

DK-STM

Integration test 2

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Change log

Version	Date	Author	Changed sections	Reason for change
01.00	2017-04-17	XAAV	Prepared	Document prepared
01.01	2018-05-01	ECP	6	Two file name errors for test 11 are corrected.
01.02	2019-01-07	ECP	7.1	Wrong ERA Position. Futter corrected on all pages.
01.03	2019-07-08	ECP	All	Changes due to test in Berlin. No HLOG and MSR3 tests.

1 Purpose

This document serves as the test specification for testing of STM - DK functionality to prove that the function complies with the existing STM-DK ZUB 123 train control system. The purpose of the test is to prove the correct functionality of the DK-STM when integrated with an EVC baseline 3. The specification contains a description of all tests to be performed. The expected result for the maintenance test cases has to be filled in before any execution of the functional test cases.

2 Introduction

Introduction to test case sheets

Column “no.” defines the test number. All test scenarios are numbered with a unique number starting with no. 1.

Column “Action” describes the action which is needed from the test manager to perform the test.

Column “Expected result” describes the expected result.

Column “Result” the result of the test is written. If the test is passed the test manager writes “OK”, if the test has failed the text will be “FAILED”.

All test scenarios are unique.

Column “Cross-reference” “Line of tracks for FAT” refers to enclosure appendix.

“Line of tracks for FAT” shall follow the protocol according to appendix 1.

Telegrams not used due to changes specified have been marked in yellow. The correct balise telegram to be used is written right after.

Column “Comments” includes any comments from the test manager.

CAB A shall be used for all test cases.

In section 5, a summary of all findings for the test cases shall be listed.

Test bench

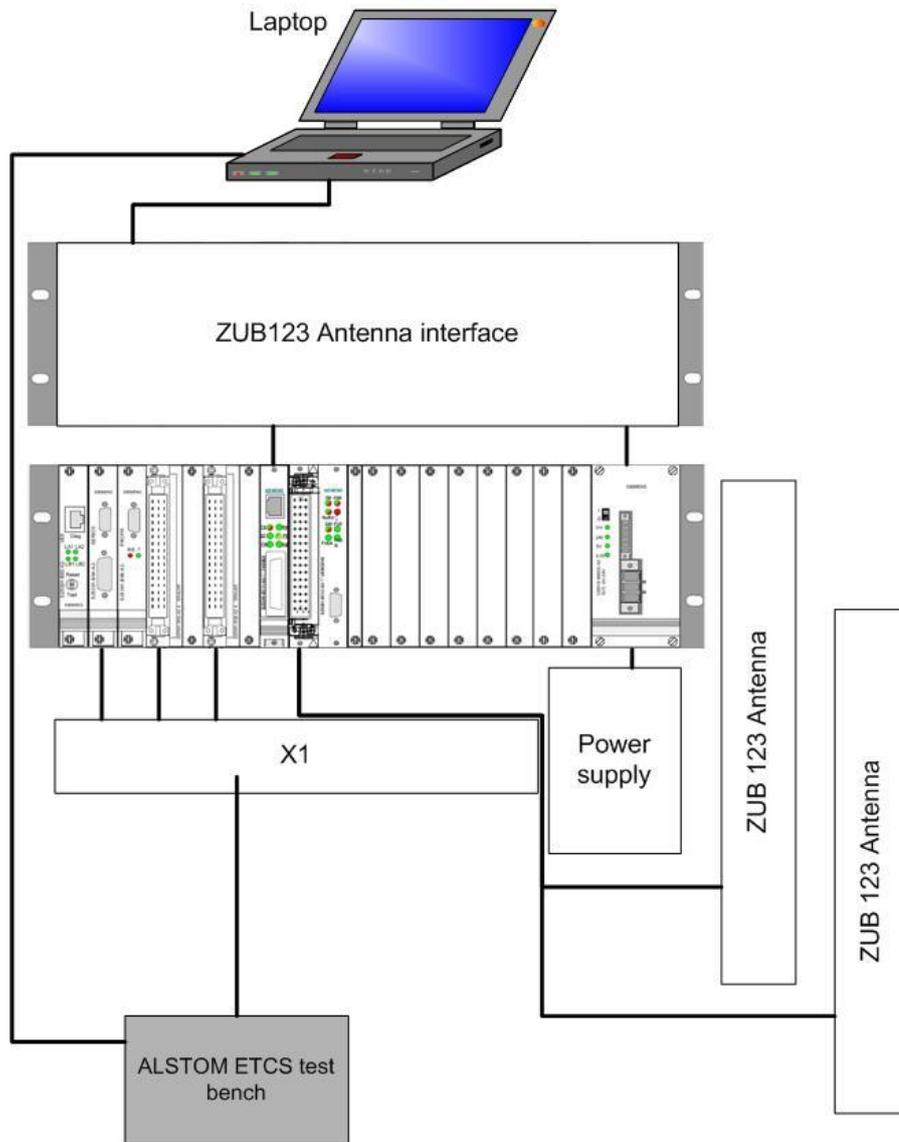


Fig. 1 STM-DK Integration test bench.

Figure 1 shows an example of test bench set up as used for the integration with the Alstom EVC.

