route information specified in Appendix D1 which they are still required to have under Regulation (EU) 2019/777. The precise changes to this section of the NTSN will not require a change to current GB practice and therefore no expected costs or benefits of this change.
Assessment of costs/benefits	No impact (existing processes)
Proposed NTSN change	***4.2.2.5. Route compatibility and train composition*** *4.2.2.5.1. Route compatibility* *(A) The railway undertaking is responsible for ensuring that all vehicles composing its train are compatible with the intended route(s).* *The railway undertaking shall have a process in its SMS to ensure that all vehicles it uses are authorised, registered and compatible with the intended route(s) including the requirements to be followed by its staff.* *The processes for route compatibility in the SMS of the railway undertaking shall include the following checks, which may be performed in parallel at any appropriate time or in any appropriate sequence:* — *each vehicle is authorised and registered;* — *each vehicle in the train is compatible with the route;* — *the composition of the train is compatible with the route and the path;* — *the preparation of the train ensuring that the train is correctly formed and complete.* *(B) The infrastructure manager shall provide the information for route compatibility as defined in Appendix D.* *The infrastructure manager shall provide this information free of charge as soon as possible to railway undertakings, authorised applicants for path requests and, where applicable, to an applicant for authorisation under the Railways (Interoperability) Regulations 2011 (as amended).* *The first submission of route compatibility information by the infrastructure manager shall be delivered at the request of the railway undertaking as soon as reasonably possible and in any event within 28 days unless the infrastructure manager and the railway undertaking agree a longer deadline. The infrastructure manager shall ensure that the information provided to the railway undertaking(s) is complete and accurate.* *The infrastructure manager shall inform the railway undertaking of the changes on characteristics of the route whenever such information becomes available.* *For emergency situations or real time information, the infrastructure manager shall ensure timely information is given to the railway undertaking through appropriate means of communication.* *(C) Additional elements for route compatibility shall be checked when relevant:* — *transport of dangerous good as referred in point 4.2.3.4.3,* — *quieter route as referred in Noise TSI,* — *exceptional transport* — *access conditions to underground stations for diesel and other thermal traction systems as referred in clause 4.2.8.3 of LOC&PAS TSI.*

Item 3-2 – RU responsibilities for train composition

NTSN Summary	
Item	3-2
NTSN section	4.2.2.5.
Description	RU responsibilities for train composition
Preferred Option	Adopt TSI text
Alignment	Full alignment
OPE TSI (Regulation (EU) 2019/773)	
4.2.2.5.2. Train composition ~~*The railway undertaking must define the rules and procedures to be followed by his staff so as to ensure that the train is in compliance with the allocated path.*~~	
NTSN Assessment	
Would this change the current requirements, such that GB industry practice is affected?	No
Is there a reason this change should not be made to the NTSN?	No
Qualitative Assessment	This was removed in the TSI due to the introduction of similar requirements in 4.2.2.5.1. As these are also proposed to be included in the NTSN, this text may be removed without changing the current obligations for the RU, so this has no impact on GB operations.
Assessment of costs/benefits	No impact (no change to requirements)

Item 3-3 – Appendix D - Route Compatibility

NTSN Summary	
Item	3-3
NTSN section	Appendix D
Description	App D1 - Route Compatibility
Preferred Option	GB specific change
Alignment	Regulatory divergence
OPE TSI (Regulation (EU) 2019/773)	
Appendix D ***Route compatibility and Route Book*** ***D1 Parameters for the vehicle and train compatibility over the route intended for operation*** Please see the separate document '*OPE TSI Appendix D1*' for the full OPE TSI Appendix D1.	
NTSN Assessment	
Would this change the current requirements, such that GB industry practice is affected?	Yes
Is adopting the TSI text a viable option?	No
Is retaining the NTSN text a viable option?	No

Does the new NTSN text contain different technical requirements to the TSI?	Yes
Qualitative Assessment	Appendix D1 in the OPE TSI sets out the information required and procedures for route compatibility checks following from the requirements in section 4.2.2.5. This is intended to be a complete, exhaustive list, so that checks of the specified parameters using the specified procedures means that vehicles are compatible with the route without further checks or national rules around this. There were concerns from UK industry about Appendix D1 when this was first proposed for inclusion in the OPE TSI. The ERA final recommendations report for the OPE TSI notes that the UK 'considered that the new Appendix D1 was too technical and not operational while TSI OPE is supposed to be a document on the modus operandi of a system without going into the technical details.' CER, EIM and the GB OPE TSI Mirror Group were also of the view that the parameters contained within Appendix D1 were too immature to be completely relied upon. Since this was introduced in the OPE TSI, concerns have been raised by operators through CER around problems with introduction in the EU. This reflects that as currently defined in the TSI, this is not mature enough to define the route compatibility check procedure. Some of the concerns are related to practical challenges with using ERATV/RINF to provide the data, which would not be a problem for the UK if this was not mandated, but others are more fundamental problems about the increased burden and lack of clarity about the precise requirements. Examples are: — In most cases, the procedures defined are a 'comparison' of parameters. For examples, for braking checks there are no criteria or conditions for a satisfactory check and the comparison is too simplistic to consider other factors such as whether a wagon would be fully loaded or empty. — This includes checks that are not route dependent and would need to be done when the vehicle is authorised, without making clear which checks come under this category. The UK approach is also different to mainland Europe in some areas related to route compatibility and there are risks that some of the specifications in Appendix D1 would introduce unnecessary challenges. Specific examples for parameters are: — Load capabilities, where a number for Route Availability (as defined in GERT8006) is used for GB rather than the alphanumeric code classification in EN 15528:2015 which is used in the rest of Europe as the basis for determining technical compatibility between the static load characteristics of rail vehicles and the capacity of underline bridges. — Voltages and frequencies, where nominal values are presented in Appendix D1 of the TSI as sufficient to determine route compatibility, but frequency limits are not referred to, which could potentially result in incompatibilities. If a set of requirements for route compatibility checks is introduced that is defined as comprehensive and replacing other national rules, this must be fully and perfectly defined, otherwise introducing this risks causing confusion around whether the checks are necessary, sufficient and satisfactorily completed. As such, there are no expected benefits of including Appendix D1 in the NTSN in its current form and doing so may have adverse impacts. Not including Appendix D1 in its current form from the NTSN would strictly be a divergence in the specified minimum requirements for route compatibility in the UK compared to the EU, although in practice the interfaces which need to be checked are the same and so the same checks would be undertaken. This is not a divergence that would have any impact on trade and competition because: — it does not relate to the design/manufacture of products, — it does not affect RUs with procedures in place that align with the OPE TSI, as this would be permitted and unaffected as the IM would hold and provide the

	same necessary route information specified in Appendix D1 which they are still required to have under Regulation (EU) 2019/777. Therefore, it is recommended that Appendix D1 is not included in the NTSN and route compatibility checks for GB should continue to be performed according to established national rules. However, improvements are being developed for Appendix D1 for the next revision of the OPE TSI. Once these have been developed, this area should be revisited to assess whether the next revision of Appendix D1 in the TSI is mature enough for inclusion in the NTSN. Appendix D1 could still provide helpful guidance for the route compatibility interface checks so the list of interfaces and parameters should be added to the forthcoming guidance note for the OPE NTSN so that operators can use this to assist with route compatibility checks, which could aid efficiency in some cases, but be clear that this is not mandatory. This approach would not result in any costs, as there is no required change to route compatibility procedures, or quantifiable benefits, as it is unclear whether the inclusion of the parameters in Appendix D1 as guidance would have a meaningful benefit given the existing GB guidance for route compatibility checks in RIS-8270-RST, Appendix B.
Assessment of costs/benefits	No impact (no change to requirements)

Item 3-4 – Appendix D – Route Book

NTSN Summary	
Item	3-4
NTSN section	Appendix D
Description	Appendix D - Route Book
Preferred Option	Adopt TSI text
Alignment	Full alignment

OPE TSI (Regulation (EU) 2019/773)

Number	*Route Book*
2.2	*Line Diagram*
~~*Information to be included on diagrams, supplemented as necessary by text. Where a separate station/yard/depot diagram is provided then information on line diagram may be simplified.*~~	

…

2.3	*Station/Yard/Depot diagrams*
~~*Information to be identified on location specific diagrams, supplemented as necessary by text*~~	

…

2.3.8	*Curvature of platforms*

…

2.3.9	~~*Length of loops*~~

…	
2.3.10	*Other installations*
…	
3.1.4	*Maximum permissible speed for each track, including, if necessary, differential speeds relating to certain types of train ~~(s)/Speeds according to allocated path timetable~~*
…	
3.2.11	*Tunnels: location, name, length, specific information such as the existence of walkways and points of safe egress as well as the location of safe areas where evacuation of passengers may take place; fire safety categorisation ~~fire safety categorisation and tunnel-related data in clause 4.2.1.2.2.1c~~*
…	
3.2.7	*Type of signalling system and corresponding operational regime (double track, reversible working, left or right hand running, etc.)*
…	
3.2.8	*Type of track to train radio equipment.*
…	

NTSN Assessment	
Would this change the current requirements, such that GB industry practice is affected?	Yes
Is adopting the TSI text a viable option?	Yes
Qualitative Assessment	For 2.2 and 2.3 regarding information to be included on diagrams, the clarification around this has been removed in the TSI. Retaining or removing this would not have any material, quantifiable impact. This can therefore also be removed from the NTSN for closer alignment with the TSI. For 2.3.8 regarding curvature of platforms, this is not currently provided as part of Network Rail's Sectional Appendices but is information an IM should be able to provide alongside platform height and length if requested by an RU. Associated costs are only likely to be related to providing existing data rather than establishing a new dataset. This can therefore be added to the NTSN for alignment with the TSI. There remains a question around whether this information is necessary, and this should be considered as part of any review of the elements required for the Route Book. For 2.3.9 regarding length of loops, this may be removed from the NTSN as an unnecessary requirement, for alignment with the TSI. For 2.3.10 regarding other installations, this is information an IM should be able to provide if requested by an RU. The same points as 2.3.8. apply, and this can therefore be added to the NTSN for alignment with the TSI. For 3.1.4 regarding maximum permissible speeds, the TSI has been changed to make this a clearer requirement. Information on different speeds for different rolling stock is already provided by Network Rail through the Sectional Appendices so this may be incorporated in the NTSN with no change to current practice and therefore no expected costs or benefits. For 3.2.11 regarding parameters relating to information about tunnels, although this has been structured differently, there is no change to the minimum requirements specified and neither list in the TSI or NTSN is exhaustive, so this is not a change to

	requirements. The current 4.2.1.2.2.1c) is being removed from the NTSN as part of this change, so this should be included in this table in Appendix D of the NTSN. For 3.2.7 regarding signalling system, this is something Network Rail already provides through the Sectional Appendices so this can be incorporated in the NTSN with no change to current practice and therefore no additional costs or benefits. For 3.2.8 regarding radio equipment, this is something Network Rail already provides through the Sectional Appendices so this can be incorporated in the NTSN with no change to current practice and therefore no additional costs or benefits.
Assessment of costs/benefits	Costs: There may be some minimal costs associated with providing additional information on platform curvature and other installations. Although where this information is important, this is likely to already be provided. Benefits: Potentially clearer requirements and more accessible information for RUs (non-monetised).

