

S9.6 Part 6: Conclusion

for the development of an STM ATB

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1 Preface

1.1 Introduction



This document gives the conclusions for the Generic Product Safety Case for the STM ATB.

1.2 References



Reference documents

All the documents references used in this document can be found in the document  [P6.1 Bibliography](#) available in the Polarion folder  [Processes](#)

Abbreviations, definitions and terminology

An overview of the abbreviations, definitions and terminology used in this document can be found in document  [P6.2 List of abbreviations, definitions and terms](#) available in the Polarion folder  [Processes](#)

Requirement identification

The STM ATB project makes use of an automated requirement management system. In this system each requirement has been identified as a work item. Each work item has been automatically assigned with a unique ID, with the format "STMA-<number>". As a result requirement ID's are not in logical order. An overview of all the used STMA-numbers is given in document  [P6.3 Requirement Overview](#) available in the Polarion folder  [Processes](#)

2 Conclusions

2.1 Overall Conclusion

This document (S9) is the Generic Product Safety Case according to Cenelec EN50129 for the "Blueprint" of an STM ATB as part of the ERTMS programme in the Netherlands.

The technical documentation allows the production, installation, operation and maintenance of the STM ATB. The STM ATB can be used together with a Baseline 3 Release 2 ERTMS onboard in passenger trains and locomotives to operate on the ATBEG protected parts of the Dutch railway network, that are not yet fitted with ERTMS. The STM ATB has been developed to be applied in retrofit projects and in new types of rolling stock.

The safety case summarises the key safety arguments for the STM ATB.

In the early phases of the project the technical and legal requirements have been captured as well as requirements from the stakeholders.

The probability of occurrence of hazards due to systematic failures is minimised due to quality and safety management according to the standards.

The probability or occurrence of hazards due to undetectable random wrong side failures is minimised due to technical measures in the design of the applied hardware and software. Safety related application conditions have been transferred and described in the

Manuals for the later life cycles.

It is concluded that at the level of Generic Product, the STM ATB is suitable for being integrated with an ERTMS onboard generic products and after that, ready for being integrated with specific types of railway vehicles.

It should be noted that:

- safety related application conditions for both the STM ATB (stated next) and the ERTMS Onboard, and if applicable other related safety case(s), should be adhered to;
- known anomalies have to be considered;
- additional testing, safety management and certification activities will be necessary before putting any specific vehicle with the STM ATB into revenue service.

2.2 Safety Related Application conditions

The safety related application conditions are documented in [S9.4.5 SRACs](#)

2.3 System manuals

The following documents shall be adhered to, in production, installation, operational use and maintenance of STM ATB.

M9.1	STM ATB Data sheet
M9.2	STM ATB Manufacturing Manual
M9.3	STM ATB Installation Manual
M9.3A	USED_PACKETS
M9.4	STM ATB Maintenance Manual
M9.4A	Layout JRU data for STM ATB
M9.5	STM ATB User Manual
M9.6	STM ATB Software Product Specification
M9.7	Software Version Description (SVD)

2.4 Restrictions for use

The current version of this document imposes the following restrictions:

There are a number of known issues in version V1.1, described in document [STMA-81400](#). These have no impact on safety of the ATB functionality or reliability in day-to-day use.

However, it is recommended to review these issues, when a next version of the system is implemented and to resolve them if possible.