3 Train data

Train Type: _____ (Selected train type number)

ETCS train data:

NID_OPERATIONAL: Don't care
NC_TRAIN: Don't care
L_TRAIN: _____ m
Brake percent: _____ % (optional, depending of baseline)
V_MAXTRAIN: _____ km/h
M_LOADINGGAUGE: Don't care
M_AXLELOAD: Don't care
M_AIRTIGHT: Don't care

STM specific data:

X_VALUE [0]: _____ m (L_TRAIN)
X_VALUE [1]: _____ % (brake %)
X_VALUE [2]: _____ km/h (equal to V_MAXTRAIN)
X_VALUE [3]: A (ATC direction – letter A)
Maintenance (selection)
X_VALUE [4]: **** (maintenance bypass)
X_VALUE [4]: 3112 (maintenance access code)

Maintenance activated:

X_VALUE [0]: SW version (output) _____
X_VALUE [1]: Litra number (input) _____
X_VALUE [2]: Enable Havarilog (input) No (Yes / No)
X_VALUE [3]: V_{max} interv (100ms) (input) _____ seconds

Tuning: (selection)

X_VALUE [4]: none (input)
X_VALUE [5]: Tuning balise A (input) _____ (Yes / No)
X_VALUE [6]: Tuning balise B (input) _____ (Yes / No)

V_{max} interv (100ms)

4.1 Maintenance tests

No.	Action	Expected result	Result	Comments	
M1	Check tuning.				
	1. Start STM-DK	The following are shown:			
	2. In STM state DE activate the maintenance by adding the code 3112.	SW version:			Last digit (3) refers to the Unisig Baseline, currently the baseline 3.
		Litra Type number			
		Enable Havarilog y/n			
		V _{max} interv (100ms)			
	Start tuning A	FF555 is shown on the DMI and diagnose			The tuning takes about 1 minute. When tuning is selected, the text “running A” or “running B” will be shown, dependent of the selected antenna. By pressing the “enter-button” on the DMI after 1 minute, the result of the tuning will be shown on the DMI. To finish the tuning press the “X”-button on the DMI
	Do step 1 and 2				
Start tuning B	FF555 is shown on the DMI and diagnose			The tuning takes about 1 minute. When tuning is selected, the text “running A” or “running B” will be shown, dependent of the selected antenna. By pressing the “enter-button” on the DMI after 1 minute, the result of the tuning will be shown on the DMI. To finish the tuning press the “X”-button on the DMI.	
Do step 1 and 2					

No.	Action	Expected result	Result	Comments
M2	Check sw ver.			
	1. Start STM-DK			
	2. In STM state DE activate the maintenance by adding the code 3112.	Observe that the shown sw ver. Is the correct one.		
M3	Check Litra no.			
	1. Start STM-DK			
	2. In STM state DE activate the maintenance by adding the code 3112			
	Select litra MF (IC3) = 90	Litra = 90		STM shall be restarted
	Repeat 1 and 2.			
	Select litra MR = 40 or the litra type you want to use during the integration test.	Litra = 40 or the actual one.		STM shall be restarted
	Repeat 1 and 2.			
	Check Litra no.	Observe that the shown litra type number is the correct one		

4.2 Functional tests

Prerequisites	
Assumption:	
<ul style="list-style-type: none"> It is assumed that the Integration test no. 1 has been successfully executed by ___(supplier)___ because Test 1 covers the communication between the EVC and the STM. Test no. M1 through M3 has been successfully executed. 	

No.	Action	Expected result	Result	Cross-reference	Comments:
0	Add train data. (See sec. 2.4)	"- -" is indicated in the yellow display Increase speed to 4 km/h backwards and see DRIFTS BREMSE in field. After 5 m will the emergency brake be activated.			
1	Normal driving with full target distance toward stop.	Test that the indication in DMI is as expected. The indication should correspond to the present ATC-indication. When passing a signal (balise), the passage speed is indicated at the next signal. When passing AM-1741 that indicates "drive", "000" (red) is indicated toward the I-signal. ATC INDE is displayed in field. "Valg" is displayed in field.		See "Line of tracks for FAT" Test no. 1: (From Sorø toward Ringsted) Balise files: PU-E3: 0FPF2C8U.03A (7) U-1777: 0FPF2BWJ.02A (3) AM-1761: 0FPA2AAW.URA (7) AM-1741: 0FPA28FH.URA (5) I-1727: 0FP7273A.01A (0)	
2	Check if LØS ATC is offered toward the U-signal in stop. Driving forward should take place without reaching the braking curve. The release offered is not used. Drive past the U-signal in stop. Following the emergency braking, this is acknowledged. Drive on.	When passing PU-E3 expect LØS ATC is raised. LØS ATC is offered. Emergency braking is achieved at the U-signal. Test that the permitted speed is 40 km/h. When passing AM-1761 update to full ATC is undertaken. ATC INDE is displayed in field.		See "Line of tracks for FAT" Test no. 2: (From Sorø toward Ringsted) Balise files: PU-E3: 0FPF2C8U.03A (5) U-1777: 0FPF2BWJ.02A (0) AM-1761: 0FPA2AAW.URA (7)	

