

BUNDESAMT FÜR VERKEHR  
OFFICE FÉDÉRAL DES TRANSPORTS  
UFFICIO FEDERALE DEI TRASPORTI  
FEDERAL OFFICE OF TRANSPORT

## **Guidelines**

### **Article 7 of the Ordinance on the Construction and Operation of Railways (Railways Ordinance)<sup>1</sup>**

### **Type approval of constituents and signalling systems**

Federal Office of Transport (FOT)

1 April 2002

Status on February 15, 2006 (new address)

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<sup>1</sup> Cf. Annex 4 for wording of Article 7 of the Railways Ordinance.



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- 1) General type approval procedure
- 2) Applicable constituents
- 3) Applicable signalling systems
- 4) Wording of Article 7 of the Railways Ordinance

## 1 Purpose

The aim of these guidelines is to explain the approval procedures for constituents and signalling systems (Article 7 of the Railways Ordinance)<sup>2</sup> to applicants and other interested parties. A separate set of guidelines has been issued for vehicles.

They explain the practical application of the existing laws, ordinances and implementation regulations concerning type approval.

This document does not have the status of a law or ordinance, but it is more binding than a mere recommendation. Deviations are permissible as long as the objectives pursued by the law, ordinance and guidelines are still attained in another manner. Applicants who closely observe these guidelines may be certain that the authorities will accept their application for consideration. Failure to do so may result in the rejection of their application.

## 2 Purpose and scope of type approval

The aim of type approval is to facilitate the examination process of the FOT within the scope of subsequent plan approval and /or operating authorisation procedures, and thus to accelerate these procedures.

With respect to new constituents and signalling systems for which the approval process involves a lengthier operational test, applicants are advised to initiate the type approval procedure before starting the plan approval procedure. When the type approval procedure is started well in advance, an important prerequisite is created so that the design approval procedure can take place within the deadlines.

Type approval is primarily intended to apply to constituents and signalling systems (cf. Annexes 2 and 3 for details concerning scope of application) that are designed for *multiple* use in an identical manner and function (series). If multiple application is not a certainty, it is nevertheless possible to initiate a procedure for type approval.

## 3 Definitions of terms used in these guidelines:

- a) *Applicant*: Manufacturer or his authorised agent, proprietor or holder, network user and infrastructure operator.
- b) *Specified safety requirements*: Collective term that encompasses all safety requirements that have to be identified and specified by the applicant on the basis of legally binding safety regulations, measures arising from risk analyses and safety technical rules.
- c) *Requirements*: For example, functional, planning, operating, maintenance requirements. *Application conditions*: For example, technical, operational, environmental application conditions.
- d) *Safety case*: Documentary evidence supplied by the applicant that the object concerned meets all the specified safety requirements in accordance with the applicable safety technical rules.

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<sup>2</sup> SR 742.141.1

e) *Type approval*: Decision in which the FOT confirms that a given object has been examined from both a technical and an operational point of view and is found to be suitable for use for a specified purpose under specific conditions, and – if applicable – that its interoperability is assured.

f) *Type approval concept*: The FOT's type approval concept stipulates the organisation, responsibilities, required documentation, inclusion of assessors (cf. 8.6 below), any necessary operational tests and the schedule for the type approval procedure.

g) *Constituents*: This term refers to the items listed in Annex 2.

h) *Signalling systems*: This term refers to the items listed in Annex 3.

i) *Specification*: This term refers to the information concerning the purpose, requirements (including specified safety requirements) and application conditions of the object to be approved.

#### **4 Type approval obligation**

There is no type approval obligation in effect.

#### **5 Type approval together with other procedures**

Whereas in the type approval procedure, the necessary examination is carried out independently of a given single application, in the plan approval and operating authorisation procedures a specific application is tested in its intended environment.

If a given constituent, signalling system or components thereof are to be examined for the first time within the scope of a plan approval or operating authorisation procedure, the applicant may also submit a corresponding request for (non-project-specific) type approval.

The FOT implements these procedures separately (usually different applicants), but co-ordinates them in practical terms.

#### **6 Obligations on the part of applicants**

Applicants are required to:

- Submit the specification
- State which legal provisions and standards are applicable with respect to the requirements (including the specified safety requirements), and indicate any deviations therefrom
- State that all information (planning details, maintenance guidelines, etc.) is available that is necessary for ensuring the safety throughout the entire lifecycle
- Produce the necessary safety case (cf. 8.5 below)
- Call on the appointed assessor(s) to verify the safety case (cf. 8.6 below)
- Indicate which interoperability requirements are met

The applicant is the sole party answerable towards the FOT in the type approval procedure.

