



National Standards Authority of Ireland

IRISH STANDARD

S.R. CLC/TR 50451:2007

ICS 45.020
93.100

**RAILWAY APPLICATIONS - SYSTEMATIC
ALLOCATION OF SAFETY INTEGRITY
REQUIREMENTS**

National Standards
Authority of Ireland
Glasnevin, Dublin 9
Ireland

Tel: +353 1 807 3800
Fax: +353 1 807 3838
<http://www.nsai.ie>

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*This Irish Standard was
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Authority of Ireland and
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22 June 2007*

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Údarás um Chaighdeán Náisiúnta na hÉireann

TECHNICAL REPORT
RAPPORT TECHNIQUE
TECHNISCHER BERICHT

CLC/TR 50451

May 2007

ICS 45.020;93.100

Supersedes R009-004:2001

English version

**Railway applications –
Systematic allocation of safety integrity requirements**

Applications ferroviaires –
Allocation systématique des exigences
d'intégrité de la sécurité

Bahnanwendungen –
Systematische Zuordnung von
Sicherheitsintegritätsanforderungen

This Technical Report was approved by CENELEC on 2006-02-18.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

This Technical Report was prepared by SC 9XA, Communication, signalling and processing systems, of Technical Committee CENELEC TC 9X, Electrical and electronic applications for railways.

The text of the draft was circulated for vote in accordance with the Internal Regulations, Part 2, Subclause 11.4.3.3 and was approved by CENELEC as CLC/TR 50451 on 2006-02-18.

This Technical Report supersedes R009-004:2001.

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Executive summary

This Technical Report presents a systematic methodology to determine safety integrity requirements for railway signalling equipment, taking into account the operational environment and the architectural design of the signalling system.

At the heart of this approach is a well defined interface between the operational environment and the signalling system. From the safety point of view this interface is defined by a list of hazards and tolerable hazard rates associated with the system. It should be noted that the purpose of this approach is not to limit co-operation between suppliers and railway authorities but to clarify responsibilities and interfaces.

It is the task (summarized by the term Risk Analysis) of the Railway Authority

- to define the requirements of the railway system (independent of the technical realisation),
- to identify the hazards relevant to the system,
- to derive the tolerable hazard rates, and
- to ensure that the resulting risk is tolerable (with respect to the appropriate risk tolerability criteria).

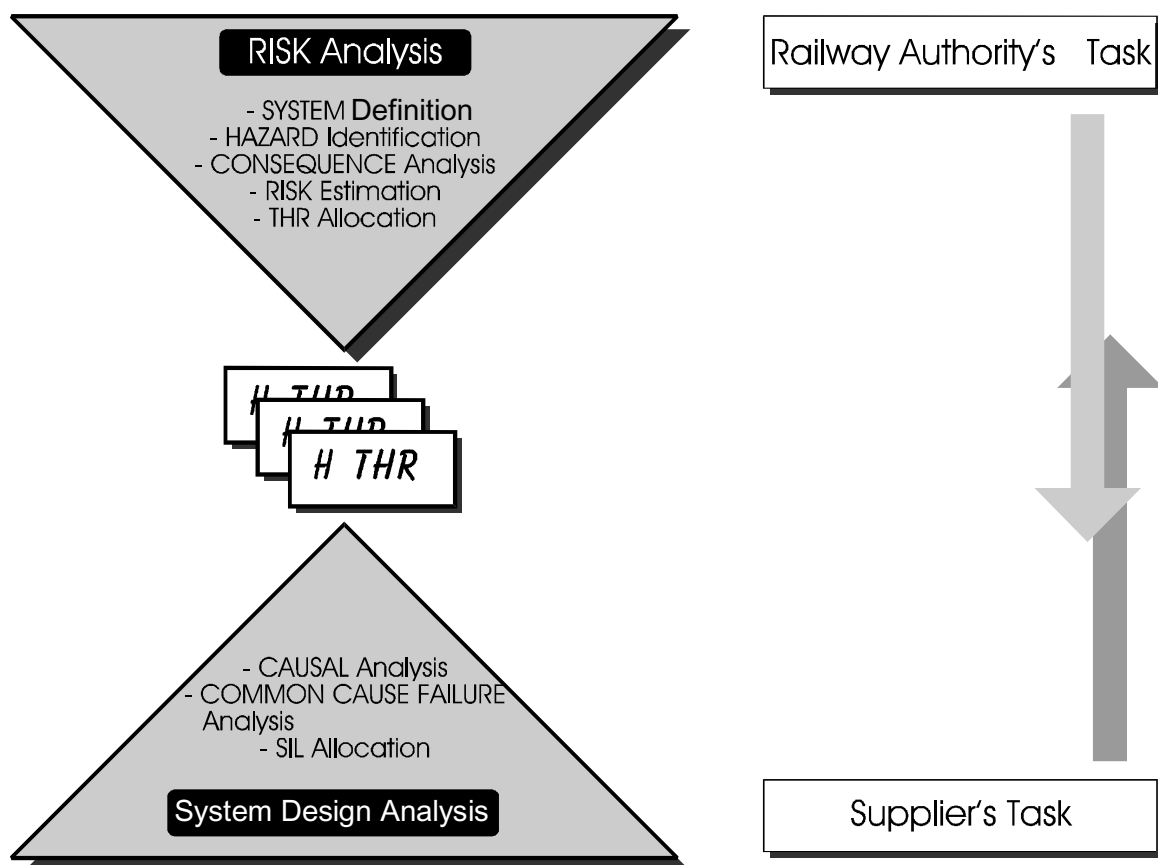


Figure 0.1 - Global process overview

The only requirement is that the tolerable hazard rates must be derived taking into account the risk tolerability criteria. Risk tolerability criteria are not defined by this Technical Report, but depend on national or European legislative requirements.

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