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Supplementary information Authorisation of railway vehicles for the Swedish part of the European Union´s railway system

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Versionshistorik

Version	Datum	Beskrivning	Ansvarig
1.0	2022-06-02	New document	Robert Bylander
2.0	2023-06-22	Clarifications in ch. 5, 7, 8 and 19.	Robert Bylander

Content

1 Purpose

This document is aimed at helping authorisation applicants so that the applications submitted to the Swedish Transport Agency will contain what is mandatory according to the new regulations in effect since 2022-06-01.

The reason behind these new regulations is that the legislation has changed because of the implementation of the fourth railway package in Sweden. Authorisation of railway vehicles should now follow the Directive (EU) 2016/797 on the interoperability of the rail system within the European Union, Railway Technology Act (2022:366) [5] as well as the Swedish Transport Agency's regulations on the authorisation of railway vehicles for the Swedish part of the European Union's railway system (TSFS 2022:35) [7].

2 Scope

The document constitutes a guidance on the Swedish Transport Agency's Regulations TSFS 2022:35 [7].

3 Target group

The document is aimed at those who are planning to apply for a temporary authorisation for railway vehicles intended to run on the Swedish part of the European Union's railway system. The document is to be read in conjunction with Transport Agency's regulations TSFS 2022:35 [7].

4 Scope of application, 1-3 §§

The Swedish Transport Agency's Regulations TSFS 2022:35 [7] regulates only temporary authorisations of railway vehicles for the Swedish part of the European Union's railway system. The Swedish part of the European Union's railway system constitutes (almost) of the railway infrastructure belonging to the Swedish Transport Administration (Trafikverket) and that of certain large terminals and harbours.

With regard to authorisation of vehicle types and to place vehicles on the market, so-called APOM[1], that process is regulated by PAVA[2] [1].

[1] Authorisation for Placing On the Market
[2] The Commission's implementing regulation (EU) 2018/545

Sweden has made an exemption from applying the Directive on the interoperability for the following categories:

1. Metros and trams.

2. Networks that are functionally separate from the Swedish part of the Union rail system and intended only for the operation of local, urban or suburban passenger services, as well as undertakings operating solely on those networks.

3. Privately owned railway infrastructure, including sidings, used by its owner or by an operator for the purpose of their respective freight activities or for the transport of persons for non-commercial purposes, and vehicles used exclusively on such infrastructure.

4. Infrastructure and vehicles reserved for a strictly local, historical or touristic use.

Vehicles belonging to category 1 are authorised in accordance with TSFS 2010:115 [8], and vehicles belonging to category 2-4 are authorised in accordance with the Swedish Transport Agency's Regulations on authorisation of railway vehicles for national railway systems (TSFS 2022:34) [9].

Regarding trams that are intended for traffic on both light rail and railway networks, so called tram-trains, these are covered by the regulations in TSFS 2022:35; however, how they should be authorised are left to the member states to decide. Sweden has decided that they should be authorised in accordance with the requirements in the regulations TSFS 2022:34 [9].

The regulations (TSFS 2022:35) [7] does only contain requirements on the process and on which documents that should be submitted to the Swedish Transport Agency. The technical requirements that the Swedish Transport Agency has set for vehicles to be authorised in Sweden (in addition to the requirements in TSI's) are found in the Swedish Transport Agency's regulations and general guidelines on railway vehicles (national rules) (TSFS 2022:36) [10].

