



**INF. 5**

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(English only)

**RID:** 13<sup>th</sup> Session of the RID Committee of Experts' standing working group  
(Geneva, 15 – 19 November 2021)

**Subject:** Information from the European Union Agency for Railways

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## Introduction

1. Following a request of the European Commission (see CE/2009/INF. 10) at the 47<sup>th</sup> session of the RID Committee of Experts, it was decided (see report OTIF/RID/CE/2009-A, paragraph 110) to add a permanent item "Information from the Agency" in RID sessions' agenda. The Agency was invited by OTIF to continue providing information in the framework of the RID Committee of Experts' standing working group.
2. Hereinafter, the Agency reports information which has the potential to facilitate the coordination of tasks performed at EU and RID Committee of Experts levels. The selected information points are the following:
  - Progress on the Common Safety Methods for assessing the Safety Level and the Safety Performance of railway operators at national and Union level (CSM ASLP)
  - Progress of the work done on derailment prevention and detection functions
  - Application guide of the TSI Wagon (application of 6.8.2.1.2 RID)
  - List of TDG accidents notified to ERA
  - New texts concerning EU railways legislation

## Information points

### **CSM ASLP**

3. As a follow-up to the information provided by the Agency in November 2020, the Agency would like to inform the RID experts of the standing group that the final recommendation on the CSM ASLP was addressed to the European Commission on 18 May 2021.
4. All the documents concerning this recommendation are accessible at this location:

[https://www.era.europa.eu/library/era-recommendations\\_en](https://www.era.europa.eu/library/era-recommendations_en)

5. The European Commission (DG MOVE C4) is currently undertaking the applicable process for adoption.

***Progress of the work done on derailment prevention and detection functions***

6. The Topical Working Groups (TWG) dedicated to derailment prevention and detection function has delivered its proposal for the TSI revision 2022.
7. The functional description consists of three sets of requirements (draft text in annex):
  - Derailment prevention function (DPF),
  - Derailment detection function (DDF),
  - Derailment detection and actuation function (DDAF).
8. The usage of these functions remains voluntary, however when used the TSI requirements shall be applied in their entirety.

***Application guide of the TSI Wagon (application of 6.8.2.1.2 RID)***

9. The application guide of the TSI Wagon has been updated and contains the clarifications which were requested by RID experts.
10. Those clarifications have been introduced in section 4.2.2.2 'Strength of Unit' of the guidelines which are accessible with this link:

[https://www.era.europa.eu/sites/default/files/activities/docs/wag\\_tsi\\_application\\_guide\\_v3\\_final.pdf](https://www.era.europa.eu/sites/default/files/activities/docs/wag_tsi_application_guide_v3_final.pdf)

***List of accidents notified to ERA***

11. In accordance with article 19.1 of the Railway Safety Directive (RSD) the National Investigation Bodies (NIBs) are required to notify the Agency of each serious accident, to carry out an investigation and to provide the Agency with an investigation report, normally within one year. In accordance with article 19.2 of RSD the NIBs may also decide to investigate other railway accidents or incidents of particular interest.
12. After the disconnection of ERAIL, all investigation notifications and reports submitted by the NIBs to the Agency are now publicly available at this [link](#). These notifications and reports concern accidents and incidents that have occurred from 2007 onwards.
13. For the period between 1 January 2021 and 26 October 2021 the NIBs sent the Agency:
  - 112 investigation notifications of opened investigation
  - 4 final investigation reports.
14. During this period, the Agency had received a total of 4 notifications or reports where dangerous goods or tank-wagons were involved. This is shown in the table hereinafter

| Date      | Country  | Title  | Occurrence description   | ERAIL ID in the excel database |
|-----------|----------|--|--|--------------------------------|
| 23/4/2021 | Bulgaria | Train derailment, 23/4/2021, between the stations Vetovo-Senovo, Bulgaria  | Derailment of full fuel rail tank cars of freight train No 90593 between the stations Vetovo-Senovo                          | BG-10089                       |
| 16/6/2021 | France   | Level crossing accident, 16-6-2021, Rumigny, France  | Collision between a freight train carrying dangerous goods and a semi-trailer of exceptional transport carrying a boat       | FR-10079                       |
| 8/7/2021  | Romania  | Fire in RS, 8/7/2021, Buşteni, Romania   | A fire broke out at the tank car no. 33877852226-2, which was the first in the composition of the freight train no. 80498-1. | RO-10086                       |
| 31/7/2021 | Bulgaria | Derailment of 5 wagons (empty tank cars of light fuel oils) from the end of Freight train No 50890 along Kocherinovo-Boboshevo open line | Derailment of 5 wagons from the end of freight train along open line   | BG-10101                       |