## 7 FOT

The FOT carries out the following actions within the scope of its type approval procedure:

- Checks that application is complete (cf. 8.2 below)
- Requests applicant to assist in planning the procedure (cf. 8.3 below)
- Specifies the course of the type approval procedure (cf. 8.3 below)
- Examines and approves the specification (cf. 8.4 below)
- Carries out the type approval examination as described in section 8.7
- Issues the necessary authorisations for operational tests (cf. 8.8 below)
- Issues the type approval certificate (cf. 8.9)

NB: The FOT acts solely as examining and approval authority.

## 8 Type approval procedure

The type approval procedure itself is based on these guidelines and the provisions of the Federal Administrative Procedures Act<sup>3</sup>.

### 8.1 Application

#### 8.1.1 Required information

The person signing the application on behalf of the applicant is required to submit the following **information**:

- Title of application: "Application for type approval of ..... [object concerned] in accordance with Article 7 of the Railways Ordinance "
- Name and address of applicant
- Brief description of purpose and use of the object, or its multiple application
- Technical identification of object
- Details concerning origin of object: prototype, preliminary series or series production
- Application conditions under which the type approval is to apply
- Substantiated petition concerning intended period of validity of type approval
- Details concerning any already existing approvals (including by foreign authorities)
- Details concerning any already existing applications

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<sup>3</sup> Federal Administrative Procedures Act, SR 172.021

- Specified safety requirements (if available)
- Indication of references concerning safety case (if available)
- Indication of references concerning safety assessment report (if available)
- Draft type approval concept

### **8.1.2 Addresses**

Applications for type approval of constituents and their components and applications for type approval of signalling systems and their components should be sent to the following address:

Federal Office of Transport  
Admissions and Regulations  
CH 3003 Berne

Telephone enquiries: 031 323 04 57 (from abroad: +41 31 323 04 57)

Enquiries may also be made by e-mail to:

[zulassung@bav.admin.ch](mailto:zulassung@bav.admin.ch) or  
[homologation@bav.admin.ch](mailto:homologation@bav.admin.ch) or  
[approvazione@bav.admin.ch](mailto:approvazione@bav.admin.ch) or  
[approval@bav.admin.ch](mailto:approval@bav.admin.ch)

## **8.2 Examination of application**

The FOT ascertains whether the application is complete (i.e. whether it contains all the necessary information for carrying out a detailed examination). It then contacts the applicant within 30 days after its receipt of the application to confirm the initiation of the type approval procedure, to request more information, or to reject the application.

If the applicant fails to respond within the stated deadline, the FOT will not process the application.

## **8.3 Planning the type approval procedure**

Once the FOT is in possession of the complete application material, the next step, initiated by the FOT, is for both parties to finalise the details of the type approval concept within 30 days.

The applicant is responsible for preparing the type approval concept.

The FOT specifies the course of the type approval procedure.

## **8.4 Examination and approval of the specification**

During the planning stage (cf. 8.3 above), the deadline also has to be specified for the examination and approval of the specification.

The FOT may approve the specification by an interim decision.

## 8.5 Safety case

The applicant is responsible for providing the necessary safety case.

It is required to provide evidence of the fact that the specified safety requirements are duly met. These include the relevant safety requirements stipulated in the Railways Ordinance (including the provisions of Article 5, Paragraph 2) as well as supplementary regulations<sup>4</sup> and implementation provisions in consideration of the recognised technical rules<sup>5</sup>, e.g. those of CEN and CENELEC.

In principle, for type approval in the area of signalling systems, the safety case has to be prepared in accordance with the provisions of prEN 50129<sup>6</sup>.

## 8.6 Verification of safety case

### 8.6.1 Examination

The applicant is obliged to entrust an assessor with the task of verifying the safety case. The assessor issues a safety assessment report.

If specified within the scope of the planning of the type approval procedure (cf. 8.3 above), the FOT may verify the safety case or parts thereof.

### 8.6.2 Appointment of assessors by applicants

Assessors may take the form of bodies or individual experts.

#### Bodies

Any body called on by an applicant to function as an assessor has to be duly accredited in accordance with the provisions of the Ordinance on Accreditation and Designation<sup>7</sup>. The FOT verifies the validity of the scope of application stated in the accreditation.

The applicant is required to issue a written mandate to the body concerned, and to submit it to the FOT, which uses it as basis for verifying the safety assessment report.

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<sup>4</sup> Article 4, Railways Ordinance

<sup>5</sup> Article 2, Railways Ordinance

<sup>6</sup> prEN 50129 Railway applications - Safety related electronic systems for signalling

<sup>7</sup> SR 946.512



### Individual experts

Any individual experts called on by the applicant to function as an assessor has to meet the criteria cited in Chapter 6 of the Guidelines for Experts<sup>8</sup> (specialised know-how and neutrality). The FOT decides whether a given individual expert is acceptable.

