

T8.5.2 SS076 Test Report

for testing the STM ATB

Colophon	
Document ID	T8.5.2
Version	1.0
Revision	525183
Author	A
Reviewed	525183 ,STMA-77306
Approved	525183 ,STMA-77412
Archive	SID-ERTMS-1000770
Date:	2020/06/09 09:04

Authorization

Compiled by: AIO Signature/E-sign: 525183 ,STMA-77307	Date: 2020/06/09 09:14
Reviewed by: AEO Signature/E-sign: 525183 ,STMA-77306	Date: 2020/06/09 09:06
Approved by: AXO Signature/E-sign: 525183 ,STMA-77412	Date: 2020/06/09 19:13

Contents

1	Preface	3
1.1	References	3
1.2	Identification	3
2	Analysis of test results	4
2.1	Test plan	4
2.1.1	Coverage of requirements to test plan	4
2.2	Test implementation	4
2.2.1	Coverage of test plan to implementation	4
2.3	Version comparison	5
3	Detailed test results	7
	Results:	7
	Test results:	7
4	Test log	8
5	Conclusion	8

1 Preface

Text, STMA-73265 - This test report present the results of the integration tests regarding the STM part of the STM ATBEG, against the test sets defined by ERA in Subset-076. As the Subset-076 is not written for testing an STM, Multitel has adapted the ERA provided testcases to show the activities of the STM and the STM controller. Together with the test plan [T8.5.0] and verification report [R8.99]. this test report gives a complete analysis of the quality of implementation regarding the STM related requirements from Subset-035.



1.1 References

Text, STMA-14296 - 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](#)

1.2 Identification

Text, STMA-73242 - This test report contains the results of the tests done at Multitel.

The tests are executed on the test object, with the following specific identification details.

Item	Identification
Functional Processor	V0.954 Git hash: 72fd105715a2f08486b9c53f258f159ef62a690e
Profibus Processor	V0.954 Git hash: 72fd105715a2f08486b9c53f258f159ef62a690e
FPGA	V1.0

Text, STMA-73304 - The hardware identification details are:

Board	Version
SAP board	IC169408 (C2)

AIN board	172378 (R110)
PS + DIO board	187111 (R110)
Backplane	109042 (R110)

2 Analysis of test results

2.1 Test plan

Text, STMA-77185 - The test plan contains the test objectives and criteria.

The tests were performed in accordance with the verified test plan:

Document	Location	Status	Revision
T8.5.0	Polarion	Verified	480121

2.1.1 Coverage of requirements to test plan

Text, STMA-77186 -

The coverage of requirements in [D4.7.4] by the test plan [T8.5.0] was verified by [R4.7.4.1]. The requirements in the subset targeted by this test report are generally in Chapters 10, 13 and 17 and the tests are used to complement the prescribed Subset-074-2 tests.

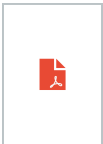
Document	Location	Status	Revision
R4.7.4.1	Polarion	Verified	521705

2.2 Test implementation

Text, STMA-77190 - The tests have been implemented by Multitel.


2.2.1 Coverage of test plan to implementation

Text, STMA-77191 - The coverage of the test plan to implementation has been guaranteed by



Multitel as shown in their test coverage matrix. See attached document.

2.3 Version comparison

Text, STMA-73246 - The Subset-076 tests have been performed by Multitel on an older firmware version then currently released. This analysis has been created to identify differences between the tested version and the current release. From this delta between the two versions it can be derived if there is a significant risk to the validity of the test results. To mitigate the risk that a change will negatively impact the interoperability of the STM with any EVC, the results test  **STMA-70123** - [T9.0.1.0 Annex 1 - Functional integration tests](#) on one of the latest firmware versions can be checked. This proves that the interface is compliant.