5 Reviewing bodies and passive transport, 4 §

The reviewing bodies that carrying out different kind of independent assessments are Notified Bodies (NoBo), Designated Bodies (DeBo), and

assessment bodies according to CSM-RA[3] [2] (AsBo). These bodies have an accreditation or corresponding, which means that there is no need to authorise them for every single project, like it had to be done previously according to TSFS 2010:116 [11]. If one would like to use a third party assessor that neither is a NoBo, DeBo, or an AsBo, the independence and competence of that assessor needs to be motivated in the application documents. The independence and competence can therefore be questioned by the Swedish Transport Agency. Please note that when an application for an authorisation for placing on the marked is to be submitted via OSS [16], a third-party assessor who is neither NoBo, DeBo or AsBo is NOT accepted

Passive transport is regulated in TSI OPE[4] [3], where it is a part of the term exceptional transport, and as such it is an open point in the TSI, meaning that Sweden are allowed to have national rules for this. A passive transport consist mainly of the following temporary transports:

1. Vehicles that lack a Swedish authorisation and that should:
- be towed to a workshop
- be towed through Sweden to Norway, for example, or vice versa.
2. Trams or metro carriages that should be towed to their infrastructure from manufacturer or workshop.
3. OTMs that during a limited time should be towed to occasional working places. Typically 5-6 prearranged transports during a limited time, which would not motivate a permanent authorisation in Sweden. This opportunity is mainly for special vehicles that do not have an equivalent in Sweden.
4. Vehicles that are rebuilt and not yet have their new authorisation for active transport.
5. New vehicles that not yet have a temporary authorisation for testing.

6 Exceptions from the requirement of authorisation, 5 §

Like in earlier regulations, vehicles with a low risk are exempted from authorisation requirements. It is assumed that they can be run in a maximum speed of 20 kilometres per hour and not are transporting passengers, and that they meet one of following four criteria:

1. Are used in an area that has been closed off for construction or maintenance of the infrastructure,

[3] Kommissionens genomförandeförordning (EU) nr 402/2013 om den gemensamma säkerhetsmetoden för riskvärdering och riskbedömning
[4] KOMMISSIONENS GENOMFÖRANDEFÖRORDNING (EU) 2019/773 om teknisk specifikation för driftskompatibilitet avseende delsystemet Drift och trafikledning i järnvägssystemet i Europeiska unionen

2. Are used in an area where the speed of the vehicle and all other traffic is adjusted so that all vehicles can stop within half the distance of the sight,
3. Does not have wheels on the track with significance for traction or braking, or
4. Are towed.

Also vehicles that are authorised in another country according to the rules in COTIF[5] [4] are exempted from authorisation.

7 Temporary authorisation for tests or other cases of temporary running including passive transport, 6 and 7 §§

A vehicle shall always have a valid authorisation for running on Swedish infrastructure. If it does not have a permanent authorisation, it needs to have a temporary authorisation.

The Swedish Transport Agency often issues authorisations in several stages, first one or more temporary authorisations to carry out tests, then a temporary approval for tests in commercial traffic. Finally, ERA or the Swedish Transport Agency issues an authorisation for placing on the marked (APOM). Both temporary authorisations and APOM´s may contain restrictions and conditions of use.

Both tests and tests in experience operation may be needed to gather practical experience of the authorisation object. Experience operation may be permitted despite the fact that certain functions have not been demonstrated, but that these can be managed with conditions for a limited time.

The difference between tests and tests in experience operation is that tests are carried out in a "protected environment", e.g. on closed tracks without the interference of passengers or other vehicles. However, some tests are carried out together with other traffic, e.g. test with pantograph. Experience operation, on the other hand, means taking the approval object into commercial traffic.

Both tests and tests in experience operation are normally initiated by the applicant in order to validate certain requirements.

Examples of functions to be tested for vehicles are brakes, track forces, load securing and profile. For passenger vehicles, doors, alarms and evacuation equipment must also be tested. Some tests must be performed in both winter

[5] The International railway convention

and summer conditions. When testing in experience operation, it is often availability that is to be tested.

The tests shall be documented in a report.

During tests, it is important that the railway undertaking has traffic regulations that cover the test runs and that any derogations from TTJ [17] are in order.

New vehicles

For new vehicles this means that they normally pass the following steps of authorisation:

J1. Authorisation for passive transport (see chapter 5).