### ***New texts concerning EU railways legislation (non-exhaustive)***

15. The Agency has identified texts which may be relevant for the RID Standing Group of Experts, as following:
- Commission Implementing Regulation (EU) 2021/541 of 26 March 2021 amending Regulation (EU) No 1305/2014 as regard the simplification and improvement of data calculation and exchange and the update of the Change Control Management process (relating to amendments to Telematic Application for Freight);
  - Commission Implementing Decision (EU) 2021/701 of 27 April 2021 correcting Implementing Decision 2011/665/EU on the European register of authorised types of railway vehicle;
  - Commission Implementing Regulation (EU) 2021/1903 of 29 October 2021 amending Implementing Regulation (EU) 2018/764 on the fees and charges payable to the European Union Agency for Railways and their conditions of payment;
16. On 29 September 2020, [Administrative Arrangements](#) between the OTIF Secretariat, DG MOVE and ERA have also been renewed (see also the [Annex](#)). In the field of dangerous goods, those arrangements promote the usage of the Joint Coordinating Group of Experts and the exchange information between the parties with the aim of improving consistency between RID and the EU rules applicable to railways.

### **Conclusion**

17. The above information has been prepared by the Agency regarding the potential links between the development of EU railway laws and provisions on Transport of Dangerous

Goods. Delegates are kindly invited to suggest future topics of interest to be considered by the Agency.

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**Annex**

*Note: the text hereinafter is the input from the technical working group to the TSI revision working party concerning derailment prevention and detection functions.*

*The Working party will process in parallel the changes proposed to each TSIs in order to ensure full consistency of the TSI 2022 revision package.*

*It is foreseen that the adoption of the TSI revision package should take place towards end of 2023.*

## **Proposal to amend the TSI WAG and the TSI LOC&PAS in order to consider the Derailment detection and prevention functions**

### **TSI WAG**

The following clause shall be added to the TSI WAG below the clause 4.2.3.5.2:

#### 4.2.3.5.3 Derailment detection and prevention function

The derailment detection and prevention function is intended to prevent derailments or to mitigate the consequences of a derailment of the unit.

If a unit is fitted with detection and prevention function the requirements below shall be met.

##### 4.2.3.5.3.1 General requirements

The function shall be able to detect either a derailment or conditions which are a precursor to a derailment of the unit in accordance to one of the three sets of requirements described in points 4.2.3.5.3.2, 4.2.3.5.3.3 and 4.2.3.5.3.4 below:

It is allowed to combine these functions as follows:

- 4.2.3.5.3.2 and 4.2.3.5.3.3
- 4.2.3.5.3.2 and 4.2.3.5.3.4

##### 4.2.3.5.3.2 Derailment prevention function (DPF)

The DPF shall be able to detect conditions which are precursor to a derailment by monitoring the condition of the relevant parameters of the unit, and shall send a signal to the driver's cab of the locomotive hauling the train once a precursor to derailment is detected in the unit.

If the unit is fitted with an automatic central coupling as defined in point 5.3.x of this TSI, the DPF shall comply with the requirements set out in point x.x.x. of ERA/TD/XXX.

The signal and its transmission between the unit, the locomotive and the other coupled unit(s) in a train for the DPF to be available at train level shall be documented in the technical file.

##### 4.2.3.5.3.3 Derailment detection function (DDF)

The DDF shall be able to detect a derailment once it just occurred and shall send a signal to the driver's cab of the locomotive hauling the train once the derailment is detected in the unit.

If the unit is fitted with an automatic central coupling as defined in point 5.3.x of this TSI, the DDF shall comply with the requirements set out in point x.x.x. ERA/TD/XXX.

The signal and its transmission between the unit, the freight locomotive and the other coupled unit(s) in a train for the DDF to be available at train level shall be documented in the technical file.

4.2.3.5.3.4 Derailment detection and actuation function (DDAF)

The DDAF shall be able to detect a derailment once it just occurred, and to automatically activate a brake application when the derailment is detected without possibility of overriding by the driver.