No.	Action	Expected result	Result	Cross-reference	Comments:
2a	Check if LØS ATC is offered toward the U-signal that indicates 3 gr. Driving forward should take place without reaching the braking curve. The LØS ATC is used. Drive takes place past the U-signal.	When passing PU-E3 expect LØS ATC is indicated. LØS ATC is offered. It is possible pass the signal with the speed the LØS ATC offered.		See "Line of tracks for FAT" Test no. 2a: (From Sorø toward Ringsted) Balise files: PU-E3: 0FPF2C8U.03A (5) U-1777: 0FPF2BWJ.02A (3) AM-1761: 0FPA2AAW.URA (7)	The train is stopped before AM-1761
2b	Entry and reduced driving. Stopping takes place 50 m in front of PU-E2. Driving on takes place toward U-1707.	VZ-indication or FH indication after stopping. After passing PU-E2 "- -" (yellow) is indicated. After passing U-1707 there is full ATC indication.		See "Line of tracks for FAT" Test no. 2b: (Into Fjenneslev from Sorø.) Balise files: I-1727: 0FP7273A.01A (2) PU-E2: 0FP72627.02A (5) U-1707: 0FP7253R.01A (5)	The indication is VZ if it is the most restrictive otherwise FH is shown.
3a	Driving with FH-indication. Starting takes place before U-K (U-1624) and driving takes place until AM-1557 has been passed.	After U-1624: "180" (red). Possible FH toward AM-1610. Shown FH – 170 – 160 – 150 – 170 VX shown.		See "Line of tracks for FAT" Test no. 3: (Ejby - Årup) Balise files: U-K (U-1624): 6TSY1VXS.01A (3) AM-1610: 6TSR1UK2.URA (3) FH1610: 6TSR1UJE.URA (0) AM-1596: 6TSR1T79.URA (3) FH1596: 6TSR1T6N.URA (0) AM-1577: 6TSR1RBU.URA (7) FH1577: 6TSR1RB7.URA (0) AM-1557: 6TSR1PDE.URA (3)	Test run with selected Train Type.
3b	Same test, but with an IC3. Driving with FH-indication. Starting takes place before U-K (U-1624) and driving takes place until AM-1557 has been passed.	After U-1624: "180" (red). Possible FH toward AM-1610. Shown FH – 170 – 160 – 150 – 170 VX shown.		See "Line of tracks for FAT" Test no. 3: (Ejby - Årup) Balise files: U-K (U-1624): 6TSY1VXS.01A (3) AM-1610: 6TSR1UK2.URA (3) FH1610: 6TSR1UJE.URA (0) AM-1596: 6TSR1T79.URA (3) FH1596: 6TSR1T6N.URA (0) AM-1577: 6TSR1RBU.URA (7) FH1577: 6TSR1RB7.URA (0) AM-1557: 6TSR1PDE.URA (3)	Test run with IC 3 Train Type No. 90 or other train type no. allowing the speed 180 km/h. Values for IC3 train type number 90: <ul style="list-style-type: none"> • Speed: 180 km/h • Breaking: 180 % • Length: 180 m

No.	Action	Expected result	Result	Cross-reference	Comments:
4	Normal driving with LA60 on open track. LA-balises are passed. LA-balise to stop is passed. Stopping takes place before I-1727.	VX-indication after passing all signal balises. LA060 is indicated. LA060 disappears again when the train length has been reached.		See "Line of tracks for FAT" Test no. 4: (From Sorø toward Ringsted) Balise files: PU-E3: 0FPF2C8U.03A (7) U-1777: 0FPF2BWJ.02A (3) LA60: 02B003W0.1VA (0) AM-1761: 0FPA2AAW.URA (7) LA-cancel: 00000000.1VA (0) AM-1741: 0FPA28FH.URA (5) I-1727: 0FP7273A.01A (0)	
5	Driving with distant signal balises. BFS.	Test that the indication in DMI is as expected. The indication should correspond to the present ATC-indication. "- - -". and FH are indicated in the relevant places. The target distance increases after passing BFS1233, where "kfors" from BFS1222 is changed to "ktavle".		See "Line of tracks for FAT" Test no. 5: (From Vejen toward Holsted) Balise files: U-K (U1125): 8W5B0C5H.01b (5) BFH1163h: 8W5E0FXN.R9b (0) BFH1164h: 8W5E0FYA.R9b (0) BFS1169: 8W5E0GF5.R9b (5) AM-1192: 8W5E0JT5.R9b (5) BFS1222: 8W5E0NQ9.R9b (0) BFH1222: 8W5E0NRU.R9b (0) BFH1223: 8W5E0NSG.R9b (0) BFS1233: 8W5E0PSN.R9b (2) BFH1233: 8W5E0PU7.R9b (0) BFH1234: 8W5E0PUV.R9b (0) I-A (I1246): 8W5S0R29.01b (2) FH1246: 8W5S0R2X.01b (0)	When passing U-Signal K "---" is not always shown. A free test should be added increasing the speed to 206 km/h, shown on the DMI. SB and EB should be activated
6	Normal driving on open track. Driving forward takes place without reaching the braking curve. Check if LØS ATC is offered toward I-signal in stop. Driving forward should take place without reaching the braking curve and is stopped 50 m before the I-signal.	When passing AM-1761: VX-indication. When passing AM-1741: "000" (red) + expect LØS ATC. Surveillance speed is shown LØS ATC is offered toward I-1727.		See "Line of tracks for FAT" Test no. 6: (From Sorø toward Ringsted) Balise files: AM-1761: 0FPA2AAW.URA (7) AM-1741: 0FPA28FH.URA (5) I-1727: 0FP7273A.01A (0)	I-1727 is not passed