J2. Authorisation for test runs on closed tracks. In this phase of authorisation, a test drive decision from the Swedish Transport Administration is required, which contains the necessary safety distances and other measurements required for access to the tracks. In the process of the Swedish Transport Agency, we will check to what extent the vehicle is validated for the Swedish Transport Administration to set the correct conditions for the test runs. The Transport Agency will also set conditions in its decision.

J3. Has expired

J4. Authorisation for tests in mixed traffic. Before entering this phase, the safety is validated and the authorisation is intended to evaluate if the vehicle can be used in traffic without too many stopping errors occurring. The authorisation can contain conditions that needs to be met for the vehicle to be safe.

J5. Authorisation of experience operation in commercial service. Before entering this phase, the vehicle has proven to be safe and displaying few stopping errors, meaning that the test can be carried out in commercial service. The applicant is here given the opportunity to evaluate the vehicle in order to make improvements. No completed certificates from notified bodies or final reports from reviewing bodies are required; instead, it is possible to submit an intermediate statement of verification or another type of report from the reviewing bodies. Situations when experience operation might be appropriate is when there is a need for documentation verifying the compatibility during Nordic winter conditions or when a new train protection system has been installed and will be evaluated regarding availability. When more material is needed, like in these case, it is not possible to apply for an APOM for the vehicle. However, this phase is not a

requirement from the Transport Agency when applying for an APOM, since there are alternative ways to show compliance with the requirements.

Rebuilt vehicles

If changes have been made on a vehicle, they shall be categorised according to article 15 and/or 16 in PAVA [1]. If the change is categorised as something other than a 15.1 a), it means that the vehicle no longer has a valid authorisation, since the certificates issued by the notified body no longer are valid. To get a new valid authorisation, the notified body would need to perform new reviews and, after these are completed, issue new certificates. If testing is needed for the notified body to issue new certificates, an application for authorisation for tests must be sent in to the Transport Agency. In this case, step J2-J5 would normally be used.

How the entity managing the change on a vehicle must act, including when a new APOM is required, is described in PAVA [1] and in the applicable TSIs. The handling differs if the entity managing the change also is the holder of the vehicle type authorisation for the vehicle type or not.

8 Contents of the application for temporary authorisation, 8 §

We prefer that all documentation in the case be sent to us by e-mail (jarnvag@transportstyrelsen.se or the address specified by the handling officer). We accept Swedish or English as the language in the application and other documents. For less extensive documents, we also accept Danish or Norwegian.

1. The applicant's name, organisation number, contact details and invoicing details.

In order to make it clear who is applying and to avoid problem with invoices that do not reach the intended receiver and therefore remains unpaid (creating unnecessary work), it is important that this information is provided.

2. A description of the vehicle that is to be authorised.

In case it is a new vehicle, this shall include a clear specification containing main data, type of braking system, main components (for example pantograph) and other systems (for example ATP), etc. For a vehicle that is rebuilt, it is sufficient to include vehicle type/number and a description of what has been changed.

3. A plan for the continued process of the temporary authorisation.

In this plan we want to see a general planning on what authorisation steps that will be involved and when the authorisation is expected from the Transport Agency. If there are several temporary authorisations, the Transport Agency will handle them in the same issue.

If the application is solely for one single passive transport, this article will not be applied.

All future changes to the vehicle must be reported so that the Swedish Transport Agency can determine how these changes affect the temporary authorisation. The applicant should describe how various changes will be handled and agree with the handling officer when and how the information about changes should be submitted.

4. Planning that includes tests in the Swedish railway network including test specification.

In this planning, we expect to see what is intended to be tested and how the tests will be conducted (for example, if they will be conducted on closed tracks). We do not require detailed test plans with exact times and places for testing.