B.4 Signals

Item 4-1 – Front end

NTSN Summary	
Item	4-1
NTSN section	4.2.2.1.2.
Description	Front end signal
Preferred Option	Keep NTSN text
Alignment	Regulatory divergence

OPE TSI (Regulation (EU) 2019/773)
… *The front-end lights shall optimise train detectability (marker lights), provide sufficient visibility for the train driver (head lights) by night and during low light conditions and shall not dazzle the drivers of oncoming trains.* *The spacing, the height above rails, the diameter, the intensity of the lights, the dimensions and shape of the emitted beam in both day and night time operation are defined in LOC&PAS NTSN.* *By the dates mentioned below for the harmonisation of the rear end signal as per section 4.2.2.1.3.2, the luminous intensity of vehicle headlamps shall be in accordance with point (5) of section 4.2.7.1.1 of the Annex to Commission Regulation (EU) No 1302/2014 (4) (LOC&PAS TSI) in order to access the lines identified in RINF where permissive driving is used.*

NTSN Assessment	
Would this change the current requirements, such that GB industry practice is affected?	Yes
Is adopting the TSI text a viable option?	No
Is retaining the NTSN text a viable option?	Yes
Qualitative Assessment	This requires retrospective application of the specification for headlamps in the LOC&PAS TSI by 1 January 2026 for lines where 'permissive driving'/(working) is used. 4.2.7.1.1.(5) of the LOC&PAS TSI refers to EN 15153-1:2013+A1:2016 (which has since been superseded by BS EN 15153-1:2020), clause 5.3.4, table 2, first line for the luminous intensity of dimmed and full-beam headlamps. This appears to be linked to the introduction of reflective plates, requiring sufficient illumination of reflective plates of a freight train ahead. As the requirements around

	reflective plates are not included in the OPE NTSN and will be considered as part of a separate change rather than as part of Regulation (EU) 2019/773, there is no basis to introduce this requirement in the OPE NTSN. Any decision to impose retrospective application should be based on a risk assessment to determine whether this is necessary and appropriate. Appendix F of the related NTR for Audibility and Visibility of Trains, GMRT2131, provides guidance for undertaking a risk assessment. This identifies a range of factors that should be considered, such as current condition of headlamps, comparison with other headlamps on the route and environmental conditions. These will be variable for specific fleets and operations, which makes a meaningful assessment to justify introducing this as a blanket requirement at a national level disproportionate for this change as assessment would be needed at the level of individual operations given the range of factors affecting both the costs and benefits. Without requirements around reflective plates and with GB practice requiring lighted tail lamps to be visible at a sufficient distance on a permissive line, there is not a clear case to include this in the NTSN. Instead, this should be kept as an assessment based on the conditions of the rolling stock and the specific operations undertaken, as per the guidance in GMRT2131.
Assessment of costs/benefits	No impact (no change to requirements)

Item 4-2 – Rear end

NTSN Summary	
Item	4-2
NTSN section	4.2.2.1.3.3
Description	Rear end signal
Preferred Option	GB specific change
Alignment	Alignment of principles
OPE TSI (Regulation (EU) 2019/773)	
4.2.2.1.3 Rear end ***4.2.2.1.3.2. Freight trains*** *The UK has a requirement for a rear end indication consisting of two steady red lights.* *Reflective plates shall comply with Appendix E to the WAG NTSN.* *The lamps shall be on the same height above buffer on the transversal axis* ~~*4.2.2.1.3.3 Freight trains not crossing a border between the UK and EU Member States*~~ ~~*The rule for freight trains in international traffic described in 4.2.2.1.3.2shall also be accepted for trains not crossing a border.*~~	
NTSN Assessment	
Would this change the current requirements, such that GB industry practice is affected?	Yes
Is adopting the TSI text a viable option?	No
Is retaining the NTSN text a viable option?	No
Does the new NTSN text contain different technical requirements to the TSI?	Yes

Qualitative Assessment	Although only section 4.2.2.1.3.3 has changed in the OPE TSI, section 4.2.2.1.3.2 differs between the OPE NTSN and TSI, and so the TSI change needs to be considered in the context of 4.2.2.1.3.2. In the OPE NTSN, 4.2.2.1.3.2 should be changed to correct a pre-existing error in the TSI for the UK specific case that UK national rules require freight trains to be equipped with two steady red lights, which was transferred into the OPE NTSN from the previous TSI but does not reflect UK national rules or industry practice. This should be amended to increase the flexibility of this requirement to maintain technical compatibility with existing operating practice by adding the option for a single flashing light that meets the specification in clause 3.8 of GMRT2131. This is already included as a National Technical Rule (NTR) in the list published by the Secretary of State. This is not a divergence from the TSI requirements, as this does not prevent two steady red lights being used, and 4.2.2.1.3.2 of the OPE TSI still states that *'any train equipped with 2 steady red lights shall also be considered to comply with this obligation'.* Section 4.2.2.1.3.3 should be removed from the OPE NTSN as unnecessary, for alignment with the OPE TSI.
Assessment of costs/benefits	Costs: Cost savings from retaining use of existing suitable rear end signals (disproportionate to quantify). Benefits: None (no change to requirements).
Proposed NTSN change	***4.2.2.1.3 Rear end*** ***4.2.2.1.3.2. Freight trains*** *The ~~UK has a requirement for a~~ rear end indication shall consist~~ing~~ of two steady red lights in accordance with the LOC&PAS NTSN or one flashing light that meets the requirements specified in the relevant national technical rules.* *Reflective plates shall comply with Appendix E to the WAG NTSN.* *The lamps shall be on the same height above buffer on the transversal axis* *~~4.2.2.1.3.3 Freight trains not crossing a border between the UK and EU Member States~~* *~~The rule for freight trains in international traffic described in 4.2.2.1.3.2shall also be accepted for trains not crossing a border.~~*

B.5 Fundamental Operational Principles (FOPs)

Item 5-1 – Appendix B – FOPs

NTSN Summary	
Item	5-1
NTSN section	Appendix B
Description	FOPs
Preferred Option	GB specific change
Alignment	Alignment of principles
OPE TSI (Regulation (EU) 2019/773)	
Appendix B ***Common operational principles and rules*** *B1. Fundamental operational principles* *1. The method of authorising a train movement shall maintain a safe interval between trains.*	

2. A train shall only operate over a portion of line if the train composition is compatible with the infrastructure. *3. Before a train begins or continues its journey, it shall be ensured that passengers, staff and goods are carried safely.* *4. Before a train is allowed to start or continue its movement, it shall have an authority to move and all necessary information to define the conditions of that authority.* *5. A train shall be prevented from proceeding onto a portion of line if it is known or suspected that it would not be safe for the train to pass until measures have been taken to allow the train to continue safely.* *6. A train shall not continue to operate after it has been found to be unsafe in any respect, until measures have been taken to allow the train to continue safely.*

NTSN Assessment	
Would this change the current requirements, such that GB industry practice is affected?	No
Is there a reason this change should not be made to the NTSN?	Yes
Qualitative Assessment	The Fundamental Operational Principles (FOPs) give the overarching principles for a safe railway system to be considered when developing operational procedures for the safety management system. The FOPs used for the TSI are based on a version of the operational concept for the GB mainline railway provided to ERA. Since these were included in the OPE TSI, GB has developed these further for the recently published Operational Concept for the GB Mainline railway. These are similar to those used in the OPE TSI, but improve upon these with additional principles numbered 3, 8, and 9 in the proposed OPE NTSN change below. Therefore, the FOPs used in the Operational Concept for the GB Mainline railway should be used in the NTSN. This maintains alignment with what the TSI was seeking to achieve by introducing FOPs, albeit with enhanced principles. Incorporating these should have no impact on the GB Mainline railway and given the fundamental nature of these, should not impact on other networks in the GB rail system within the scope of the NTSN.
Assessment of costs/benefits	Costs: None Benefits: Harmonisation of FOPs across the GB rail system (non-monetised)
Proposed NTSN change	***Appendix B*** ***Common operational principles and rules*** *B1. Fundamental operational principles* *1. The method of signalling must maintain a space interval between trains that is safe.* *2. Before a train is allowed to start or continue moving, it must have an authority to move that clearly indicates the limit of that authority.* *3. Trains proceeding over any portion of line must not be obstructed in a way that threatens their safety.* *4. Trains must be prevented from proceeding onto a portion of line if it is known or suspected that it would not be safe for them to pass.* *5. Trains must not be allowed to begin or continue their journeys until it is clear that it is safe for them to do so.* *6. Trains must only be allowed to operate over any portion of line as long as the rolling stock is compatible with the infrastructure on that portion of line.* *7. Trains must not continue to operate after they have been found to be unsafe in any respect, until measures have been taken to allow them to continue safely.* *8. People must be kept at a safe distance from moving trains.* *9. The workforce must be protected from the particular hazards associated with electrified railways.*

B.6 Communications

Item 6-1 – Appendix C – Mayday, Mayday, Mayday

NTSN Summary	
Item	6-1
NTSN section	Appendix C
Description	Mayday, Mayday, Mayday
Preferred Option	GB specific change
Alignment	Alignment of principles

OPE TSI (Regulation (EU) 2019/773)

Appendix C

…

2. Safety related communication

…

2.3. Communication content

…

Standard terminology shall be used in the communication procedure by all the parties without translation:

Situation	*Standard terminology*
Term used to indicate that there is an emergency situation	*'Mayday, mayday, mayday'*

This term shall not be translated and does not have to be used in case emergency call functionality is available on the train (e.g. GSM-R).