The purpose of DDAF is to limit the consequences of a derailment and by that to improve safety. However, false derailment detections may lead to excessive compressive forces having the typical credible potential to cause a derailment; considering this severity of the failure consequence, it shall be demonstrated that the risk is controlled to an acceptable level.

Therefore, the DDAF has to undergo a risk assessment in accordance with Commission Implementing Regulation (EU) No 402/2013.

It shall be possible to deactivate the DDAF directly on the unit when the unit is stopped. This deactivation will release and isolate the DDAF from the brake system.

The DDAF shall indicate its status (activated/deactivated) and this status shall be visible from both sides of the unit. If this is not physically feasible, the DDAF shall indicate its status from at least one side and the other side of the wagon shall be marked in accordance with point 4.5.59 of EN 15877-1:2012.

4.8. Parameters to be recorded in the technical file and European register of authorised types of vehicles

The technical file shall contain at least the following parameters:

[...]

- Presence of one or more of the following functions: DDF, DPF, DDAF.
- Description of the signal informing of a derailment or a precursor to a derailment and its transmission for units is fitted with DDF or DPF.

New line in table 11a of WAG TSI clause 7.2.2.2:

*Basic design characteristics related to basic parameters set out in the WAG TSI*

| 1. TSI clause  | 2. Related basic design characteristic(s)                | 3. Changes impacting the basic design characteristic and not classified as 21(12)(a) of Directive (EU) 2016/797 | 4. Changes impacting the basic design characteristic and classified as 21(12)(a) of Directive (EU) 2016/797 |
|--|--|---|---|
| 4.2.3.5.3 Derailment detection and prevention function | Presence of derailment prevention and detection function | Fitting/removing of prevention/detection function   | N/A   |

ERA/TD/XXX (*Technical Document to be developed containing requirements of DAC - digital automated coupling system*)

Note: The present recommendation shall be considered when defining the communication system of the DAC, especially regarding the signal transmission of derailment detection and prevention functions (DDP and DPF).

#### Appendix C.19bis Derailment detection and prevention function

If a unit is fitted with DDF or DPF as defined in points 4.2.3.5.3.2 and 4.2.3.5.3.3 of this TSI and if the coupling system is in accordance with Appendix C1.2, it shall be demonstrated that these functions are compatible with the requirements set out in points xxx of ERA/TD/xxx.

Annex XXX – changes of requirements and transition regimes

The clause 4.2.3.5.3 shall be classified as C2.

### **TSI LOC&PAS**

The following clauses shall be added to the TSI LOC&PAS below the clause 4.2.9.3.6:

#### 4.2.9.3.7 Derailment detection and prevention signal processing

- (1) This clause is applicable to locomotives intended to process signals emitted by freight wagons equipped with DPF or DDF as defined in point 4.2.3.5.3 of TSI WAG.
- (2) These locomotives shall be equipped with means to receive a signal from the freight wagons forming a train which are equipped with the DPF and DDF informing of:
  - A precursor of a derailment, in case of the DPF in accordance with point 4.2.3.5.3.2 of TSI WAG and
  - A derailment, in case of the DDF in accordance with point 4.2.3.5.3.3 of the TSI WAG.
- (3) At the reception of the signal above, both visual and acoustic alarms shall indicate in the driver's cab that the train is:
  - In risk of derailment, in case the alarm is sent by a DPF or
  - Just derailed, in case the alarm is sent from a DDF.
- (4) A device in the driver's cab shall allow the acknowledgment of the alarm above.
- (5) If the alarm is not acknowledged from the driver's cab in 10 +/-1 seconds, a full service brake or an emergency brake application shall be automatically applied.
- (6) It shall be possible to override the automatic brake application set out in point 4.2.9.3.6 (5) above from the driver's cab.
- (7) It shall be possible to deactivate the automatic brake application set out in point 4.2.9.3.6 (5) above from the driver's cab.
- (8) If the locomotive is fitted with a coupling system compatible with the automatic central coupling as defined in point 5.3.x of TSI WAG, the signal processing shall comply with the requirements set out in point x.x.x. ERA/TD/XXX.
- (9) The presence of the derailment detection signal processing function in the locomotive as well as the conditions of use at train level shall be recorded in the technical documentation defined in clause 4.2.12 of this TSI.