5. Description of the method or methods used for requirements capture according to § 9.

The regulations have been adapted to the process in PAVA [1], and one of the adaptions is that the applicant shall make a requirements capture. For the essential requirement safety, the method according to annex 1 in CSM-RA [2] shall be used, whereas for technical compatibility another method can be used. If the method according to CSM-RA [2] is the only method used, it is sufficient to state this under this point. If an additional method has been used, that method shall be described for the Transport Agency to determine if it is appropriate.

6. Documents proving that all requirements in a requirements capture according to § 9 have been correctly identified, been identified to function or subsystem or considered through conditions of use and limitations, and implemented and, if possible, validated or analysed before the tests.

This is fully according to PAVA [1] except that the requirement has been adapted for a temporary authorisation for tests. Because test for validation will be carried out, certain functions and parameters cannot be fully confirmed safe or compatible before the test. The documents that the

Transport Agency wants to see is mainly a safety case (for example according to SS-EN 50126 [12] and SS-EN 50129 [13]) The safety case is supplemented with reports from reviewing bodies pursuant to point 11. This applies primarily to new or rebuilt vehicles. Regarding other authorisations that are less complex, a safety case is in most cases not needed, and it is sufficient to submit reports and, in some cases, risk assessments.

Vehicles authorised in another member state or in CH+NO shall be permanently authorised in OSS [16] according to the case “extended area of use”. They shall follow the rules that are set in the TSIs, for example chapter 7.1.4 in the LOC & PAS TSI [14]. The documentation that is produced for the permanent authorisation can also be used for the temporary authorisation.

Regarding temporary authorisations, the Swedish Transport Agency apply cross-acceptance of the foreign authorisation, meaning that the parameters and functions that remains unchanged and have been reviewed by a foreign authority does not have to be reviewed again. However, the values for compatibility with the infrastructure needs to be checked for Swedish conditions.

7. A specification of expected conditions of use and limitations of the temporary authorisation.

Here, the applicant shall mention the measures needed for safe running of the vehicles even if certain functions are not finally validated and reviewed. In addition, other limitations for the vehicle shall be given, for example maximum speed, number of units under multiple control, maximum axle load, etc. For these, it is okay to attach an extract from the vehicle register, ERATV [15] or a previous authorisation.

8. Manuals and instructions for the operation and maintenance of the vehicle used during the period of the temporary authorisation, including instructions for towing and recovery, in a language that the user understands.

Regarding instructions for maintenance, it is sufficient if these covers the maintenance that is carried out during the testing period.

If there are no passengers on board, the manual for on-board staff does not need to be submitted.

9. Information about contracted reviewing bodies.

Information about the reviewing bodies shall be provided to make it possible to check if they are duly notified, accredited, or designated.

10. Planning for and the extent of the review carried out by reviewing bodies.

The scope of the review by the reviewing bodies shall be provided. It shall be clear that no interface remains not reviewed.

11. Report or reports from reviewing bodies.

The documents that the Swedish Transport Agency wants to see is primarily reports on the review of the documentation that was produced under point number 6. It does not have to be a certificate or final report; it is sufficient if the bodies indicates what is reviewed and also highlights what remains to be reviewed. The reports can be adapted to the phase in which the authorisation is intended to be carried out. For a J1, the functions that is not used does not need to be reviewed or mentioned in the report. A reviewing body can choose to present its review in one or more reports.

A report must clearly state what has been reviewed, why, how and at what level the review was carried out, and whether the object of approval or the change to the object of authorisation meets or does not meet the requirements set (the degree of fulfilment of requirements may vary). If the requirements cannot be fully satisfied, the independent reviewer can indicate what consequences this entails, and if possible indicate what measures should be taken before authorisation.

If the application concerns tests in mixed traffic or tests in experience operation on any ERTMS equipped track, compatibility with the track needs to be demonstrated by tests for the relevant ESC/RSC parameter being carried out with an approved result, and the result must also have undergone independent review.

If the Swedish Transport Agency requests it, the applicant shall submit additional documents that are necessary for the assessment.