NTSN Assessment	
Would this change the current requirements, such that GB industry practice is affected?	Yes
Is adopting the TSI text a viable option?	No
Is retaining the NTSN text a viable option?	No
Does the new NTSN text contain different technical requirements to the TSI?	No
Qualitative Assessment	The OPE NTSN (as per the previous OPE TSI) does not contain standard terminology for an emergency situation. This has been introduced in the TSI with the term 'Mayday, Mayday, Mayday' as the emergency signal to be used by all parties. For the GB mainline, the emergency communications are defined in the Rule Book (GERT8000-G1, section 5). The phrase is 'This is an emergency call'. Therefore, use of 'Mayday, Mayday, Mayday' does not align with current practice on the GB mainline. For safety communications, it is essential that a standard term for an emergency situation is clear and has a common understanding. A change to current GB practice could have an adverse impact in GB of the increased risk that this is not widely used or understood. It is undesirable to adopt the TSI text and mandate the use of 'Mayday, Mayday, Mayday'. On the other hand, not aligning with the TSI means emergency signals would differ between GB and mainland Europe. This would require cross border services with European drivers to use and understand GB terminology which would require additional training. Given there are risks of cross-border services with European drivers who are trained to 'Mayday, Mayday, Mayday' not using GB convention (especially in a

	stressful emergency situation) the use of 'Mayday, Mayday, Mayday' should be explicitly permitted in the NTSN as an alternative to 'This is an emergency call' which would still remain the GB convention. Making both terms permissible means: • This does not require any change to current practice for domestic services on the GB mainline, with the cost, effort and risk involved. • There is no increased training need in GB or in Europe. This change will need to be reflected in the Rule Book, but the introduction would be communicated through the normal briefing cycle. • This reduces risks in the case that European drivers do not use the GB terminology. • This does not introduce barriers to interoperability.
Assessment of costs/benefits	Costs: Negligible Benefits: Harmonisation with EU (non-monetised)
Proposed NTSN change	***Appendix C*** *…* ***2. Safety related communication*** *…* ***2.3. Communication content*** *…* *Terminology used by all parties to indicate that there is an emergency situation shall be either as defined in the Rule Book or the standard European terminology of 'Mayday, Mayday, Mayday'.* *For use of 'Mayday, Mayday, Mayday' this term shall not be translated and does not have to be used in case emergency call functionality is available on the train (e.g. GSM-R).*

Item 6-2 – Appendix J – Operational instructions

NTSN Summary	
Item	6-2
NTSN section	Appendix J
Description	Operational instructions
Preferred Option	GB specific change
Alignment	Alignment of principles

OPE TSI (Regulation (EU) 2019/773)

Term	***Definition***
…	…
European instruction	*An harmonised operational instruction giving a similar content to train drivers across the European Union in order for them to answer in a similar manner to similar situation.*

…

National instruction	*An instruction defined at national level or by an infrastructure manager which covers situations specific to a Class B system or the transition between class A and class B systems.*

…

Operational instruction	*Formal information exchanged between signaller and train driver so as to ensure/continue railway operation in specific situations. The operational instruction exists at both national and European levels.*

…

NTSN Assessment

Would this change the current requirements, such that GB industry practice is affected?	Yes
Is adopting the TSI text a viable option?	No
Is retaining the NTSN text a viable option?	No
Does the new NTSN text contain different technical requirements to the TSI?	Yes

Qualitative Assessment	Appendix C of the OPE TSI (Safety related communications) includes changes to the terminology of 'written orders', effectively replacing this with 'operational instructions'. In the OPE TSI, operational instructions are defined as either harmonised European instructions or National instructions. Due to the need to keep European instructions for ERTMS and need for harmonisation with this, these terms should be incorporated without modification into the OPE NTSN. However, the definitions in Appendix J should be amended slightly for the OPE NTSN to reflect EU-Exit. The change in terminology and definitions clarifies that these instructions do not need to be delivered in written format and can be issued verbally, as is current practice in GB so these may be introduced in the OPE NTSN as an improvement to clarity without any quantifiable impact.
Assessment of costs/benefits	Costs: None (no change to requirements as, to the extent these are used, equivalent written orders were in the previous Appendix A document). Benefits: Small, non-monetised (consistency of terminology across Europe for ERTMS).
Proposed NTSN change	***Term*** / ***Definition*** … / … *European instruction* / *An operational instruction giving similar content to train drivers in the UK and the European Union in order for them to answer in a similar manner to similar situation.* …

	National instruction	*An instruction defined by an infrastructure manager which covers situations specific to a Class B system or the transition between class A and class B systems.*
	…	
	Operational instruction	*Formal information exchanged between signaller and train driver so as to ensure/continue railway operation in specific situations.*
	…	

B.7 Definitions

Item 7-1 – Appendix J - Definition references

NTSN Summary	
Item	7-1
NTSN section	Appendix J
Description	Definition references
Preferred Option	GB specific change
Alignment	Alignment of principles
OPE TSI (Regulation (EU) 2019/773)	
Appendix J ***Glossary*** *The definitions in this glossary refer to the use of terms in this NTSN OPE.* *For the purpose of this Regulation, the definition in Article 2 of Directive (EU) 2016/797 and in point 2.2 of Locomotives and passenger rolling stock TSI shall apply.*	
NTSN Assessment	
Would this change the current requirements, such that GB industry practice is affected?	No
Is there a reason this change should not be made to the NTSN?	Yes
Qualitative Assessment	Directive (EU) 2016/797 has not been transposed into UK law, so should not be referenced in the NTSN. There are 45 definitions in Article 2 of Directive (EU) 2016/797, of which 15 are used in the OPE NTSN. Equivalent definitions for all of these are included in the Railways (Interoperability) Regulations 2011 (as amended) and Railways and Other Guided Transport Systems (Safety) Regulations 2006 (as amended) which are either identical to, or not materially different from, the definitions in Article 2 of Directive (EU) 2016/797. Therefore, this reference can be excluded from the OPE NTSN without any change to UK definitions or difference from the TSI. The reference to train formation and rolling stock definitions in point 2.2. of the LOC&PAS NTSN should be included for alignment with references in the TSI.
Assessment of costs/benefits	No impact (no change to requirements)
Proposed NTSN change	***Appendix J*** ***Glossary***

	The definitions in this glossary refer to the use of terms in this NTSN. *For the purpose of this NTSN, the definitions in regulation 2 of the Railways (Interoperability) Regulations 2011 and in point 2.2 of the LOC&PAS NTSN shall apply.*

Item 7-2 – Appendix J – New definitions

NTSN Summary	
Item	7-2
NTSN section	Appendix J
Description	End of authority passed without permission
Preferred Option	Adopt TSI text
Alignment	Full alignment

OPE TSI (Regulation (EU) 2019/773)

Term	***Definition***
…	…
End of authority passed without permission	*An end of authority passed without permission is any occasion when a train proceeds beyond the end of authority in the following circumstances:* *— A trackside signal at danger, or an order to STOP where an ATP is not operational,* *— The end of a movement authority provided in an ATP,* *— A point communicated by verbal or written authorisation laid down in regulations,* *— Stop boards,* *— Hand signals.* *This covers movement authority as described in ETCS and authority to move covered by instructions/signalling.* *Any case in which a vehicle without any traction unit attached or a train that is unattended runs away is not included.*

…

Evacuation	*Evacuation of a train is when all passengers are instructed to leave the train and go on to the infrastructure under the supervision of on-board staff. On-board staff having agreed with the signaller or other responsible infrastructure manager staff, that it is safe to do so.*

…

Exceptional transport ~~loads~~	*A vehicle and/or the load carried which because of construction/design, dimensions or weight does not meet the parameters of the route and requires special authority for the movement and may require special conditions over part or its entire journey. ~~A load carried on a rail vehicle, for example a container, swap body or other traffic where the rail vehicle size and/or axle loading requires special authority for the movement and/or the application of special conditions of travel for all or part of the journey.~~*

…

NTSN Assessment

Would this change the current requirements, such that GB industry practice is affected?	No
Is there a reason this change should not be made to the NTSN?	No
Qualitative Assessment	For 'End of authority passed without permission' requirements have been added to Appendix B of the OPE TSI. A corresponding definition for 'End of authority passed without permission' has been provided, and a definition should be included in the OPE NTSN. This definition is not contradictory to any related UK definition and should be used in the NTSN for alignment with the TSI. Similarly, for 'Evacuation', the definition is not contradictory to any related UK definition and should be used in the NTSN for alignment with the TSI. For exceptional transport, the change to this definition in the TSI would not materially change the interpretation, so the definition should be updated in the NTSN for alignment with the TSI.
Assessment of costs/benefits	No impact (no change to requirements)

Item 7-3 – Appendix J – Incident

NTSN Summary	
Item	7-3
NTSN section	Appendix J
Description	Incident
Preferred Option	Keep NTSN text
Alignment	Alignment of principles

OPE TSI (Regulation (EU) 2019/773)

Term	***Definition***
…	*…*
Incident	*As defined in Article 3 of Directive (EU) 2016/798 ~~2004/49/EC~~.*

NTSN Assessment	
Would this change the current requirements, such that GB industry practice is affected?	No
Is there a reason this change should not be made to the NTSN?	Yes
Qualitative Assessment	Directive (EU) 2016/798 has not been transposed into UK law, so cannot be directly referenced, but the definition referred to has been checked for consistency. The definition of '*incident' in this has changed from 'any occurrence, other than accident or serious accident, associated with the operation of trains and affecting the safety of operation*' to '*any occurrence, other than an accident or serious accident, affecting the safety of railway operations.*' This change would not have any material impact on the interpretation of an incident, so the current NTSN reference can be kept without introducing any material difference.
Assessment of costs/benefits	No impact (no change to requirements)

B.8 Regulatory framework

Item 8-1 – Appendix I - Open points

NTSN Summary	
Item	8-1
NTSN section	Appendix J
Description	Open Points
Preferred Option	Keep NTSN text
Alignment	Alignment of principles
OPE TSI (Regulation (EU) 2019/773)	

Appendix I~~List of open points (see point 4.4)~~

List of areas for which national rules may continue to apply according to Article 8 of Directive (EU) 2016/798~~Common operational principles and rules~~

1. AREAS FOR NATIONAL RULES

Shunting

Signalling rules

Rules related to the operational use of the national signalling system

Maximum speeds in degraded mode including running on sight

Running at caution

Local operational rule

Relating to specific local conditions where additional information may be needed — this is limited to requirements not covered by this Regulation

Operation during works

Safe operation of test train

Train visibility — Front end (see 4.2.2.1.2)

Existing Non TSI conform vehicles

Managing an emergency situation and emergency responses (see point 4.2.3.7)

Role of local/national authorities and emergency services

Notification of accidents and incidents: national instructions on modalities for notifications to authorities

Safety-related communications terminology (see Appendix C)

National operational instructions

Requirements on route knowledge under the national transposition of Directive 2007/59/EC (Train Driver Directive)

2. LIST OF OPEN POINTS

Exceptional transport

Timetable (see 4.2.1.2.3)

Additional information

Recording of supervision data outside the train (see 4.2.3.5.1)

Additional information

Recording of supervision data on-board the train (see 4.2.3.5.2)

Additional information

Professional competences (see point 4.6)

— *Staff with safety critical tasks other than train drivers;*

— *Additional information for staff undertaking the safety critical tasks associated with accompanying a train other than train driver;* — *Additional information for staff undertaking the safety critical tasks associated with the last preparation of a train before it is scheduled to cross a border and work beyond any location(s) designated as the 'frontier' in the network statement of an infrastructure manager and included in its safety authorization.* ***Health and safety conditions (see point 4.7)*** — *Staff with safety critical tasks other than train drivers;* — *Additional information for staff undertaking the safety critical tasks associated with accompanying a train other than train driver;* — *Alcohol limits (see 4.7.1).* ***Common operational principles and rules (See 4.4 and Appendix B)*** — *Sanding — automatic sanding equipment and report in case of use of the sanding equipment;* — *Failure of level crossing — additional information;* ***Safety-related communications terminology (see Appendix C)*** *Additional terms* ***Operations in long tunnels (see 4.3.5)*** *Additional information*

NTSN Assessment	
Would this change the current requirements, such that GB industry practice is affected?	No
Is there a reason this change should not be made to the NTSN?	Yes
Qualitative Assessment	Appendix I in the OPE TSI now lists explicit areas for national rules and open points that have been introduced in the TSI to assist EU countries with reducing their national rules. This is not a change to the requirements in the TSI, but effectively a clarification. The basis for this, Directive (EU) 2016/798, is specific to the regulatory framework in the EU and has not been transposed into UK law. Therefore, there is no legal basis to include this text in the OPE NTSN, and no necessary reason to do so. This is not a divergence from the TSI requirements, as the same areas for national rules and open points remain implicit in the NTSN, so there is no impact of excluding this list.
Assessment of costs/benefits	No impact (no change to requirements)