The applicant is required to issue a written mandate to each individual expert concerned, and to submit it to the FOT, which uses it as a basis for verifying the safety assessment report.

## **8.7 Examinations to be carried out by the FOT**

The FOT verifies at least:

- The specification
- The result of the safety assessment report
- The safety case, if agreed during the planning of the type approval procedure
- Compliance with the agreed interoperability requirements
- Whether the processes described by the applicant are suitable for avoiding safety gaps, and whether these processes have been implemented
- Whether an operational test is necessary
- The results of any operational test deemed necessary

## **8.8 Operational tests**

If an operational test is deemed necessary (cf. 8.7 above), the FOT issues an authorisation in the form of an interim decision.

**NB:** If an operational test is called for within the scope of the type approval procedure, this normally requires a plan approval.

## **8.9 Type approval**

The FOT issues the type approval certificate.

A type approval certificate may include certain conditions (e.g. with respect to supervision).

The period of validity of a type approval decision is normally limited. Once the stated period has expired, the object concerned may no longer be used for new applications. The FOT specifies the period of validity in consideration of the applicant's request. The period of validity may be extended. For this purpose, the applicant is required to submit a request in good time, and is obliged to provide credible evidence that the object concerned is still to be used for the same purpose and meets the original requirements.

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<sup>8</sup> Guidelines dated 1 May 2000 by the Federal Office of Transport concerning Article 6 of the Ordinance on the Construction and Operation of Railways

## **9 Subsequent modifications**

Any modifications after the type approval decision must be submitted to the FOT for approval.

## **10 Acceptance of existing approvals**

Within the scope of its type approval procedure, the FOT may accept existing approval documents (including those issued abroad<sup>9</sup>). In any case, the FOT verifies that the application conditions stated in the existing approval duly apply to those cited in its own current type approval procedure.

## **11 Reporting obligation**

Any findings and/or occurrences of relevance to safety that may be associated with type approved objects have to be immediately reported to the FOT. This reporting obligation applies throughout the entire lifecycle of the object(s) and its series application, from development stage to disposal.

## **12 Revocation**

The FOT is authorised to revoke a type approval in the following cases:

- If the technical and / or operational safety is not guaranteed
- If the present application conditions do not correspond to those specified in the type approval

## **13 Confidentiality**

Those employees of the FOT who handle documents submitted by an applicant in association with the type approval procedure are obliged to observe professional, business and official secrecy in accordance with the provisions of the Federal Employees Act<sup>10</sup>. The FOT is not permitted to pass on any documents or the contents thereof to any third parties without the prior consent of the applicant.

## **14 Fees**

Fees are charged in accordance with the provisions of the FOT's ordinance on fees<sup>11</sup>.

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<sup>9</sup> Obligation of acceptance in accordance with corresponding international agreements