If the submitted documentation, for example, cause concerns that specific safety flaws exists, the Swedish Transport Agency can request more information than what is mentioned in point 1-11. If, for example, an authorisation provided from another member state does not give the information expected, supplementary documentation can be asked for.

9 Handling of relevant requires for temporary authorisation, 9 §

The regulations have been adapted to the process in PAVA [1], and one of the adaptations is that the applicant shall carry out a requirements capture.

For the essential requirement safety, the method according to annex 1 in CSM-RA [2] shall be used, whereas for technical compatibility another method can be used. A requirements capture is not limited to just one specification of requirements. It can be compared to the whole process in the V-model pursuant to SS-EN 50126 [12]. The point is that the documentation that is produced in the process to get a permanent authorisation via the OSS [16] also should be used for the temporary authorisations.

The requirements capture for a temporary authorisation does not need to cover all essential requirements – it is sufficient if it covers safety and requirements for safe integration of subsystems and technical compatibility.

10 Application for exemptions from TSI, 10 §

There are a number of possible reasons for not having to fulfil requirements in TSIs. These cases are presented in the Railway Technology Act [5]. Before the Swedish Transport Agency can make a decision to grant the exception, it has to submit an exemption request to the European Commission. In order to make it possible for the Swedish Transport Agency to submit a useful application, the applicant needs to submit to the Swedish Transport Agency the information that the European Commission requires from the Swedish Transport Agency, which is the information asked for in article 2 in the Commission Implementing Regulation (EU) 2020/424 of 19 March 2020 on submitting information to the Commission as regards non-application of technical specifications for interoperability in accordance with Directive (EU) 2016/797 [6].

Based on the submitted documentation, the Swedish Transport Agency can directly choose not to approve an application and thus not forward it to the EU Commission.

11 Administration

This document is administrated by Section Railway Engineering, Road and Railway.

12 References

[1] COMMISSION IMPLEMENTING REGULATION (EU) 2018/545 of 4 April 2018 establishing practical arrangements for the railway vehicle authorisation and railway vehicle type authorisation process pursuant to Directive (EU) 2016/797 of the European Parliament and of the Council

[2] Commission Implementing Regulation (EU) No 402/2013 of 30 April 2013 on the common safety method for risk evaluation and assessment and repealing Regulation (EC) No 352/2009

[3] Commission Implementing Regulation (EU) 2019/773 of 16 May 2019 on the technical specification for interoperability relating to the operation and traffic management subsystem of the rail system within the European Union and repealing Decision 2012/757/EU

[4] Convention concerning International Carriage by Rail (COTIF)

[5] Railway Technology Act (2022:366)

[6] Commission Implementing Regulation (EU) 2020/424 of 19 March 2020 on submitting information to the Commission as regards non-application of technical specifications for interoperability in accordance with Directive (EU) 2016/797.

[7] Transportstyrelsens föreskrifter om godkännande av järnvägsfordon för svenska delen av Europeiska unionens järnvägssystem (TSFS 2022:35)

[8] Transportstyrelsens föreskrifter om godkännande av spåranläggning eller fordon för tunnelbana och spårväg (TSFS 2010:115)

[9] Transportstyrelsen föreskrifter om godkännande av järnvägsfordon för nationella järnvägssystem (TSFS 2022:34)

[10] Transportstyrelsens föreskrifter och allmänna råd om järnvägsfordon (nationella regler) (TSFS 2022:36)

[11] Transportstyrelsens föreskrifter om godkännande av delsystem för järnväg (TSFS 2010:116)

[12] SS-EN 50126 The Specification and Demonstration of Reliability, Availability, Maintainability and Safety (RAMS)

[13] SS-EN 50129 Communication, signalling and processing systems - Safety related electronic systems for signalling

[14] 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

[15] European Register of Authorised Types of Vehicles (ERATV)

[16] European Union Agency for Railways One-Stop Shop (OSS)

[17] Trafikbestämmelser för järnväg (TTJ)