B.9 References to legislation/supporting documents

Item 9-1 – Appendix A – ERTMS rules and principles

NTSN Summary	
Item	9-1
NTSN section	Appendix A
Description	ERTMS rules
Preferred Option	Adopt TSI text

Alignment	Full alignment
OPE TSI (Regulation (EU) 2019/773)	
Appendix A ***ERTMS operational principles and rules*** *The operational rules for ERTMS/ETCS and ERTMS/GSM-R are specified in the ~~Technical~~ Document ~~"ETCS and GSM-R rules and principles — version 4" published on the ERA website (www.era.europa.eu).~~ 'ERTMS operational principles and rules — version 5' issued on 9.4.2019.*	
NTSN Assessment	
Would this change the current requirements, such that GB industry practice is affected?	No
Is there a reason this change should not be made to the NTSN?	No
Qualitative Assessment	The ERTMS Operational Principles and Rules document referenced in Appendix A of the OPE NTSN has been updated from version 4 to version 5. This contains the principles and harmonised rules for the operation of ERTMS; the purpose being to develop a fully harmonised ERTMS rule book. Version 5 further harmonises some ERTMS rules and makes various minor improvements. Version 5 should be adopted in the NTSN as a legacy version should not continue to be referenced. When Version 5 was published in 2019, the UK assessed changes to this for confirmation that this would not have any negative impact on GB rail operations. No need has been identified for a GB specific version of this document, but this could be considered in future if projects were to raise concerns with specific areas of the ERTMS rules. Appendix A in the OPE TSI applies from June 2024 to allow a period of transition. This should be reflected in the OPE NTSN for complete alignment with Europe in this area and to allow a similar period of transition.
Assessment of costs/benefits	Costs: No direct costs Benefits: Alignment with ERTMS specification (non-monetised)

Item 9-2 – Appendix C - Monitoring instructions

NTSN Summary	
Item	9-2
NTSN section	Appendix C
Description	Monitoring instructions
Preferred Option	GB specific change
Alignment	Alignment of principles
OPE TSI (Regulation (EU) 2019/773)	
C2. Operational instructions … *5. Monitoring of processed operational instruction* *As part of the compliance with Regulation (EU) 2018/762 and Directive (EU) 2016/798, the infrastructure manager and railway undertaking shall monitor the processes of delivery and use of the operational instructions.* …	

NTSN Assessment	
Would this change the current requirements, such that GB industry practice is affected?	No
Is there a reason this change should not be made to the NTSN?	Yes
Qualitative Assessment	Directive (EU) 2016/798 has not been transposed into UK law. Regulation (EU) 2018/762 refers to Regulation 1078/2012 (common safety method for monitoring to be applied by RUs, IMs after receiving a safety certificate or safety authorisation, and by entities in charge of maintenance) which sets out the requirements for monitoring. This is incorporated in the Railways and Other Guided Transport Systems (Safety) Regulations 2006 (as amended) under Regulation 5(1)(b) so the requirement is still valid in the OPE NTSN, but the reference to the legislative basis for this should be to ROGS. This has no specific costs or benefits as it is reinforcing an existing requirement under separate legislation.
Assessment of costs/benefits	No impact (no change to GB requirements)
Proposed NTSN change	***C2. Operational instructions*** … *5. Monitoring of processed operational instruction* *As part of the compliance with the Railways and Other Guided Transport Systems (Safety) Regulations 2006 (as amended), the infrastructure manager and railway undertaking shall monitor the processes of delivery and use of the operational instructions.* …

B.10 Implementation

Item10-1 – Implementation principles

NTSN Summary	
Item	10-1
NTSN section	7.1.
Description	Implementation principles
Preferred Option	GB specific change
Alignment	Alignment of principles

OPE TSI (Regulation (EU) 2019/773)

7. IMPLEMENTATION

7.1. Principles

In accordance with Article 9 of Directive (EU) 2016/798, railway undertakings and infrastructure managers shall ensure compliance with this Regulation under their SMS. ~~*Implementation of this NTSN and conformity with the relevant points of this NTSN must be determined in accordance with the UK national implementation plan which was published in September 2016.*~~

~~*This plan must take into account:*~~

~~*(a) the specific human factors issues associated with operating any given line;*~~

~~*(b) the individual operating and safety elements of each line involved; and*~~

~~*(c) whether implementation of the element(s) under consideration is to be:*~~

~~- for all trains on the line, or not,~~ ~~- only for certain lines,~~ ~~- applicable on all lines,~~ ~~- applicable to all trains running on the network;~~ ~~(d) the relationship with implementation of the other subsystems (control-command and signalling, rolling stock, etc.).~~ ~~At this time any specific exceptions that may be applicable should be taken into account and documented as part of the plan.~~ ~~The implementation plan must take into account the various levels of potential for implementation from any of the following events, namely when:~~ ~~(a) a railway undertaking or infrastructure manager commences operations;~~ ~~(b) a renewal or upgrade to the existing operational systems of a railway undertaking or infrastructure manager is introduced;~~ ~~(c) new or upgraded infrastructure, energy, rolling stock or command control and signalling subsystems, requiring a corresponding set of operating procedures, are put into service.~~

NTSN Assessment	
Would this change the current requirements, such that GB industry practice is affected?	No
Is there a reason this change should not be made to the NTSN?	Yes
Qualitative Assessment	The principles of the OPE TSI text should be incorporated in the OPE NTSN but Directive (EU) 2016/798 has not been transposed into UK law, so cannot be directly referenced. Instead, the equivalent reference should be to ROGS. The current OPE NTSN text setting out the requirements of what should be included in a National Implementation Plan (NIP) was taken from the previous OPE TSI. This is no longer necessary or relevant and should be removed. Reference to the UK's NIP should be retained only until a review of this has been undertaken for any explicit areas of misalignment with the OPE TSI and these are reflected either in the OPE NTSN and corresponding Guidance Note. Once this is complete, there will no longer be a requirement for the NIP and reference to this in the OPE NTSN should be removed.
Assessment of costs/benefits	No impact (no change to requirements)
Proposed NTSN change	***7. IMPLEMENTATION*** ***7.1. Principles*** *In accordance with regulation 5 of The Railways and Other Guided Transport Systems (Safety) Regulations 2006 (as amended), railway undertakings and infrastructure managers shall ensure compliance with this NTSN under their SMS.* *Implementation of this NTSN and conformity with the relevant points of this NTSN shall ~~must~~ be determined in accordance with the UK national implementation plan which was published in September 2016.*

Item 10-2 – Implementation guidelines

NTSN Summary	
Item	10-2
NTSN section	7.2.
Description	Implementation guidelines

Preferred Option	Adopt TSI text
Alignment	Full alignment
OPE TSI (Regulation (EU) 2019/773)	
~~***7.2. Implementation guidelines***~~ ~~*There are three distinct elements to implementation:*~~ ~~*(a) confirmation that any existing systems and processes comply with the requirements of this NTSN;*~~ ~~*(b) adaptation of any existing systems and processes to comply with the requirements of this NTSN;*~~ ~~*(c) new systems and processes arising from implementation of other subsystems*~~ ~~*- new/upgraded conventional lines (infrastructure/energy),*~~ ~~*- new or upgraded ETCS signalling installations, GSM-R radio installations, hot axle box detectors, etc. (control-command and signalling),*~~ ~~*- new rolling stock (rolling stock)*~~	
NTSN Assessment	
Would this change the current requirements, such that GB industry practice is affected?	No
Is there a reason this change should not be made to the NTSN?	No
Qualitative Assessment	Following from Item 10-1, this text is unnecessary and removing this would not result in a change to requirements and operational practice. It should be removed from the NTSN for closer alignment with the structure of the TSI.
Assessment of costs/benefits	No impact (no change to requirements)

Annex C Further considerations for Regulatory Impact Assessment

C.1 Rationale for intervention

C.1.1 Due to the recent OPE TSI change, the rail interoperability regulations between the UK and EU will start to diverge without a corresponding change to the OPE NTSN. Regulatory intervention is the only way to resolve this.

C.1.2 These regulations primarily affect Railway Undertakings and Infrastructure Managers. None of the proposed changes are expected to have an immediate impact on UK operations, but the OPE NTSN needs to be changed to:

- Increase regulatory flexibility to allow innovation, for example changes to the rule book language.
- Enable harmonised operational instructions and reflect latest Europe-wide ERTMS operational rules and principles.
- Allow UK operational practice that was incorrectly captured in the OPE TSI to continue, for example requirements for rear end freight signals.

C.2 Justification for proportionality of assessment

C.2.1 For Regulation (EU) 2019/773, the European Union Agency for Railways (ERA) produced an impact assessment[4]. This does not include a detailed clause by clause assessment but estimates an overall EU-wide costs of €20m and benefits of €20m p.a. based on assumed improvement in efficiency of cross-border traffic. Rescaling this estimate by the number of cross-border connections for GB compared to the estimated total number of EU cross-border links with operational passenger or freight services (1/202[5]) suggests overall costs and annual benefits would be **less than £100k**. This illustrates an upper bound on the estimate of the impact. An estimate for the proposed OPE NTSN changes would be much less than this as:

a This estimate is based on specific operational challenges for European cross-border checks which are not relevant for GB.

b The changes related to RINF and route compatibility checks are the key driver of this estimate and are not proposed for inclusion in the OPE NTSN.

C.2.2 As the recommended changes to the OPE NTSN do not require a change GB practice, there is a high degree of certainty that the impacts of these changes are very small.

C.2.3 All recommended changes to the OPE NTSN are already part of the OPE TSI which had previously been considered by, and partly informed by, the UK rail industry. This assessment is to reconfirm and adapt any changes to take account of EU-Exit.

[4] https://www.era.europa.eu/sites/default/files/library/docs/recommendation/erarec_125_tsi_ope_annex4_impact_assessment_en.docx

[5] https://ec.europa.eu/regional_policy/sources/docgener/studies/pdf/cb_rail_connections_en.pdf

C.2.4 The assessment will include consultation with affected GB Railway Undertakings and Infrastructure Managers to understand any impacts or concerns not captured in the assessment.

C.3 Impact on small and micro businesses

C.3.1 The OPE NTSN sets out requirements for Railway Undertakings and Infrastructure Managers on the GB Mainline. Given the extent of their duties, no small and micro businesses are expected to be in scope of these regulations, so changes to the OPE NTSN are not expected to have any direct effect on small and micro businesses. Therefore, no exemptions are expected to be needed on the basis of disproportionate regulatory burden. Similarly, no blanket exemptions should be granted as the NTSN requirements are to satisfy the essential requirements under the Railways (Interoperability) Regulations 2011.

C.3.2 If there are any small businesses operating rail services within the scope of this NTSN that are not covered in the approved List of Exclusions from the scope of the Railways (Interoperability) Regulations 2011 published by the DfT and consider specific parts of the NTSN to be disproportionate, they should contact RSSB.