No.	Action	Expected result	Result	Cross-reference	Comments:
7	Normal driving. Driving forward takes place without reaching the braking curve. The LØS ATC is not used. Stopping takes place before the I-signal that indicates SORF. Driving takes place past the I-signal.	When passing AM-1761: VX-indication. When passing AM-1741: "000" (red) + expect LØS ATC. LØS ATC is offered toward I-1727. When passing I-1727: SORF-indication station. "40" (yellow) "- - -" (red, flashing).		See "Line of tracks for FAT" Test no. 7: (From Sorø toward Ringsted) Balise files: AM-1761: 0FPA2AAW.URA (7) AM-1741: 0FPA28FH.URA (5) I-1727: 0FP7273A.01A (1)	
7a	Normal driving. Driving forward should take place without reaching the braking curve. The LØS ATC is used. Stopping takes place before the I-signal that indicates SORF. Driving takes place past the I-signal	When passing AM-1761: VX-indication. When passing AM-1741: "000" (red) + expect LØS ATC. LØS ATC is offered toward I-1727. When passing I-1727: SORF-indication station. "40" (yellow) "- - -" (red, flashing).		See "Line of tracks for FAT" Test no. 7a: (From Sorø toward Ringsted) Balise files: AM-1761: 0FPA2AAW.URA (7) AM-1741: 0FPA28FH.URA (5) I-1727: 0FP7273A.01A (1)	
8	Normal driving. Driving forward should take place without reaching the braking curve. The LØS ATC is used. The I-signal that indicates "ktavle" is passed. Stopping takes place 300 m after I-1727.	When passing AM-1761: VX-indication. When passing AM-1741: "000" (red) + expect LØS ATC. LØS ATC is offered toward I-1727. When passing I-1727: "000" (red). Stopping gives VZ- indication.		See "Line of tracks for FAT" Test no. 8: (From Sorø toward Ringsted.) Balise files: AM-1761: 0FPA2AAW.URA (7) AM-1741: 0FPA28FH.URA (5) I-1727: 0FP7273A.01A (2)	
8a	Normal driving. Driving forward should take place without reaching the braking curve. The I-signal that indicates "ktavle" is passed. The I-signal is equipped with a loop that is planned to be reduced.	When passing AM-1761: VX-indication. When passing AM-1741: "000" (red) + expect LØS ATC. Due to the loop there is no LØS ATC toward I-1727. As the loop sends reduced, "--" (yellow) is indicated. When passing I-1727: "- -" (yellow). When stopping, "- -" (yellow) is still indicated.		See "Line of tracks for FAT" Test no. 8a: (From Sorø toward Ringsted. Changed planning in I1727.) Balise files: AM-1761: 0FPA2AAW.URA (7) AM-1741: 0FPA28FH.URA (5) I-1727: "0FP7273A.01A" (2) I-1727Sie: 0FP7273a_Sie.01A (2) I-1727 has 500 m loop and is planned to be reduced. STB7 = 1, STB12 = 0, STB9 = 0 EBA = 1	It shall be remarked that the condition for acceptance of I-reduced loop (EBA1) is $V < 40$ km/h and the rest distance (RestZ1) < 180 m "LØS ATC" is shortly offered before showing: "- -" It is possible to acknowledge "LØS" but shortly after the "- -" is shown.

No.	Action	Expected result	Result	Cross-reference	Comments:
8b	<p>Normal driving. Driving forward should take place without reaching the braking curve.</p> <p>The I-signal that indicates "ktavle" is passed. The I-signal is equipped with loop.</p>	<p>When passing AM-1761: VX-indication. When passing AM-1741: "000" (red) + expect LØS ATC.</p> <p>Due to the loop there is no LØS ATC toward I-1727. On the loop you get the target distance and VX-indication. When passing I-1727: "000" (red).</p> <p>Stopping gives VZ-indication.</p>		<p>See "Line of tracks for FAT" Test no. 8b: (From Sorø toward Ringsted. Changed planning in I-1727.) Balise files: AM-1761: 0FPA2AAW.URA (7) AM-1741: 0FPA28FH.URA (5) I-1727: "0FP7273A.01A" (2) I-1727Sie 0FP7273a_Siexa.01A (2)</p> <p>I-1727 has 500 m loop and STB7 = 1, as opposed to no. 8a the loop does not send reduced.</p>	<p>After I-1727 a short flash "000" before FH040 is shown (depending on breaking curve).</p>
9	<p>Normal driving. Driving forward should take place without reaching the braking curve. The LØS ATC is used. Driving takes place past the I-signal that indicates "drive".</p>	<p>When passing AM-1761: VX-indication. When passing AM-1741: "000" (red) + expect LØS ATC.</p> <p>LØS ATC is offered toward I-1727. When passing I-1727: "000" (red). The target distance increases.</p> <p>Stopping gives VZ-indication.</p>		<p>See "Line of tracks for FAT" Test no. 9: (From Sorø toward Ringsted) Balise files: AM-1761: 0FPA2AAW.URA (7) AM-1741: 0FPA28FH.URA (5) I-1727: 0FP7273A.01A (5)</p>	
10	<p>Normal driving. Driving forward should take place without reaching the braking curve. The LØS ATC is used. Driving takes place past the I-signal that indicates 2 gr.</p>	<p>When passing AM-1761: VX-indication. When passing AM-1741: "000" (red) + expect LØS ATC.</p> <p>LØS ATC is offered toward I-1727. When passing I-1727: VX-indication The target distance increases. Stopping gives VZ-indication.</p>		<p>See "Line of tracks for FAT" Test no. 10: (From Sorø toward Ringsted) Balise files: AM-1761: 0FPA2AAW.URA (7) AM-1741: 0FPA28FH.URA (5) I-1727: 0FP7273A.01A (7)</p>	
11a	<p>Normal driving.</p> <p>Stopping should take place 30 m before, Z1 received in SI-1322 expires.</p>	<p>When passing AM-1340: VX-indication. FH-indication. When passing I-1329: "000" (red). FH-indication. When passing SI-1322: "000" (red). There is a max speed of 40 km/h.</p> <p>VZ-indication when stopping.</p>		<p>See "Line of tracks for FAT" Test no. 11: (From Ringsted toward Roskilde) Balise files: AM-1340: 0PDJ117A.URA (7) BFH1340: 0PDJ116P.URA (0) I-1329: 0CP8105N.04A (12) BFH1329: 0CP81050.04A (0) SI-1322: 0CP80YH1.04A (8) BFH4323v: 0CP80YGC.04A (0)</p>	<p>Test run with selected Train Type.</p> <p>VX- or FH-indication depends on which one is the most restrictive. FH is not shown when speed is below the braking curve.</p>

