E I L I A B I L I T Y A N D A V A I L A B I L I T Y
OPERATING RULES

Scope related to:
- Rolling stock: This TSI applies to all rolling stock within the scope of Regulation (EU) No 1302/2014 (LOC&PAS TSI) and Regulation (EU) No 321/2013 (WAG TSI);
- Operational aspects: Alongside with Commission Decision 2012/757/EU (OPE TSI), this TSI applies to the operation of freight wagons which are used on railway infrastructure designated as 'quieter routes'.

WHAT DOES IT CONTAIN?
- Introduction with the technical, risk, and geographical scopes
- Definitions of the subsystem and of the scope
- Essential requirements
- Characteristics of the subsystem, particularly the functional and technical specifications of the subsystem and of the interfaces
- Interoperability constituents
- Conformity assessment and EC verification
- Implementation

WHAT IS A QUIETER ROUTE?
A quieter route means a part of the railway infrastructure with a minimum length of 20 km on which the average number of daily operated freight trains during the night-time as defined in national legislation transposing Directive 2002/49/EC of the European Parliament and of the Council was higher than 12. The list of Quieter Routes can be checked here.

HOW QUIETER ROUTES HAVE TO BE UPDATED?
Member States shall update the list of quieter routes at least every five years after 8 December 2024, shall refer to the last three years preceding the update for which the data is available.

HOW QUIETER ROUTES HAVE TO BE REPORTED?
The Member States which did not supply the quieter routes information in accordance with the Amended TSI Noise should supply them before 1st January 2021 directly in RINF.

FUNCTIONAL AND TECHNICAL SPECIFICATIONS OF THE SUBSYSTEM
There are different sound pressure levels (measured in dB) depending on the following cases:
- Limits for stationary noise
- Limit values for starting noise
- Limits for pass-by noise
- Limits for the driver’s cab interior noise
Note: furthermore there are different thresholds depending on category of rolling stock subsystem and noise within the driver’s cab.
Subsystem rolling stock regarding noise emitted by rolling stock
- Modules: The EC verification shall be performed in accordance with the module(s) described in the table

| SB | EC-Type Examination |
| SD | EC verification based on quality management system of the production process |
| SP | EC verification based on product verification |
| SH1 | EC verification based on full quality management system plus design examination |

- EC verification procedures
  - Stationary noise

<table>
<thead>
<tr>
<th>Category of rolling stock subsystem</th>
<th>LpAeq,T [dB]</th>
<th>LpAeq,T [dB]</th>
<th>LpAmax [dB]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electric locomotives and OTMs with electric traction</td>
<td>70</td>
<td>70</td>
<td>85</td>
</tr>
<tr>
<td>Diesel locomotives and OTMs with diesel traction</td>
<td>71</td>
<td>70</td>
<td>85</td>
</tr>
<tr>
<td>EMUs</td>
<td>65</td>
<td>64</td>
<td>n.a.</td>
</tr>
<tr>
<td>DMUs</td>
<td>72</td>
<td>70</td>
<td>n.a.</td>
</tr>
<tr>
<td>Coaches</td>
<td>66</td>
<td>68</td>
<td>n.a.</td>
</tr>
<tr>
<td>Wagons</td>
<td>65</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
</tbody>
</table>

Note:
- LpAeq,T [dB]: the A-weighted equivalent continuous sound pressure level of the unit.
- LpAmax [dB]: the A-weighted maximum continuous sound pressure level at the nearest measuring position considering the main air compressor.
- LipAmax [dB]: the A-weighted maximum sound pressure level at the nearest measuring position considering impulsive noise of the exhaust valve of the air dryer.

- Starting noise
  - LpA,Fmax [dB]: the limit values for the AF-weighted maximum sound pressure level.

- Driver’s cab interior noise
  - LpAeq,T [dB]: the limit values for the A-weighted equivalent continuous sound pressure level.

<table>
<thead>
<tr>
<th>Noise within the driver’s cab</th>
<th>LpAeq,T [dB]</th>
</tr>
</thead>
<tbody>
<tr>
<td>At standstill with horns sounding</td>
<td>95</td>
</tr>
<tr>
<td>At maximum speed vmax if vmax &lt; 250 km/h</td>
<td>78</td>
</tr>
<tr>
<td>At maximum speed vmax if 250 km/h ≤ vmax &lt; 350 km/h</td>
<td>80</td>
</tr>
</tbody>
</table>

- Pass-by noise
  - Test track conditions
  - Procedure
    - EMUs, DMUs, locomotives and coaches
    - Wagons
    - OTMs

<table>
<thead>
<tr>
<th>Category of rolling stock subsystem</th>
<th>LpAeq,T [20 km/h] [dB]</th>
<th>LpAeq,T [250 km/h] [dB]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electric locomotives and OTMs with electric traction</td>
<td>84</td>
<td>99</td>
</tr>
<tr>
<td>Diesel locomotives and OTMs with diesel traction</td>
<td>85</td>
<td>n.a.</td>
</tr>
<tr>
<td>EMUs</td>
<td>80</td>
<td>95</td>
</tr>
<tr>
<td>DMUs</td>
<td>81</td>
<td>98</td>
</tr>
<tr>
<td>Coaches</td>
<td>79</td>
<td>n.a.</td>
</tr>
<tr>
<td>Wagons (normalized to APL &lt; 10%25)</td>
<td>83</td>
<td>n.a.</td>
</tr>
</tbody>
</table>

Note:
- LpAeq,T,20 km/h [dB]: limit value for the A-weighted equivalent continuous sound pressure level at a speed of 20 km/h.
- LpAeq,T,250 km/h [dB]: limit value for the A-weighted equivalent continuous sound pressure level at a speed of 250 km/h.

- Simplified evaluation: Consists of acoustically comparing the unit under examination with an existing type with documented noise characteristics.

**IMPLEMENTATION**

New subsystems
The declaration of verification and/or conformity to type of a new vehicle established in accordance with Decision 2011/229/EU shall be considered valid:
- For locomotives, EMUs, DMUs and coaches until the type or design certificate needs to be renewed as stated in Decision 2011/291/EU for cases where the latter decision was applied, or until 31 May 2017 for other cases,
- For wagons until 13 April 2016.

The declaration of verification and/or conformity to type of a new vehicle established in accordance with Decision 2008/232/EC4 shall be considered valid until the type or design certificate needs to be renewed as stated in this Decision.

Existing subsystems
For existing subsystems the following points have to be checked:
- Provisions in case of changes to existing rolling stock or rolling stock type
- Additional provisions for the application of this TSI to existing wagons
  - From 8 December 2024, wagons within the scope of Regulation (EU) No 321/2013 which are not covered by ‘Wagons operated in quieter routes’ shall not be operated on the quieter routes.
  - Quieter brake blocks
    - Brake block assessed in accordance with the procedure in accordance with Article 4(6) of Directive (EU) 2016/797.
- Wagons operated on quieter routes