Annex D C0 changes – Regulation (EU) 2019/773 amendments recommended to be **excluded from** the OPE NTSN

C0 – No change to NTSN					
Ref	**NTSN Clause**		**Text added in 2019 TSI compared to current NTSN**	**Text removed in 2019 TSI compared to current NTSN**	**RSSB and OPE TSI Mirror Group rationale**
1	2.1.	Staff and trains	A train shall not be considered to be a cross border service, if it complies with the conditions of point (8) of Article 10 of Directive (EU) 2016/798	The train will not be considered to be a cross-border service, if all the vehicles of the train crossing the state border cross it only to the "frontier" location(s).	Should not be updated as reliant on transposition of the Fourth Railway Package.
2	2.2.	Principles	(EU) 2016/798	2004/49/EC	Should not be updated as reliant on transposition of the Fourth Railway Package.
3	4.2.1.1.	General requirements	Contributes	contribute	Staff is plural, so not grammatically correct.
4			,	;	Inconsistent editorial change. Keep semi-colons.
5	4.2.1.2.2.1.	Preparation of the Route Book	Route book	Route Book	Inconsistent editorial change. Keep capitalisation.
6	4.2.1.4.	Documentation for infrastructure manager's staff authorising train movements	Book of forms	Book of Forms	Inconsistent editorial change. Keep capitalisation.
7	4.2.2.1.2.	Front end	front-end	front end	Inconsistent editorial change as the hyphen has been removed in 'rear end'.
8	4.2.3.4.3.	Dangerous goods	inform	advice	Grammatically incorrect – either the NTSN text should be kept or changed to 'information to the driver' or 'informing the driver'.
9	4.2.3.5.	Data recording	Directive (EU) 2016/798	Directive 2004/49/EC	Should not be updated as reliant on transposition of the Fourth Railway Package.
10	4.6.3.1.	Basic elements	Delegated Regulation (EU) 2018/762 or		Not retained EU legislation, so only Regulations 1158/2010 and 1169/2010 apply.
11	6.2.1.	Principles	and the common safety methods on safety management system		The CSM SMS is tied to the Fourth Railway Package, which has not been transposed.

C0 – No change to NTSN					
Ref	**NTSN Clause**		**Text added in 2019 TSI compared to current NTSN**	**Text removed in 2019 TSI compared to current NTSN**	**RSSB and OPE TSI Mirror Group rationale**
12	7.2.2.	List of UK specific cases	7.2.2.2. Permanent specific case Ireland and the UK for Northern Ireland For the implementation of point 4.2.2.1.3.2, trains which are operated solely on the 1 600 mm track gauge system network of Ireland and Northern Ireland shall use 2 steady red lights as train rear end signal.		The OPE NTSN does not apply to Northern Ireland, so the specific case for Northern Ireland should not be included.
13	Appendix H Point 1	General provisions on the European vehicle number	in accordance with Appendix 6 of Annex II to Commission Decision (EU) 2018/1614. The EVN shall be changed in accordance with point 3.2.2.8 of Annex II to Implementing Decision (EU) 2018/1614. The EVN may be changed at the request of the keeper in accordance with point 3.2.2.9 of Annex II to Implementing Decision (EU) 2018/1614.	according to the codes defined in Commission Decision 2007/756/EC, Appendix 6. The European Vehicle Number shall be changed when it does not reflect the interoperability capability or technical characteristics according to this Appendix due to technical modifications of the vehicle. Such technical modifications may require a new authorisation to place into service.	Appendix H of Regulation (EU) 2019/773 is not applicable. Amendments made to Commission Decision (EU) 2018/1614 by the Railways (Interoperability) (Miscellaneous Amendments and Revocations) (EU Exit) Regulations 2020 [S.I. 2020/318] make Commission Decision 2007/756/EC the NVR Decision in Great Britain.
14	Appendix H Point 3	Wagons	Decision (EU) 2018/1614	NVR-decision 2007/756/EC	
15	Appendix J	Glossary – Accident	(EU) 2016/798	2004/49/EC	Should not be updated as reliant on transposition of the Fourth Railway Package. Although note, the definition of 'accident' which this relates to is identical in both Directives.
16		Glossary – EC	EC - European Community		Not used, other than references to EC Directives so does not need to be added.
17		Glossary – ERATV	ERATV European Register of Authorised Types of Vehicles		Not used in the NTSN so does not need to be added.

C0 – No change to NTSN					
Ref	**NTSN Clause**		**Text added in 2019 TSI compared to current NTSN**	**Text removed in 2019 TSI compared to current NTSN**	**RSSB and OPE TSI Mirror Group rationale**
18		Glossary – RINF	RINF Register of Infrastructure		Not used in the NTSN so does not need to be added.
19		Glossary – TSI	TSI - Technical Specification for Interoperability		Not used in the NTSN so does not need to be added.
20		Glossary – TSIs	Locomotives and passenger rolling stock (LOC&PAS) TSI - Commission Regulation (EU) No 1302/2014 of 18 November 2014 concerning a technical specification for interoperability relating to the 'rolling stock — locomotives and passenger rolling stock' subsystem of the rail system in the European Union…		References to other TSIs should not be added and references to other NTSNs are not necessary.

Annex E C1 changes – Regulation (EU) 2019/773 amendments recommended to be **included in** the OPE NTSN

C1 – Change NTSN with no impact					
Ref	**NTSN Clause**		**Text added in 2019 TSI compared to current NTSN**	**Text removed in 2019 TSI compared to current NTSN**	**RSSB and OPE TSI Mirror Group rationale**
1	1.1.	Technical scope	covers	concerns	Does not change the meaning.
2			‘ ’ (Single quotes)	" " (Double quotes)	Editorial change.
3				Further information on this subsystem is provided in Chapter 2.	Removing unnecessary text. Does not change the meaning.
4	2.	Description of Subsystem/ Scope		SUBSYSTEM/	Should be removed.
5				2.1 Subsystem The “operation and traffic management” subsystem is described in Schedule 3 to the Railways (Interoperability) Regulations 2011 as: “The procedures and related equipment enabling a coherent operation of the various structural subsystems, during both normal and degraded operation, including in particular train composition and train driving, traffic planning and management. The professional qualifications which may be required for carrying out cross-border services.” 2.2 Scope This NTSN applies to the “operation and traffic management” subsystem of infrastructure managers (hereinafter referred to as “IM”) and railway undertakings (hereinafter referred to as “RU”) related to the operation of trains on the GB rail system as defined in Chapter 1.2.	Currently provides clarification. But removing the text would not change the technical content and would allow the heading numbers to align with the TSI for the rest of section 2.
6	2.1.	Staff and trains	without prejudice to	as provided for in	Does not change the meaning.
7			of the European Parliament and of the Council		Does not change the meaning.

C1 – Change NTSN with no impact					
Ref	**NTSN Clause**		**Text added in 2019 TSI compared to current NTSN**	**Text removed in 2019 TSI compared to current NTSN**	**RSSB and OPE TSI Mirror Group rationale**
8			its	his	Editorial change. Note, occurrences throughout the document should be changed.
9	2.2.	Principles		(as set out in Chapter 4)	Does not change the meaning.
10				principally	Does not change the meaning
11			railway undertakings and infrastructure managers	RU and IM	Editorial change. Note, occurrences throughout the document should be changed.
12			shall	must	Editorial change. Note, occurrences throughout the document should be changed.
13			set-up	set up	Editorial correction.
14			non TSI conform		Does not change the meaning but improves clarity. Note, 'TSI' should be replaced with 'NTSN' in the update.
15	2.3.	Applicability to existing non TSI conform vehicles and infrastructure	, of vehicles and infrastructure that are important for their operational function in the context of this Regulation.	, trains and vehicles which are important for operation.	Does not change the meaning but improves clarity. Note, 'Regulation' should be replaced with 'NTSN' in the update.
16			Those physical elements are specified in the structural TSIs covering other subsystems than operation and traffic management. They have to be assessed according to the procedures defined in those TSIs.	The design criteria for these elements are described in the NTSNs covering other subsystems such as rolling stock. In the context of this NTSN it is their operational function that is considered.	Does not change the meaning but improves clarity. Note, 'TSI' should be replaced with 'NTSN' in the update.
17			None of the provisions of this Regulation shall be used to justify a national rule under a structural TSI.		Mirror TSI text but change 'Regulation and 'TSI' to 'NTSN' as this reflects the current regulatory framework of NTSNs and NTRs and simply clarifies current situation.

C1 – Change NTSN with no impact					
Ref	**NTSN Clause**		**Text added in 2019 TSI compared to current NTSN**	**Text removed in 2019 TSI compared to current NTSN**	**RSSB and OPE TSI Mirror Group rationale**
18	3.2.	Essential requirements (table)	Title	title	Editorial change.
19			Accessibility (column added)		Columns should be added to match Essential Requirements in Schedule 2 to the Railways (Interoperability) Regulations 2011.
20			2.6.4 (column added)		
21			4.2.1.2.1. Driver's Rule Book	4.2.1.2.1. Rule Book	Should reflect section heading, so dependent on treatment of changes to section 4.2.1.2.1, 4.2.2.5, 4.2.2.7.2. and 4.2.2.8.
22			4.2.2.5 Route Compatibility and Train composition	4.2.2.5 Train composition	
23			4.2.2.5.1. Route Compatibility (row added)		
24			4.2.2.5.1. Train composition (row added)		
25			4.2.2.7.2. Pre-departure Data	4.2.2.7.2. Data required	
26			4.2.2.8. Requirements for Signal and lineside marker sighting	4.2.2.8. Requirements for signal and line-side marker sighting	
27			Additional information on infrastructure and vehicles (row added)		
28			Infrastructure (row added)		
29			vehicles (row added)		
30	4.1.	Introduction		Taking into account all the relevant essential requirements, the "operation and traffic management" subsystem, as described in point 2.2, covers only the elements specified in this Chapter.	Removing unnecessary text. Does not change the meaning.
31	4.2.1.1.	General requirements	Documentation	documentation	Editorial change.
32				,	Editorial change.
33			2.1	2.2.1	Reference needs to be updated for consistency with section 2.1/2.2 (C1, Ref 5).

C1 – Change NTSN with no impact					
Ref	**NTSN Clause**		**Text added in 2019 TSI compared to current NTSN**	**Text removed in 2019 TSI compared to current NTSN**	**RSSB and OPE TSI Mirror Group rationale**
34	4.2.1.2.	Documentation for drivers	; they may be paper based or in electronic format.		Adds flexibility but does not mandate a change to existing operational practice, so no impact on GB practice.
35	4.2.1.2.1.	Driver's Rule Book	The railway undertaking shall be	The railway undertaking is	Does not change the meaning.
36				compiling	Covered by changes to C1 Ref 37.
37			and compile it in such a way that it is complete and accurate, and the driver's application of all operational rules is enabled.		Redrafting (text moved from below) so no change to requirements.
38				The railway undertaking must compile the Driver's Rule Book in such a way that the driver's application of all operational rules is enabled.	Redrafting (text moved higher up).
39			language(s)	language	Does not change the meaning.
40			The railway undertaking's process for preparing...	The process for preparing...	Does not change the meaning but adds clarity.
41				The railway undertaking must ensure that the content of the Driver's Rule Book is complete and accurate.	Redrafting (text moved higher up).
42	4.2.1.2.2.	Description of the line and the relevant line-side equipment associated with the lines worked over		(which can either be a traditional document or computer-based).	Adds flexibility but does not mandate a change to existing operational practice, so no impact on GB practice.
43	4.2.1.2.2.2.	Modifications to information contained within the Route Book		The infrastructure manager must ensure that the content of the documentation provided to the railway undertaking(s) is complete and accurate. The railway undertaking must ensure that the content of the document grouping the modifications	Redrafting – requirements in the previous section. See Annex B, Item 1-2.