No.	Action	Expected result	Result	Cross-reference	Comments:
11b	Normal driving. Stopping should take place 30 m before, Z1 received in SI-1322 expires.	When passing AM-1340: VX-indication. FH-indication. When passing I-1329: "000" (red). FH-indication. When passing SI-1322: "000" (red). There is a max speed of 40 km/h. VZ-indication when stopping.		See "Line of tracks for FAT" Test no. 11: (From Ringsted toward Roskilde) Balise files: AM-1340: 0PDJ117A.URA (7) BFH1340: 0PDJ116P.URA (0) I-1329: 0CP8105N.04A (12) BFH1329: 0CP81050.04A (0) SI-1322: 0CP80YH1.04A (8) BFH4323v: 0CP80YGC.04A (0)	Test run with IC 3 Train Type No. 90 or other train type no. allowing the speed 180 km/h. Values for IC3 train type number 90: • Speed: 180 km/h • Breaking: 180 % • Length: 180 m ETCS applied a service break because of transmission time out to the dmi, shifting 1 st and 2 nd .
12	Entry on a station with reduced indication and with LA40, before a FH40 starts.	When passing AM-1761: VX-indication. When passing AM-1741: "000" (red) + expect LØS ATC. Driving on the loop to I-1727 gets reduced indication "- -" (yellow) 180 m before I-1727. LA40 starts 100 m after I-1727. FH40 starts 260 m after I-1727.		See "Line of tracks for FAT" Test no. 12: (From Sorø toward Ringsted) Balise files: AM-1761: 0FPA2AAW.URA (7) LA40: 02B00034.18A (0) AM-1741: 0FPA28FH.URA (5) I-1727: 0FP7273A.01A (2) I-1727Sie 0FP7273a_Sie.01A (2) I-1727 has 500 m loop and is planned to be reduced. STB7 = 1, STB12 = 0, STB9 = 0 EBA = 1	See loop comment above (test 8a). After passing I-1727 the speed limitations are in the system, but they are not indicated when driving takes place with reduced speed. Speed below 40 correct result. "- -" is not shown but La 40 since this braking curve is the most restrictive. This is OK. After passing La 40, "- -" is shown.

No.	Action	Expected result	Result	Cross-reference	Comments:
13	Driving with indication of flank protection. Emergency braking when trying to pass PU-signal in 90°. Normal driving. 100 m before the PU-signal the train stops. After flank protection indication, the driving and speed is kept below the VZ-speed. Driving takes place past the PU-signal.	When passing SI-1322: "000" (red). VZ-indication. The flank protection speed. The train is emergency broken.		See "Line of tracks for FAT" Test no. 13: (From Ringsted toward Roskilde) Balise files: SI-1322: 0CP80YH1.04A (5) BFH4323v: 0CP80YGC.04A (0) BO/BFM4316v: 0CP80XTQ.04A (0) PU-K4: 0CP80XDF.04A (2) BFH4311v: 0CP80XCT.04A (0)	
14	Driving on the free line with a crossing	When passing PU-C1: VX-indication. When passing U-2497: "- - -" (red). When passing BFF2513h: "- - -" (red), VZ-indication, "- - -" (red) When passing BFH2514h: When passing BFS2524h: UO 005 is indicated. When the speed has been down to 5 km/h at the crossing, driving can be continued quickly after.		See "Line of tracks for FAT" Test no. 14: (From Hvalsø toward Tølløse.) Balise files: PU-C1: 1JTH1FYW.01b (7) U-2497: 1JTH1GCJ.01b (5) BO2497: 1JTJ1GGJ.MTb (0) BFF2513h: 1JTJ1J5D.MTb (5) BFH2514h: 1JTJ1J62.MTb (0) BFS2524h: 1JTJ1K7U.MTb (7) BFH2525h: 1JTJ1K8G.MTb (0)	
14a	Driving on the open track with a level crossing that is OK.	When passing PU-C1: VX-indication. When passing U-2497: "- - -" (red) When passing BFF2513h: "- - -" (red), VZ-indication, "- - -" (red) When passing BFH2514h: When passing BFS2524h: VZ-indication.		See "Line of tracks for FAT" Test no. 14a: (From Hvalsø toward Tølløse.) Balise files: PU-C1: 1JTH1FYW.01b (7) U-2497: 1JTH1GCJ.01b (5) BO2497: 1JTJ1GGJ.MTb (0) BFF2513h: 1JTJ1J5D.MTb (5) BFH2514h: 1JTJ1J62.MTb (6) BFS2524h: 1JTJ1K7U.MTb (7) BFH2525h: 1JTJ1K8G.MTb (6)	At short distance before BFF2513h UO 005 is indicated this is OK because of the breaking curve. After BFF2513h "----" (red)

No.	Action	Expected result	Result	Cross-reference	Comments:
15	Station with level crossing. Drive into the station and stop 30 m before SU-M. Press PASS STOP and drive past SU-M.	When passing I-1246 and FH1246: VX-indication. PASS STOP button is displayed in field. PASS STOP is indicated in field. When passing SU-M, "UO 005" is indicated.		See "Line of tracks for FAT" Test no. 15: (From Vejen into Holsted Station.) Balise files: I-A (I-1246): 8W5S0R29.01b (5) FH1246: 8W5S0R2X.01b (0) BFM1257h: 8W5S0S45.01b (0) SU-M: 8W5S0SBY.01b (6)	When driving too fast the "UO 005" got the most restrictive speed, and popped up in the display at the DMI while Passage Stop was active, and the experience was, that Passage Stop was lost and the system vent to "reduceret". Not blocking since the issue only occur when the surveillance speed is below 40 which is very rare. Siemens will fix the issue with the next SW update.
16	Entry on station with reduced indication. Stop is done 50 m before PU-E2. Driving continues.	When passing AM-1741: "000" (red) + expect LØS ATC. Due to the loop there is no LØS ATC toward I-1727. As the loop sends reduced, "- -" (yellow) is achieved. When passing I-1727: "- -" (yellow). When stopping, "- -" (yellow) is still indicated. When passing PU-E2: "- -" (yellow) + expect LØS ATC.		See "Line of tracks for FAT" Test no. 16: (Fjenneslev from Sorø.) Balise files: AM-1741: 0FPA28FH.URA (5) I-1727: 0FP7273A.01A (2) I-1727Sie 0FP7273a_Sie.01A (2) I-1727 has 500 m loop and is planned to be reduced. STB12 = 0, STB9 = 0 STB7 = 1, EBA = 1 PU-E2: 0FP72627.02A (5) U-1707: 0FP7253R.01A (5)	Release speed "Løsetilbud" is shown shortly before showing: "- -"