4.2.9.3.7a On-board derailment detection and prevention function

- (1) This clause is applicable to locomotives which intended to detect derailments or precursors to derailments in freight wagons hauled by the locomotive.
- (2) The equipment fulfilling this function shall be located entirely on board the locomotive
- (3) At the detection of a derailment or precursor to derailment, both visual and acoustic alarms shall be triggered in the driver's cab.
- (4) A device in the driver's cab shall allow the acknowledgment of the alarm above.
- (5) If the alarm is not acknowledged from the driver's cab in 10 +/-1 seconds, a full service brake or an emergency brake application shall be automatically applied.
- (6) It shall be possible to override the automatic brake application set out in point 4.2.9.3.7a (5) above from the driver's cab.
- (7) It shall be possible to deactivate the automatic brake application set out in point 4.2.9.3.7a (5) above from the driver's cab.
- (8) The presence of the onboard derailment detection function in the locomotive as well as the conditions of use at train level shall be recorded in the technical documentation defined in clause 4.2.12 of this TSI.

4.2.12.2. General documentation

- (17) The presence of one or several of the functions described in clauses 4.2.9.3.7 and 4.2.9.3.7a and their conditions of use at train level.

*Basic design characteristics related to basic parameters set out in the LOC&PAS TSI*

| 1. TSI clause   | 2. Related basic design characteristic(s)                         | 3. Changes impacting the basic design characteristic and not classified as 21(12)(a) of Directive (EU) 2016/797 | 4. Changes impacting the basic design characteristic and classified as 21(12)(a) of Directive (EU) 2016/797 |
|---|---|---|---|
| 4.2.9.3.7 Derailment detection and prevention signal processing   | Presence of derailment prevention and detection signal processing | Fitting/removing of prevention/detection function   | N/A   |
| 4.2.9.3.7bis Onboard derailment detection and prevention function | Presence of derailment prevention and detection function          | Fitting/removing of prevention/detection function   | N/A   |

Annex XXX – changes of requirements and transition regimes

The clauses 4.2.9.3.7 and 4.2.9.3.7a shall be classified as C2.



## Proposed texts for the Application Guide

### WAG TSI Application Guide

#### Point 4.2.3.5.3 Derailment detection and prevention function

*If a unit is fitted with detection and prevention function the requirements below shall be met.*

It is not mandatory to fit a unit with the derailment prevention and detection function in order to fulfil the requirements of this TSI. However, it might be, that other EU legislation requires to fit some particular types of freight wagons with this function at some point in time.

#### 4.2.3.5.3.4 Derailment detection and actuation function (DDAF)

*The purpose of DDAF is to limit the consequences of a derailment and by that to improve safety. However, false derailment detections may lead to excessive compressive forces having the typical credible potential to cause a derailment; considering this severity of the failure consequence, it shall be demonstrated that the risk is controlled to an acceptable level.*

If the DDAF consists of standard devices according to the requirements of chapter 4.2.3.5.3.4 fitted in the freight wagon, this risk assessment can be carried out generically at device level. This safety analysis might conclude that additional operational conditions/restrictions for use are required in order to grant the safety at freight train level.

Additional guidance is available in the Agency webpage:

[https://www.era.europa.eu/sites/default/files/activities/docs/guide-lines\\_from\\_eu\\_agency\\_for\\_railways\\_use\\_derailment\\_detectors\\_en.pdf](https://www.era.europa.eu/sites/default/files/activities/docs/guide-lines_from_eu_agency_for_railways_use_derailment_detectors_en.pdf)

Additional information on design specifications regarding purely pneumatic DDAF are available in UIC 541-08:2007, Chapter 1.

### LOC&PAS TSI AG

#### Clauses 4.2.9.3.7 and 4.2.9.3.7a On-board derailment detection and prevention function

*(1) This clause is applicable to locomotives intended to process signals emitted by freight wagons equipped with DPF or DDF as defined in point 4.2.3.5.3 of TSI WAG.*

The fulfilment of clause 4.2.9.3.7 and 4.2.9.3.7.a are not mandatory. However, the TSI requires locomotives intended to be compatible with the signals emitted by the DPF or DDF of the freight wagons fitted with such functions to fulfil the requirements set out in these clauses. It might be, that other EU legislation requires to fit some particular types of locomotives with this function at some point in time.

### Proposed changes for ERA TV

Amendments to be added according to changes implemented in WAG TSI clause 4.2.12.2 (17)