C1 – Change NTSN with no impact					
Ref	**NTSN Clause**		**Text added in 2019 TSI compared to current NTSN**	**Text removed in 2019 TSI compared to current NTSN**	**RSSB and OPE TSI Mirror Group rationale**
				to information contained within the Route Book is complete and accurate.	
44	4.2.1.4.	Documentation for infrastructure manager's staff authorising train movements	all its	his	Does not require a change to operational practice.
45	4.2.2.1.3.1.	Passenger trains	rear end	rear-end	Editorial change for consistency.
46			signal	indication	Does not change the meaning.
47			2	two	Editorial change.
48	4.2.2.5.1.	Train composition	according to the allocated path:		No change to requirement but improves clarity.
49			(a) all vehicles composing a train including their loads — shall be compatible with all the requirements applicable on the routes over which the train shall run; — shall be fit to run at the maximum speed at which the train is scheduled to run; (b) all vehicles on the train shall remain within their specified maintenance interval for the duration (in terms of both time and distance) of the journey being undertaken; (c) the train composed of vehicles including their loads, shall comply with the technical and operational constraints of the route concerned and be within the maximum length permissible for forwarding and receiving terminals. (d) the railway undertaking is responsible for ensuring that all vehicles composing the train including their load are technically fit for the	(a) the vehicles - all vehicles in the train must be in compliance with all the requirements applicable on the routes over which the train will run, - all vehicles on the train must be fit to run at the maximum speed at which the train is scheduled to run; (b) all vehicles on the train must be currently within their specified maintenance interval and will remain so for the duration (in terms of both time and distance) of the journey being undertaken; (c) the train - the combination of vehicles forming a train must comply with the technical constraints of the route concerned and be within the maximum length permissible for forwarding and receiving terminals; (d) the railway undertaking is responsible for ensuring that the train is technically fit for the journey to be undertaken and remains so	No changes to requirements but improves readability.

C1 – Change NTSN with no impact					
Ref	**NTSN Clause**		**Text added in 2019 TSI compared to current NTSN**	**Text removed in 2019 TSI compared to current NTSN**	**RSSB and OPE TSI Mirror Group rationale**
			journey to be undertaken and remains so throughout the journey.	throughout the journey; (e) the weight and axle load; (f) the weight of the train must be within the maximum permissible for the section of route, the strength of the couplings, the traction power and other relevant characteristics of the train. Axle load limitations must be respected; (g) the maximum speed of the train - the maximum speed at which the train can run must take into account any restrictions on the route(s) concerned, braking performance, axle load and vehicle type; (h) the kinematic envelope; (i) the kinematic gauge of each vehicle (inclusive of any load) in the train must be within the maximum permissible for the section of route.	
50			The railway undertaking may need to consider additional constraints due to the type of braking regime or traction type on a particular train (see point 4.2.2.6).	Additional constraints may be required or imposed due to the type of braking regime or traction type on a particular train.	Does not change the meaning.
51				The infrastructure manager must inform the railway undertaking of the changes on characteristics of the allocated path change, as soon as these changes occur. The elements that must be checked in order to ensure the train's compliance with the allocated path are set out in Appendix D.	Does not have any impact on current practice.
52	4.2.2.6.1.	Minimum requirements of the braking system	LOC&PAS and WAG NTSNs	RST NTSN	Reference should be updated.
53	4.2.2.6.2.	Braking performance and	(2) The	(2) Additionally, the	Does not change the meaning.
54			abovementioned	above mentioned	Editorial change.

C1 – Change NTSN with no impact					
Ref	**NTSN Clause**		**Text added in 2019 TSI compared to current NTSN**	**Text removed in 2019 TSI compared to current NTSN**	**RSSB and OPE TSI Mirror Group rationale**
55		maximum speed allowed	in a non-discriminatory way.		GB does not use brake weight percentages. Train braking in GB is covered by a Railway Group Standard that was unaffected by these changes when previously considered.
56			non TSI conform		Does not change the meaning but improves clarity.
57			and	or	Correction – point 1 must be provided, point 2 is optional.
58			;	. If the infrastructure manager has provided the information of point (2), the railway undertaking has to express the braking capability by using the same information,	In GB we do not use brake weight percentages, so this is not relevant. Train braking in GB is covered by a Railway Group Standard that was unaffected by these changes when previously considered.
59	4.2.2.7.1.	General requirement	temporarily		Does not change the meaning but improves clarity.
60	4.2.2.7.2.	Data required	Pre-departure data	Data required	Does not change the meaning but improves clarity.
61			The railway undertaking shall ensure that the following data required for safe and efficient operation is made available to the infrastructure manager(s) prior to the departure of the train	The data required for safe and efficient operation and the process by which this data must be forwarded must comprise:	Editorial change (text moved from below).
62				The railway undertaking must ensure that this data is made available to the infrastructure manager(s) prior to the departure of the train.	Editorial change (text moved above).
63			does	will	This reflects current operational practice.

C1 – Change NTSN with no impact					
Ref	**NTSN Clause**		**Text added in 2019 TSI compared to current NTSN**	**Text removed in 2019 TSI compared to current NTSN**	**RSSB and OPE TSI Mirror Group rationale**
64	4.2.2.8.	Requirements for signal and line-side marker sighting	lineside	line-side	Editorial change.
65	4.2.3.4.1.	General requirements	may	can	Editorial change. Note, occurrences throughout the document should be changed.
66	4.2.3.4.2.1.	Data required for train position reporting	Data required for train position reporting and predicted hand over time	Data required for train position reporting	Editorial change – sections combined.
67			have a process which enables an indication of the estimated number of minutes of deviation from the scheduled time a train is scheduled to be handed over from one infrastructure manager to another; this shall include information on service disruption (description and location of problem).		Editorial change – text moved from 4.2.3.4.2.2.
68			provide the specific data according to Commission Regulation (EU) No 1305/2014 (8) (Telematics Applications for Freight — TAF TSI) and Commission Regulation (EU) No 454/2011 (9) (Telematics Applications for Passengers — TAP TSI)		Explicitly references existing requirements in TAP and TAF NTSNs
69	4.2.3.4.2.2.	Predicted handover time		4.2.3.4.2.2 Predicted handover time The infrastructure manager must have a process, which enables an indication of the estimated number of minutes of deviation from the scheduled time a train is scheduled to be handed over from one infrastructure manager to another. This must include information on service disruption (description and location of problem).	Editorial change – sections combined. See C1, Ref 67.
70	4.2.3.4.3.	Dangerous goods	perform	supervise	Does not change meaning.
71			and Directive 2010/35/EU of the European Parliament and of the Council (11), as applicable		Correcting a reference that was previously missed, but the precise

C1 – Change NTSN with no impact					
Ref	**NTSN Clause**		**Text added in 2019 TSI compared to current NTSN**	**Text removed in 2019 TSI compared to current NTSN**	**RSSB and OPE TSI Mirror Group rationale**
					reference should be to UK legislation.
72	4.2.3.5.	Data recording	in this point 4.2.3.5	in point 4.2.3.5 of this NTSN	Does not change meaning
73	4.3.	Functional and technical specifications of the interfaces	of this Regulation		Does not change meaning but improves clarity. Note, text should be changed to 'of this NTSN'.
74	4.3.6.	Interfaces with the Noise TSI (NOI TSI)	4.3.6. Interfaces with the Noise TSI (NOI TSI)		Should include all interfaces with other NTSNs. Note, 'TSI' should be replaced with 'NTSN'.
75	4.3.7.	Interfaces with the Regulation (EU) No 1300/2014 (12), Person with Reduced Mobility TSI (PRM TSI)	4.3.7. Interfaces with the Regulation (EU) No 1300/2014 (12) , Person with Reduced Mobility TSI (PRM TSI)		
76	4.6.2.2.	Level of knowledge	normal	routine	Does not change meaning.
77	4.6.3.1.	Basic elements	Commission Regulations (EU) No 1158/2010	Commission Regulations (EU) 1158/2010	Editorial change
78	4.7.1.	Introduction	2.1	2.2	Reference needs to be updated.
79	4.8.	Registers of infrastructure and vehicles	Additional information on infrastructure and vehicles	Registers of infrastructure and vehicles	Title should reflect changes to the text below it.
80	4.8.2.	Rolling stock	— whether the vehicle is constructed from materials which may be hazardous in case of accidents or fire (for example, asbestos); the keeper is responsible for the correctness of the data;, — total length of the vehicle, including buffers if existing; the railway undertaking is responsible for the correctness of the data.	The keeper is responsible for the correctness of the data:	Correcting a previous error in the TSI to reflect current operational practice.

C1 – Change NTSN with no impact					
Ref	**NTSN Clause**		**Text added in 2019 TSI compared to current NTSN**	**Text removed in 2019 TSI compared to current NTSN**	**RSSB and OPE TSI Mirror Group rationale**
81	5.1	Definition	Article 2.7 of Directive (EU) 2016/797 defines the 'interoperability constituents'	As defined in regulation 2 of the Railways (Interoperability) Regulations 2011, "interoperability constituents" means "any elementary component, group of components, subassembly or complete assembly of equipment incorporated or intended to be incorporated into a subsystem, upon which the interoperability of the rail system depends directly or indirectly; and the concept of a 'constituent' covers both tangible objects and intangible objects such as software".	Mirror the changes to the TSI text, but with reference to RIR rather than 2016/797. The definition is the same, but cleaner to refer to rather than include in the NTSN.
82	5.2.	List of constituents	is no interoperability constituent	are no interoperability constituents	Editorial change.
83	6.2.1.	Principles	Articles 9 and 10 of Directive (EU) 2016/798	Articles 10 and 11 of Directive 2004/49/EC	Update reference but to corresponding UK regulations.
84				day to day	Does not change the meaning.
85			and listed	and are listed	Editorial change.
86	7.2.1.	Introduction	T1	T2	Editorial change, updating reference for consistency.
87	7.2.2.4.		7.2.2.4. This provision has been left intentionally blank		Editorial change for consistency.
88	Appendix A	ERTMS operational principles and rules	ERTMS operational principles and rules	ERTMS/ETCS operating rules	Editorial correction to the document name.
89			operational	operating	Editorial change.
90	Appendix B	Common operational principles and rules	B2. Common operational rules		Editorial change to add header.
91	Appendix B2 Point 1	Sanding	equipment	device	More accurate and flexible description
92			SPAD (Signal Passed At Danger)	SPAD (signal passed at danger)	Editorial change.