No.	Action	Expected result	Result	Cross-reference	Comments:
17	<p>Emergency braking at passing stop sending balise and further driving.</p> <p>Rig up. Press RANGER.</p> <p>It is attempted to drive past a stop sending balise in shunting without activating PASS STOP.</p> <p>After emergency braking driving continues past PU-M2a. Here shunting is allowed.</p>	<p>"- -" (yellow) is indicated. RANGER button is displayed in field RANGER is indicated in field "40" (yellow) is indicated.</p> <p>The train is emergency broken.</p> <p>Driving can take place past the signal, without getting an emergency braking. When passing PU-M2a: "40" (yellow).</p>		<p>See "Line of tracks for FAT" Test no. 17: (Roskilde.) Balise files: PU-M2b: 0CP80Y0J.02b (0) PU-M2a: 0CP80Y3N.02b (6)</p>	
17a	<p>Emergency braking on loop.</p> <p>Go to shunting Start 450 m before the signal - 50 m into the loop. Drive toward the signal with 40 km/h without pressing PASS STOP.</p>	<p>"40" (yellow) is indicated.</p> <p>The train is emergency broken due to flank protection.</p> <p>Indicator NØDBREMSE is displayed in field. Indicator RANGER is displayed in field. Button RANGER is displayed in field.</p>		<p>See "Line of tracks for FAT" Test no. 17a: (Roskilde.) Balise files: PU-K1: 0CP80XCS.01a (0)</p>	<p>Emergency break applied when passing PU-K1. Flank protection is not available in shunting mode.</p>
18	<p>Normal driving in shunting.</p> <p>Go to shunting.</p> <p>Drive past the 4 PU-signals.</p>	<p>"40" (yellow) is indicated.</p> <p>It is possible to drive past the 4 PU-signals without problems.</p>		<p>See "Line of tracks for FAT" Test no. 18: (Roskilde.) Balise files: PU-M2b: 0CP80Y0J.02b (6) PU-M2a: 0CP80Y3N.02b (2) PU-M2b: 0CP80Y0J.02b (5) PU-M2a: 0CP80Y3N.02b (8)</p>	
19	<p>Driving with fault (FF827). Drive normally past AM-1761. After passage of AM-1761 "Valg" is pressed, while the train drives.</p> <p>AM-1741 is passed. The balise to I-1727 is passed long before Z1 is expired.</p>	<p>Button "Valg" is shown What is the reaction?</p> <p>FF827 is indicated in field.</p>		<p>See "Line of tracks for FAT" Test no. 19: (From Sorø toward Ringsted) Balise files: AM-1761: 0FPA2AAW.URA (3) AM-1741: 0FPA28FH.URA (3) I-1727: 0FP7273A.01A (3)</p>	<p>Pressing "valg" gives no reaction.</p>

No.	Action	Expected result	Result	Cross-reference	Comments:
19a	Driving with fault. Service braking. Driving takes place with max speed past AM-1741 in stop in order to see, if the train is service or emergency broken.	Emergency braking is achieved.		See "Line of tracks for FAT" Test no. 19a: (From Sorø toward Ringsted) Balise files: AM-1761: 0FPA2AAW.URA (3) AM-1741: 0FPA28FH.URA (0)	
20	Driving on open track with LA40, where, before LA40 starts, a new LA40 is achieved that is not warned in due time. This gives rise to an emergency braking. Driving should take place according to the permitted speed.	When passing AM-1761: VX-indication. When passing AM-1741: VX-indication. Indication of LA40. The first LA40 starts 383 m after I-1727. The other LA40 starts 896 m before I-1727. Emergency braking is achieved after receiving of the other LA40.		See "Line of tracks for FAT" Test no. 20: (From Sorø toward Ringsted) Balise files: AM-1761: 0FPA2AAW.URA (3) LA40 (1): 01XG03W0.18A (0) AM-1741: 0FPA28FH.URA (3) LA40 (2): 00CG03W0.18A (0) I-1727: 0FP7273A.01A (3)	
20a	Driving on open track with LA40. The test corresponds to no. 20, but this time no new LA40 that has not been warned in time, is reached. Driving takes place according to permitted speed.	When passing AM-1761: VX-indication When passing AM-1741: VX-indication. Indication of LA40 that starts with 783 m after I-1727.		See "Line of tracks for FAT" Test no. 20a: (From Sorø toward Ringsted) Balise files: AM-1761: 0FPA2AAW.URA (3) LA40 (1): 01XG03W0.18A (0) AM-1741: 0FPA28FH.URA (3) I-1727: 0FP7273A.01A (3)	
21	Shunting out after starting up in Høje Tåstrup. The train is newly rigged up. PU-H4 is passed by help of PASS STOP. When PU-H4 has been passed, PASS STOP is pressed again, so that PU-G4 can be passed.	PU-H4 can be passed by the help of PASS STOP. PU-G4 can be passed by the help of PASS STOP. By passing U1184: Full ATC surveillance is achieved.		See "Line of tracks for FAT" Test no. 21: (Exit from Høje Tåstrup toward Glostrup.) Balise files: PU-H4: 0BQK0JVS.04A (0) BFM4193v: 0BQK0JV4.04A (0) PU-G4: 0BQK0JPS.04A (0) U-1184: 0BQK0HYQ.02A (7)	