Text, STMA-77112 -

Nu mb er	Difference	Impact
1	All code related to Packet 45 has been removed	None
2	In both versions, in response to Packet STM-180 a packet STM-179 is sent. In the current version this only done when the STM is in states CS/HS/DA.	None
3	A number of changes were made in the computation by the STM Layer of the speed information to be used by the ATB EG Function.	None
4	Sounds to DMI are also updated when there is a change in the connection status or there is a change in the active DMI changes.	None
5	Transition 9 (CO -> CO Requested -> CS) has an extra condition on stml_m_modestm : (stml_m_modestm != Sleeping/NonLeading)	Adding the extra condition has no impact on the expected result. The result was already OK and will not change due to the extra condition.
6	Transition 18 (DA Trip -> DA) has an extra condition on state order: (state_order != eSTO_U_CS)	Adding the extra condition has no impact on the expected result. The result was already OK and will not change due to the extra condition.
7	Transition 22 (* -> FA) has an extra	None

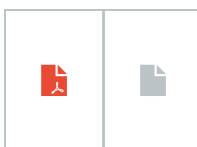
	condition: (STM ATB machine did not change to responsible in time)	
8	The current version sends an additional type of JRU packet. The STM ATB sends JRU packets more often.	More information is available for analysis of errors.
9	Operating the Override button is now recognized via both packet STM-7 and STM-34 instead of only via packet STM-7.	Override has been tested and approved. Adding a second packet to go to Override, does not impact the result.
10	If the STM is ordered from NonLeading or Sleeping to another mode and not all parameters are available safe default values are used. This now also applies to stml_m_brake_percentage_stm.	Default brake percentage is not used for testing purposes.
11	If an illegal value is received in packet STM-175 for V_MAXTRAIN the value is no longer stored but a safe value is stored instead (30 km/h).	STM-175 is used only in the happy flow, No tests on illegal values is present.
12	A failing BIU connection is signalled as an event when in state DA.	The status FAIL of the BIU is not tested in SS-076.
13	Icon IDs for the indicators in packet STM-35 where changed.	The ID's have been reordered. This has no impact on the functionality and this as no impact on the test results. The DMI images related to the tests are outdated.
14	If the STMATB state is 'Responsible' or 'Preparing' and then changes to 'Inactive' all indicators, buttons, and sounds are cleared.	This behaviour has no impact on the tests in SS-074.
15	The Indicator for the lowest guarded no longer contains text with the corresponding speed.	This has no impact on the SS-076 tests, the indicators of the NTC system have been checked against the old layout. This has no impact on the functionality.
16	Variable length array in STM-Packets are checked for overflow in the Subset 58 decoder.	There are no test cases related to overflow of packets defined in SS-074.

17	The rate at which the gong can be triggered via Packet STM-46 has been limited.	This change is not audible and doesn't impact the testresults.
18	The Test button is no longer displayed.	No impact, the TEST part of the SS-076 was not tested, as it was already clear the STM ATBEG doesn't have a test.
19	The Safety Layer now disconnects when the transfer time parameters are not set during connection setup.	No unhappy flow tests are defined for the connection setup.


3 Detailed test results

STMA-73306 - The tests done by Multitel have been succesfully concluded without remarks.

Please see the test report added below. The first part is the summary report, the second document is a ZIP with all detailed results. [🔍 Verified]



The table below lists the test definitions with the means of compliance as 'test'. These automated tests are considered passed, when the test results match the expectations.

Test definition	Test result	Status
 STMA-73155	STMA-73306	Outdated result

Results:

Total amount of test definitions (with either means of compliance test or inspection): 1

Test results:

Total amount of tests: 1

Total amount of test results: 1

Total amount of test results with: 'No result (yet)': 0

Total amount of test results with: 'Outdated result': 1

Total amount of test results with: 'Passed': 0

Total amount of test results with: 'Failed': 0

4 Test log

Text, STMA-73307 - For the detailed results from the tests, please refer to the reports in T8.5.2 Subest-076 test reports

5 Conclusion

Text, STMA-77274 - The evidence from the tests executed by Multitel shows that the STM ATBEG is compliant to the subset-035 v3.2.0.