<sup>10</sup> SR 172.220.1

<sup>11</sup> SR 742.102

**15 Effective date**

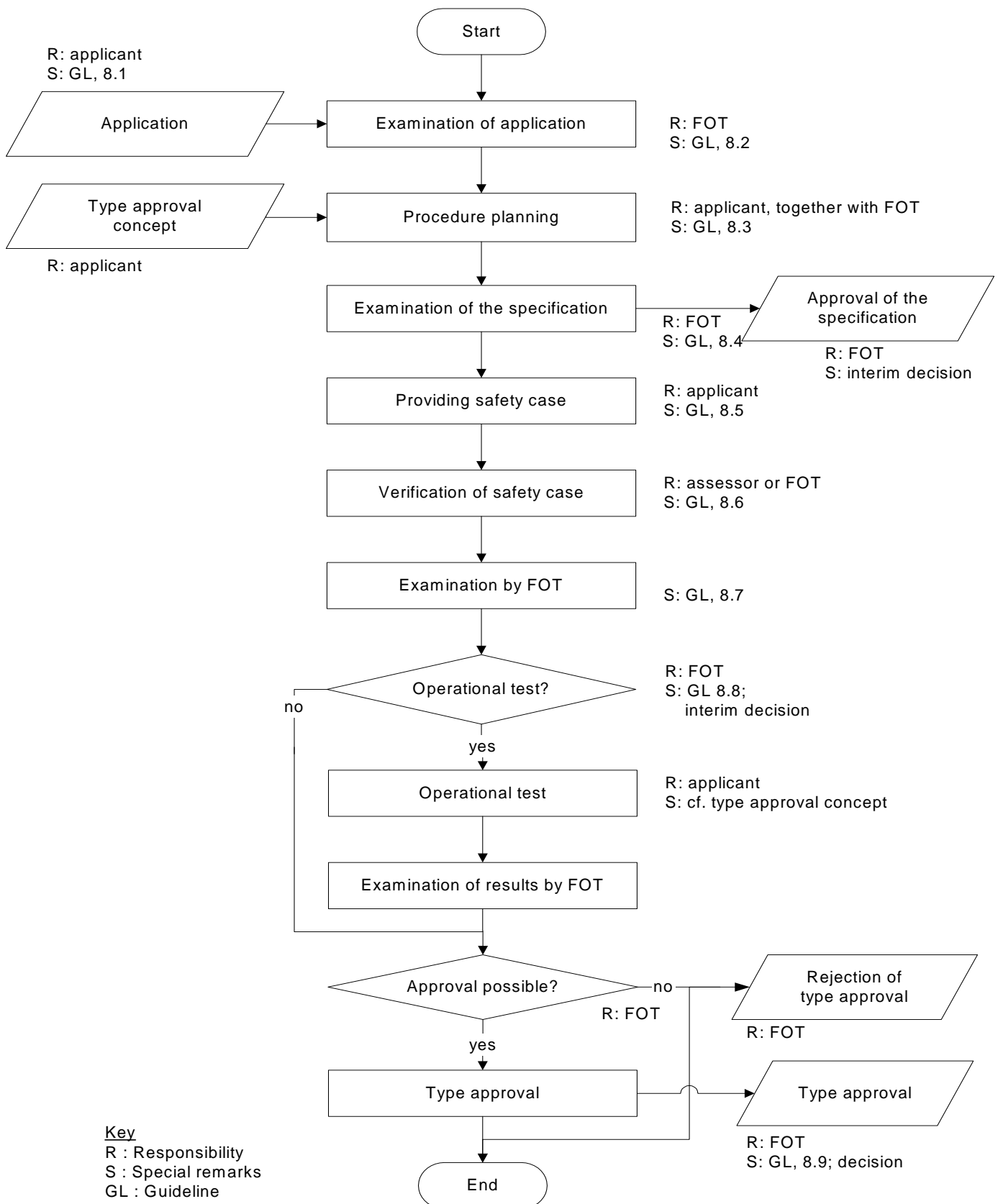
These guidelines are effective as of 1 April 2002.

FEDERAL OFFICE OF TRANSPORT

Max Friedli, Director

ANNEX 1

Type approval procedure in accordance with Article 7 of the Railways Ordinance



## ANNEX 2

Applicable constituents

constituents include objects relating to power supply, tracks / superstructures, buildings / structures.

Power supply

- Catenary systems (including earthing and return current feed)
- Energy transmission systems
- High-tension equipment (switches, separators, converters, etc.)
- Sub-station transformers
- Voltage testers and earth rods
- Catenary wiring material
- Catenary insulators
- Catenary support and wire strainers
- Supports for catenary systems, transmission lines, etc.
- Masts for radio antennas, rail beams, etc., that have to meet special earthing requirements

(List not complete)

Tracks / superstructures

- Rails
- Rail fastenings
- Sleepers
- Switches and crossings and components thereof (switches, crossings, sleepers and bearers, etc.)

(List not complete)

Buildings / structures

- Auxiliary bridges
- Prefabricated subterranean passageways
- Platform roofs
- Platform angle sections
- Waiting rooms

(List not complete)

### Applicable signalling systems

Signalling systems include all items that are used for performing the following functions (list not complete):

- Control / Command
- Signalling
- Automatic train control
- Protection of people in the vicinity of tracks
- Train monitoring
- Train protection (vehicle- and wayside)
- Train describer

Signalling systems may comprise the following sub-systems and components (list not complete):

- Axle counters
- Lineside signals
- Level crossings
- Balises
- Barrier drives, closing devices, warning lamps
- Operating and display elements
- Diagnostics systems
- Vehicle identification (AFI)
- Cab signalling
- Train detection (track circuits, axle counter systems)
- Centralized traffic control systems (CTC)
- Planning and development tools
- Testing devices / simulators
- Registration equipment
- Safety relays

## ANNEX 3

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- Transmission of safety-relevant information
- Safety-related software / safe computers
- Interlockings
- ETCS, ZUB, Signum
- Warning systems (permanent or temporary)
- Points control systems
- Train monitoring devices (hot-box and standstill positioning, wheel flat location, wheel-load scales, profile location)

## ANNEX 4

Wording [translated] of Article 7 of the Railways Ordinance (SR 742.141.1)

**Article 7<sup>1</sup> Type approval**

A certificate of type approval may be issued for vehicles, constituents and signalling systems that are used for multiple purposes in an identical manner and function.

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<sup>1</sup> Version in accordance with Paragraph I of the Ordinance dated 25 November 1998, in effect since 1 January 1999 ([AS 1999 1083](#)).