No.	Action	Expected result	Result	Cross-reference	Comments:
22	<p>Driving with PASS STOP on open track.</p> <p>Stop is 50 m before AM-1761. PASS STOP is pressed and AM1761 is past, following which an AFBRYD is pressed.</p> <p>Stop is 700 m before I-1727 and PASS STOP is pressed and driving takes place past the I-signal.</p> <p>Between the I-signal and PU-E1 there is a short stop before driving on.</p> <p>"Dip" in the target distance before further driving after stopping.</p>	<p>When passing U-1777: "000" (red).</p> <p>AM-1761 can be passed by help of PASS STOP: Button AFBRYD is displayed in field.</p> <p>When passing AM-1741: "000" (red).</p> <p>After 400 m PASS STOP is cancelled so that I-1727 can be passed normally without being in PASS STOP.</p> <p>When passing I-1727: VX-indication.</p> <p>When passing PU-E1: VX-indication. The target distance decreases.</p>		<p>See "Line of tracks for FAT" Test no. 22: (Driving Sorø - Fjenneslev.)</p> <p>Balise files:</p> <p>U-1777: 0FPF2BWJ.02A (5)</p> <p>AM-1761: 0FPA2AAW.URA (0)</p> <p>AM-1741: 0FPA28FH.URA (5)</p> <p>I-1727: 0FP7273A.01A (3)</p> <p>PU-E1: 0FP725RU.01A (7)</p> <p>U-1707: 0PF7253R.01A (3)</p>	
23	<p>Driving on open track with SORF on loop.</p> <p>Stop on the loop 50 m before AM-2237. Driving takes place past AM-2237.</p> <p>Stop on the loop 50 m before AM-2223. Press PASS STOP and the signal is passed.</p>	<p>When passing AM-2255: "000" (red).</p> <p>The train is updated to SORF-indication on the loop. SORF open track with 60 km/h.</p> <p>Test that the permitted speed goes to zero toward AM-2223 that indicates stop.</p> <p>At the loop for AM-2223: Flashing "000".</p> <p>AM-2223 can be passed in PASS STOP.</p>		<p>See "Line of tracks for FAT" Test no. 23: (Driving Roskilde - Høje Tåstrup.)</p> <p>Balise files:</p> <p>AM-2255: 0BQP0RWW.68A (5)</p> <p>AM-2237: 0BQP0Q6Y.68A (1)</p> <p>AM-2223: 0BQP0NU7.68A (0)</p>	
24	<p>SORF-driving on station.</p> <p>Stop on the loop 50 m before I-2209. Driving takes place past I-2209. Stop is 50 m before PU-H4. Pass PU-H4.</p>	<p>When passing AM-2223: "000" (red).</p> <p>The train is updated to SORF-indication on the loop. SORF station with 40 km/h.</p> <p>As there was a stop before PU-H4, the train will be emergency broken, when it is attempted to drive past the PU-signal.</p>		<p>See "Line of tracks for FAT" Test no. 24: (Driving from Roskilde toward Høje Tåstrup.)</p> <p>Balise files:</p> <p>AM-2223: 0BQP0NU7.68A (5)</p> <p>BRA2220v: 0BQP0NGF.68A (0)</p> <p>I-2209: 0BQK0MFB.02A (1)</p> <p>PU-H4: 0BQK0JVS.04A (2)</p> <p>BFM4193v: 0BQK0JV4.04A (0)</p>	<p>The train is updated to SORF-indication on the loop, when the speed is less than 40 km/t.</p> <p>At the Signal PU-H4 SORF is continued.</p>

No.	Action	Expected result	Result	Cross-reference	Comments:
25	SORF-driving on station. Stop on the loop 50 m before I-2209. Driving takes place past I-2209. The driving corresponds to test no. 24 with the difference that there is no stop in front of PU-H4. Driving takes place past PU-H4 and following PU-G4. In this test AM-2223 also indicates SORF.	When passing AM-2223: SORF-indication open track with 60 km/h. SORF station with 40 km/h. As this test has not been stopped in front of PU-H4, the train can freely drive past first this and following past PU-G4. Due to a link error in the Z1 of PU-G4, we shall have FF827 on the U-1184.		See "Line of tracks for FAT" Test no. 25: (Driving from Roskilde -> Høje Tåstrup -> Glostrup.) Balise files: AM-2223: 0BQP0NU7.68A (1) BRA2220v: 0BQP0NGF.68A (0) I-2209: 0BQK0MFB.02A (1) PU-H4: 0BQK0JVS.04A (2) BFM4193v: 0BQK0JV4.04A (0) PU-G4: 0BQK0JPS.04A (5) U-1184: 0BQK0HYQ.02A (5)	.
26	Non-stop driving on station. Driving should be with a max speed.	When passing I-1727: VX-indication. When passing PU-E1: VX-indication. Observe that there will not be a "dive" in the target distance when passing PU-E1. When passing U-1707: VX-indication.		See "Line of tracks for FAT" Test no. 26: (Driving from Sorø into Fjenneslev.) Balise files: I-1727: 0FP7273A.01A (3) PU-E1: 0FP725RU.01A (7) U-1707: 0PF7253R.01A (3)	
29	Driving on a "ATC-train stop" open track. Normal driving on a fictive open track between Struer and Hjerm. There is a short stop 870 m after I-H, following which driving is continued past U-D.	When passing U-D: "- -" (yellow). When passing I-a: "- -" (yellow). When passing I-H: "- -" (yellow). "FH025" or "- -" (yellow) is indicated and the speed is limited.		See "Line of tracks for FAT" Test no. 29: (Driving on fictive open track Struer - Hjerm.) Balise files: U-D: Typ: STOP/120 (2) I-a: 9NJ863KB.MTA (0) I-H: 9MS35WYB.02A (2) U-D: Typ: STOP/120 (2)	"- -" (yellow) is indicated
30	Driving on a "ATC-train stop" open track. Driving on fictive open track between Struer and Hjerm. Driving takes place so that the I-signal is expected to be possible to pass with 40 km/h.	When passing U-D: "- -" (yellow). When passing I-a: "- -" (yellow). When passing I-H: "- -" (yellow). The train will be braked when passing I-H that indicates stop.		See "Line of tracks for FAT" Test no. 30: (Driving on fictive open track Struer - Hjerm.) Balise files: U-D: Typ: STOP/120 (2) I-a: 9NJ863KB.MTA (0) I-H: 9MS35WYB.02A (0)	