C1 – Change NTSN with no impact					
Ref	**NTSN Clause**		**Text added in 2019 TSI compared to current NTSN**	**Text removed in 2019 TSI compared to current NTSN**	**RSSB and OPE TSI Mirror Group rationale**
93	Appendix B2 Point 4.1	Complete failure of front end lights	front end	front-end	Editorial change for consistency.
94	Appendix B2 Point 6	Failure of the audible warning device of a train	The train shall not exceed the permitted speed in the event of the failure of an audible warning device, and shall proceed to the nearest location where the audible warning device may be repaired or the affected vehicle replaced. The driver shall be prepared to stop before passing over any level crossing where the audible warning device is required to be sounded	The train shall not exceed the permitted speed for the failure of an audible warning device to the nearest location where the audible warning device can be repaired or the affected vehicle replaced. The driver shall be able to stop before passing over any level crossing where the audible warning device must be sounded	Redrafting with no expected impacts, but improved clarity.
95	Appendix B2 Point 8	Failure of voice radio communication	8.2. Failure of voice radio communication when the train has entered service All failure types If the driver becomes aware that the primary voice radio communication is failed, the driver shall inform the signaller as soon as practicable using any available means. The driver shall then apply the instructions by the signaller concerning the further movement of the train. On-board Failure A train with a failed voice radio communication may: — continue its service if another means of communication is provided between the train driver and the signaller; or — proceed to the nearest location where the radio may be repaired or the affected vehicle replaced if another means of voice communication is not provided between the driver and the signaller.	8.2. Failure of train radio when the train has entered service When the driver becomes aware that the voice radio is failed, the driver shall inform the signaller as soon as practicable. The driver shall then carry out the formal instructions given by the signaller concerning the further movement of the train. A train with a failed train radio may continue the service: — as long as another means of emergency communication is provided between the driver and the signaller, or — to the nearest location where the radio can be repaired or the affected vehicle replaced as long as another means of communication is provided between the driver and the signaller.	All changes to Point 8.2 either do not change the meaning and add clarification or reflect current GB practice.

C1 – Change NTSN with no impact					
Ref	**NTSN Clause**		**Text added in 2019 TSI compared to current NTSN**	**Text removed in 2019 TSI compared to current NTSN**	**RSSB and OPE TSI Mirror Group rationale**
96	Appendix B2 Point 9	Running on sight	When a driver has to run on sight, the driver shall: — Proceed with caution, controlling the speed having regard to the visibility of the line, so that it is possible within the free visible part to stop short of any vehicle, stop aspect or obstacle on the infrastructure; and — Not exceed the maximum speed for running on sight. This does not apply to unexpected obstacle entering the track zone within the stopping distance.	When a driver has to run on sight, the driver shall: — proceed with caution, controlling the speed, taking into account the line visible in advance, such that it is possible to stop short of any vehicle, stop aspect or obstacle, and — not exceed the maximum speed for running on sight	Reflects current GB practice.
97	Appendix B2 Point 15	Failure of on-board equipment	15. FAILURE OF ON-BOARD EQUIPMENT The railway undertaking shall determine the cases in which a failure of an on-board equipment affects the running of the train. The railway undertaking shall give the necessary information to the driver and/or train crew of what action to take in the case of on-board failures that affect the running of the train. If the driver becomes aware of a failure of any on-board equipment that affects the running of the train, the driver shall: — Inform the signaller of the situation and the restrictions on the train should the train be allowed to continue its mission, — The driver shall not commence or recommence the mission until permission to do so has been granted by the signaller, — If the signaller gives permission for the train to start or continue its mission then the driver shall proceed in accordance with the restrictions placed upon the train, If the signaller does not give permission for the		Reflects current GB practice.

C1 – Change NTSN with no impact					
Ref	**NTSN Clause**		**Text added in 2019 TSI compared to current NTSN**	**Text removed in 2019 TSI compared to current NTSN**	**RSSB and OPE TSI Mirror Group rationale**
			train to commence or recommence its mission then the driver shall follow the instructions given by the signaller.		
98	Appendix B2 Point 16	End of authority passed without permission	16. END OF AUTHORITY PASSED WITHOUT PERMISSION — If the driver becomes aware that the train has passed an end of authority without permission, the driver shall stop the train immediately. — If the train is stopped by ATP/TPS, the driver shall take action to support the emergency brake. — The driver shall inform the signaller. — If the signaller becomes aware that a train has passed an end of authority without permission, then the signaller shall take any necessary action to stop the train immediately. — The driver and signaller shall take any necessary action to protect all movements. When the train is able to continue, the driver shall inform the signaller. The signaller shall set or check the route for the train to continue its journey and issue all necessary instructions		Reflects current GB practice.
99	Appendix B2 Point 17	Failure of trackside equipment including catenary	17. FAILURE OF TRACKSIDE EQUIPMENT INCLUDING CATENARY — The infrastructure manager shall determine whether the failure of trackside equipment (including catenary) affects the safe and/or effective operation of trains. — The infrastructure manager shall provide the necessary instructions to the driver of what action to take in the case of such a failure as referenced in this Regulation in point 4.2.1.2.2.3. — If the driver becomes aware of a failure of any trackside equipment (including catenary) that		Reflects current GB practice.

C1 – Change NTSN with no impact					
Ref	**NTSN Clause**		**Text added in 2019 TSI compared to current NTSN**	**Text removed in 2019 TSI compared to current NTSN**	**RSSB and OPE TSI Mirror Group rationale**
			affects the safe and/or effective operation of trains, the driver shall inform the signaller of the situation as soon as possible and follow the instructions given by the signaller.		
100	Appendix C	Safety-related communications methodology	C1. Oral communication		Editorial change to add header.
101	Appendix C1	Scope and Purpose	and content.		Does not change the meaning but improves clarity.
102	Appendix C1	Safety-related communications methodology	Safety related communication		Editorial change to add header.
103	Appendix C1	Communication Structure	The transmission of safety-related messages shall be short and clear and, as far as possible, without abbreviation. In order to ensure a message is understood and the necessary action may be undertaken, whoever is giving the message shall cover at least the following points:	The voice transmission of safety-related messages shall be short and clear without abbreviation. In particular it shall cover the following points to ensure it is understood and the necessary action can be undertaken, whoever is giving the message shall:	Does not change the requirements
104			indicate	give	Does not change the meaning.
105			function	task	Does not change the meaning.
106			Drivers shall identify themselves by the train running number and the location. Signallers shall identify themselves by the control area or the location of the signal box.		Editorial change to reorder text. Does not change the meaning. See C1 Ref 109.
107				— make sure the message is received and repeated back as required, — if necessary, correct a mistake that has been made in the message, — if necessary, let the person know how they can be contacted.	Editorial change to reorder text. Does not change the meaning. See C1 Ref 109.

C1 – Change NTSN with no impact					
Ref	**NTSN Clause**		**Text added in 2019 TSI compared to current NTSN**	**Text removed in 2019 TSI compared to current NTSN**	**RSSB and OPE TSI Mirror Group rationale**
108				2.2. Emergency messages are intended to give urgent operational instructions that are directly linked with the safety of the railway. For such messages the repetition of the message can be omitted.	Editorial change to reorder text. See C1 Ref 109.
109	Appendix C1	Communication methodology	Whoever is giving the message shall: — Check that the message is received and repeated back as required. As emergency messages are intended to give urgent operational instructions that are directly linked with the safety of the railway, the repetition of these message may be omitted. — if necessary, correct a mistake that has been made in the message, — if necessary, let the person know how they may be contacted.	Drivers shall identify themselves by the train running number and the location. Signallers shall identify themselves by the control area or the location of the signal box.	Editorial change to reorder text.
110	Appendix C1	Communication content	2.3. Communication content		Editorial change to add header.
111			identification	this purpose	Does not change the meaning but improves clarity.
112			… [running number]	running number…	Editorial change.
113			Terminology shall be used in the communication procedure by all the parties: Situation Terminology Term transferring the opportunity to speak to the opposite party ‘Over’ Term confirming that the sent message has been received ‘Received’ Term used to have the message repeated in the event of poor reception or misunderstanding ‘Say again’ Term used to ascertain whether a read-back message exactly matches the sent message		Table replacing previous section 5. Note - ‘Say again’ has changed from ‘Say again (+speak slowly)’

C1 – Change NTSN with no impact					
Ref	**NTSN Clause**		**Text added in 2019 TSI compared to current NTSN**	**Text removed in 2019 TSI compared to current NTSN**	**RSSB and OPE TSI Mirror Group rationale**
			'Correct' Term used to indicate that a read-back message does not match the sent message 'Error (+ I say again)' Term used to keep the other party waiting when there is a temporary break in the communication and the connection is not broken 'Wait' Term used to tell the other party that the communication might be broken but should be resumed later on 'I call again' Term used to indicate that the message has ended 'Out'		
114	Appendix C1	Communication Rules	rules shall be used:	rules must be adopted:	Does not change the meaning.
115			3.1 International Phonetic Alphabet		Editorial change to add header.
116				- in case of interference on the radio or phone,	Requirement removed but no change to GB industry practice.
117			3.2 Numbers		Editorial change to add header.
118	Appendix C1	Terms (General)		5. TERMS (GENERAL) (Full Section - please see word document)	Content reproduced in a table above
119	Appendix C1	Written Orders		WRITTEN ORDERS 6.1 A written order must only be issued when the train is at a standstill and shall be attributed with a unique identification or authorisation number provided by the signaller. 6.2 A written order takes precedence over the related indications provided by trackside signals and/or the DMI except when a lower permitted speed or a lower release speed than the maximum speed prescribed in the written order is applicable. 6.3 A written order should be issued as close as	Replaced by C2 Operational Instructions (with changes considered individually below)

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				practicable to the affected area. 6.4 A written order must only be issued when the driver has identified the train running number and the location of the train / shunting movement. 6.5 A written order must state the following as a minimum: — from where it was issued (signal box …), — at what time and date it was issued, — to which train / shunting movement it refers, — where that train / shunting movement is located, — at which location it applies, — clear, precise, unambiguous instructions, — unique identification or an authorisation number. 6.6 A written order may be transmitted: — physically on paper, or — as verbal instructions to the driver to write down, or — other safe methods of communication to meet the abovementioned requirements. 6.7 When the driver receives a written order the driver shall check that this written order refers to his train/shunting movement and its current location. 6.8 A written order that has been issued can only be revoked by a new written order explicitly referring to the previous one	
120	Appendix C2	Operational instructions	C2 Operational instructions 1. Introduction Railway undertakings and infrastructure managers shall use European instructions in the communication procedure in the following cases: (1) Permission to pass an End of Authority — signal showing a stop aspect/stop indication; (2) Permission to proceed after a trip (ETCS); (3) Obligation to remain at standstill, obligation		The additional European instructions are: (6) Obligation to run on sight; (8) Permission to pass a defective level crossing (9) Obligation to run with power supply restrictions.

C1 – Change NTSN with no impact					
Ref	**NTSN Clause**		**Text added in 2019 TSI compared to current NTSN**	**Text removed in 2019 TSI compared to current NTSN**	**RSSB and OPE TSI Mirror Group rationale**
			to carry out end of mission (ETCS); (4) Revocation of an operational instruction; (5) Obligation to run under restrictions; (6) Obligation to run on sight; (7) Permission to start in Staff Responsible (ETCS) after preparing a movement; (8) Permission to pass a defective level crossing; (9) Obligation to run with power supply restrictions; (10-20) RESERVED The numbers 1 to 20 are reserved for European instructions, numbers 1-5 and 7 are mandatory for ETCS. If an operational instruction related to class B system requires more information than the European instructions, the national instruction may be used instead. In such case, the infrastructure manager may define these requirements in its national instructions. If numbered, the national instructions defined by the individual infrastructure managers shall start from 21 onwards. The national instructions shall contain at least the same content of that for a European instruction.		The term 'European Instruction' will need to be made operable for the NTSN, but the content of this section align with GB practice.
121	Appendix C2	Operational instructions	2. Content An operational instruction shall state the following as a minimum: — from where it was issued (location of signaller), — at what date it was issued (not for verbal instruction), — to which train/shunting movement it refers, — clear, precise, unambiguous instructions, — unique identification provided by the signaller. In addition, depending on the circumstances, an		In the NTSN, it is mandatory for the 'written order' to state: • at what time it was issued; • where the train / shunting movement is located; and • at which location it applies whereas in the TSI, these are discretionary (in addition to ID of the train driver, ID of issuer and

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			operational instruction might also state: — at what time it was issued, — where that train/shunting movement is located, at which location it applies, — ID of train driver; — ID of issuer; — verification (signature or electronic confirmation) that the instruction has been received. Any operational instruction that has been issued to be written down may only be revoked by a European instruction no4 explicitly referring to the unique identification of the instruction to be revoked.		verification). But this is considered to align with current GB practice.
122	Appendix C2	Operational instructions	3. Delivery of the operational instruction A European instruction includes information delivered electronically, verbally, physically on paper or as verbal instructions to be written down by the train driver or by other safe methods of communication with the same level of information. In principle when it is necessary for an operational instruction to be written down by the train driver, the train shall be at standstill. The railway undertaking and the concerned infrastructure manager may jointly undertake a risk assessment which could, as a result, define the conditions under which it is safe to deviate from this principle. An operational instruction shall be delivered as close as practicable to the affected area. An operational instruction takes precedence over the related indications provided by trackside signals and/or the DMI. When a permitted speed		"A European instruction includes information delivered electronically, verbally, physically on paper or as verbal instructions to be written down by the train driver or by other safe methods of communication with the same level of information" means these can be delivered verbally, so does not change current practice and prevents the current misunderstanding that GB has to implement written orders when implementing ETCS.

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Ref	**NTSN Clause**		**Text added in 2019 TSI compared to current NTSN**	**Text removed in 2019 TSI compared to current NTSN**	**RSSB and OPE TSI Mirror Group rationale**
			or a release speed lower than the maximum speed prescribed in the operational instruction is applicable, the lowest speed shall be applied. An operational instruction shall only be issued by the signaller when the train running number has been identified and, if necessary, the location of the train/shunting movement. Before applying the operational instruction, the train driver shall check that this operational instruction refers to her/his train/shunting movement and her/his current or identified location.		
123	Appendix C2	Operational instructions	4. Awareness of the operational instruction The railway undertaking has to define a procedure to ensure that the train driver is aware of an operational instruction until the train has reached the location where it has to be processed. When the operational instruction does not need to be performed immediately after its delivery, it shall be possible for the train driver to retrieve the operational instruction.		2019/773 contains new requirements in relation to awareness of the operational instruction that are not in the NTSN, but these are aligned with operational practice.
124	Appendix C2	Operational instructions	6. European instructions Each field of information contained in a European instruction shall be given its own identifier. While the content and the identifiers shall be used, the format itself is indicative. If a specific field is not to be used in a Member State or on the network of an infrastructure manager, there is no obligation to display this field in the European instruction and no field shall be added.		The NTSN allows instructions to be passed verbally, as is current operational practice, so this is not relevant, but inserted to provide operational flexibility.
125	Appendix C2	Operational instructions	(Template forms for the 9 'European instructions')		These are template forms for the 9 'European instructions'.

C1 – Change NTSN with no impact					
Ref	**NTSN Clause**		**Text added in 2019 TSI compared to current NTSN**	**Text removed in 2019 TSI compared to current NTSN**	**RSSB and OPE TSI Mirror Group rationale**
					The NTSN allows instructions to be passed verbally so these forms are not needed and would not be used. But the forms can be incorporated to maintain alignment of documents and provide operational flexibility.
126	Appendix C2	Operational instructions	Communication of an operational instruction	TERMS (WRITTEN ORDERS)	Editorial change to header.
127	Appendix C2	Operational instructions	'Error during transmission' *(added to the table)*		Not previously explicit in the communication procedure, but no impact of inclusion.
128	Appendix C2	Operational instructions	Terminology shall be used in the communication procedure by all the parties: Situation Terminology Cancelling an operational instruction 'Cancel procedure' If the message is then subsequently to be resumed, the procedure shall be repeated from the start 'Error during transmission' When a transmission error is discovered by the sender, the sender shall request cancellation 'Error (+ prepare new form)' Or 'Error (+ I say again)' Error during read back 'Error (+ I say again)' Misunderstanding: if one of the parties does not fully understand a message, the message shall be repeated 'Say again (+ speak slowly)'	Standard terminology to be used in the communication procedure Cancelling a written order 7.1 Term used to cancel the written order procedure underway: cancel procedure … 7.2 If the message is then subsequently to be resumed, the procedure shall be repeated from the start. Error during transmission 7.3 When a transmission error is discovered by the sender, the sender must request cancellation by sending the following procedure message: error (+ prepare new form …) or: error + I say again and then send the initial message again. Error during read-back 7.4 When the sender discovers an error whilst the message is being read back, the sender shall send the following procedure messages: error + I say again and send the initial message again. Misunderstanding	Editorial change, replacing text in section 7 with a table.

C1 – Change NTSN with no impact					
Ref	**NTSN Clause**		**Text added in 2019 TSI compared to current NTSN**	**Text removed in 2019 TSI compared to current NTSN**	**RSSB and OPE TSI Mirror Group rationale**
				7.5 If one of the parties does not fully understand a message he must ask the other party to repeat the message by using the following text: say again (+ speak slowly)	
129	Appendix C2	Operational instructions		8.3 In order to identify the forms, a unique code word or number relating to the procedure shall be developed.	Not required
130			operational instruction Forms	written order forms	Should be consistent with earlier terminology
131				The glossary shall be composed of two parts: — a listing of terms by subject matter, — a listing of the terms in alphabetical order.	Removing unnecessary text.
132	Appendix F	Professional qualifications – accompanying trains		Professional qualifications – accompanying trains	Editorial change to remove appendix heading.
133	Appendix G	Professional qualifications – preparing trains		Professional qualifications – preparing trains	Editorial change to remove appendix heading.
134	Appendix H	EVN and marking		EVN and marking	Editorial change to remove appendix heading.
135			(EVN)		Added acronym.
136	Appendix I	List of open points	List of areas for which national rules may continue to apply according to Article 8 of Directive (EU) 2016/798	List of open points (see point 4.4) Common operational principles and rules	Changed to reflect section content
137	Appendix J	Glossary	of the European Parliament and of the Council		Does not change the meaning but improves clarity.

C1 – Change NTSN with no impact					
Ref	**NTSN Clause**		**Text added in 2019 TSI compared to current NTSN**	**Text removed in 2019 TSI compared to current NTSN**	**RSSB and OPE TSI Mirror Group rationale**
138	Appendix J	Glossary - Safety-critical task	Safety-critical task - Task performed by staff when they control or affect the movement of a train, which could affect railway safety.	Safety-critical task - Task performed by staff when they control or affect the movement of a train, which could affect the health and safety of persons.	Also consider using the definition from existing standards rather than this definition.
139	Appendix J	Glossary – Siding	Siding - Any track(s) within an operational point which is not used for operational routing of a train.	Siding - Any track(s) within an operational point which is used only for movement other than train movement.	Does not change the meaning
140	Appendix J	Glossary – Train preparation	Train preparation - Ensuring that a train is in a fit condition to enter service, that the train equipment is correctly deployed and the train composition matches the train's designated route(s).	Train preparation - Ensuring that a train is in a fit condition to enter service, that the train equipment is correctly deployed and that the formation of the train matches the train's designated pathway.	Does not change the meaning
141	Appendix J	Glossary – ATP	ATP - Automatic Train Protection		Used in B.2. Point 16 'End of authority passed without permission'.
142	Appendix J	Glossary – ERA	ERA - European Union Agency for Railways	ERA - European Railway Agency	Editorial update to organisation name.
143		Glossary – HABD		HABD - Hot axle box detector	Used only in Appendix D1 of the TSI, so does not need to be included.
144	Appendix J	Glossary – Hz		Hz - Hertz	Not used in the NTSN.
145	Appendix J	Glossary – OSJD	OSJD - Organisation for Cooperation between Railways	OSJD - Organisation for Cooperation of Railways	Editorial update to organisation name.
146	Appendix J	Glossary – TPS	TPS - Train Protection System		Used in B.2. Point 16 'End of authority passed without permission'.
147	Appendix J	Glossary – VKM		VKM - Vehicle keeper marking	Not used in the NTSN.

Annex F Impact matrix for technical and regulatory changes

			Impact Areas							
			A	B	C	D	E	F	G	H
Area	**NTSN Clause**	**Description**	Legal compliance and assurance	Health, safety, and security	Reliability and performance	Design and maintenance	People, process, and systems	Environment/ sustainability	Customer experience and industry reputation	Trade and competition
1) Driver Documentation	4.2.1.2.1.	Rule Book language		✓			✓			✓
	4.2.1.2.2.1.	RU responsibility for Route Book accuracy	✓				✓			
2) RU/IM provision of information	4.2.1.2.2.1.	IM providing information for the Route Book (through RINF & within 15 days)	✓				✓			
	4.2.2.6.2. / 4.8.1	IM providing information through RINF	✓				✓			
	4.2.2.6.2. /4.8.1	IM providing information within 15 days	✓				✓			
	4.8.	Registers of infrastructure and vehicles intro text	✓							
3) Route compatibility	4.2.2.5.1.	Route compatibility	✓	✓	✓		✓			✓
	4.2.2.5.1.	RU responsibilities for train composition					✓			
	Appendix D	Route Compatibility	✓	✓	✓		✓			✓
	Appendix D	Route Book		✓	✓		✓			
4) Signals	4.2.2.1.2.	Front end signal	✓	✓		✓				✓
	4.2.2.1.3.3	Rear end signal	✓	✓		✓				✓
5) FOPs	Appendix B	Fundamental Operational Principles	✓							
6) Communications	Appendix C	Mayday, Mayday, Mayday		✓			✓			
	Appendix J	Operational instructions	✓							
7) Definitions	Appendix J	Definition references	✓							
	Appendix J	New definitions	✓							
	Appendix J	Incident	✓							
8) Regulatory framework	Appendix J	Open Points	✓							
9) Reference to legislation/supporting documents	Appendix A	ERTMS rules and principles			✓		✓			✓
	Appendix C	Monitoring instructions	✓	✓						
10) Implementation	7.1.	Implementation principles	✓							✓
	7.2.	Implementation guidelines	✓							✓

Annex G Consolidated proposed NTSN changes for consultation

G.1.1 Please see accompanying pdf, *'OPE NTSN 2021 Issue 2 Pre-Consultation' (104 pages)*