No.	Action	Expected result	Result	Cross-reference	Comments:
31	Driving from open track with Y-driving to open track with full ATC.	When passing Y-120: "YY" (yellow). Driving can take place from Y to full ATC, without it being necessary to take any action. When passing I-1727 full ATC-indication is achieved.		See "Line of tracks for FAT" Test no. 31: (Driving on fictive open track.) Balise files: Y-120: 003R003R.3RA (1) I-1727: 0FP7273A.01A (7)	
32	Driving on "ATC-train stop" open track into open track with full ATC.	When passing U-D: "- -" (yellow). When passing I-a: "- -" (yellow). Driving can take place from "ATC train stop" open track to open track with full ATC without it being necessary to take any action. When passing I-1727 full ATC indication is achieved.		See "Line of tracks for FAT" Test no. 32: (Driving on fictive open track.) Balise files: U-D: Typ: STOP/120 (2) I-a: 9NJ863KB.MTA (0) I-1727: 0FP7273A.01A (7)	
32a	Driving from open track with full ATC onto "ATC-train stop" open track.	When passing PH-H2: Full ATC-indication. Driving can take place from open track with full ATC to the ATC-train stop on open track, without it being necessary to take any action. When passing U-F "- -" (yellow) is achieved.		See "Line of tracks for FAT" Test no. 32a: (Driving from Vejle onto ATC-train stop on open track.) Balise files: PU-H2: 73H80S5M.02A (7) U-F: 73H80SG5.03A (5)	
33	Normal driving from ATC-open track onto Y-track.	When passing PH-H3a: Full ATC-indication. When passing BY3678h, acknowledgement is offered for YY. "YY" (yellow flashes) Button YDRE SIGNAL is displayed flashing in field Indicator YDRE SIGNAL is displayed in field. Y-driving can be acknowledged and driving continued. "YY" (yellow).		See "Line of tracks for FAT" Test no. 33: (Driving from Holbæk onto Y-open track) Balise files: PU-H3a: 1JU321V8.03b (7) U-2679: 1JU3225G.03b (5) BY3678h: 1JU32280.03b (1)	
33a	Driving from ATC-train stop open track onto Y-track. When driving toward I-A, braking takes place down to 60 km/h.	When passing U-D: "- -" (yellow). When passing I-a: "- -" (yellow). When passing I-A, acknowledgement is offered for YY. "YY" (gule). Y-driving can be acknowledged and driving continued. "YY" (yellow).		See "Line of tracks for FAT" Test no. 33a: (Driving on open track Hjerm - Struer.) Balise files: U-D: Typ: STOP/120 (2) I-a: 9NJ863KB.MTA (0) I-A: 9NJ864CB.03A (6)	FH 60 should be shortly indicated, because of the breaking curve from I-a.

No.	Action	Expected result	Result	Cross-reference	Comments:
33b	Driving from ATC-open track onto Y-track. In contrast to test no. 33, you do not meet BY3678h 100 m after U-2679.	When passing PH-H3a: Full ATC-indication. The train is braked. FF826. After "stopping" acknowledgement for Y is offered. "YY" (yellow flashing).		See "Line of tracks for FAT" Test no. 33b: (Driving from Holbæk onto Y-open track.) Balise files: PU-H3a: 1JU321V8.03b (7) U-2679: 1JU3225G.03b (5)	
33c	Driving from Y-track into a "ATC-train stop" open track.	When passing Y-120: "YY" (yellow). Driving can take place from the Y-open track to open track with "ATC-train stop", without it being necessary to take any action. When passing U-D "ATC-train stop" indication is achieved. "- -" (yellow).		See "Line of tracks for FAT" Test no. 33c: (Driving toward Struer.) Balise files: Y-120: 003R003R.3RA (1) U-D: Typ: STOP/120 (2)	
34a	Driving toward Y-track stopper. After passing BFF4110h, the train will be supervised to 15 km/h.	When passing Y-120: "YY" (yellow). When passing BFF4110h "- -" (yellow) is indicated. A braking is started.		See "Line of tracks for FAT" Test no. 34a: (Driving toward track stopper in Kalundborg.) Balise files: Y-120: 003R003R.3RA (1) BFF4110h: 1KR83BP1.04b (0)	
35a	Driving on Y-track. Stop and press RANGER, where after driving continues. Stop again, shunting is disconnected, enter train data and drive on.	When passing Y-120: "YY" (yellow). Indicator YDRE SIGNAL is displayed in field Driving takes place in shunting with indication of "40" (yellow). Driving can take place with a speed of 40 km/h. The loco driver is asked to enter train data. After entering train data, acknowledgement is offered for Y-driving. "YY" (yellow flashing).		See "Line of tracks for FAT" Test no. 35a: (Driving in Kalundborg.) Balise files: Y-120: 003R003R.3RA (1)	

No.	Action	Expected result	Result	Cross-reference	Comments:
37	Embracing. Driving takes place on the same open track as in test no. 1. Only U-1777 and AM-1761 are embraced and thus not read.	When passing PU-E3: "VX-indication". U-1777 is embraced and not treated. AM-1761 is embraced and not treated. AM-1741 is treated and gives "VX-indication".		See "Line of tracks for FAT" Test no. 37: (From Sorø toward Ringsted) Balise files: PU-E3: 0FPF2C8U.03A (5) OMKbeg70: 00000000.26b (1) U-1777: 0FPF2BWJ.02A (3) AM-1761: 0FPA2AAW.URA (3) OMKophæv: 00000000.00b (0) AM-1741: 0FPA28FH.URA (3)	
38	Embrace with shunting. The open track is similar to the open track in test no. 37. The driving is different as shunting takes place over an open track of 300 m between U-1777 and AM-1761.	When passing PU-E3: "VX-indication". U-1777 is embraced and not treated. After disconnected shunting acknowledgement Y-driving is offered. "YY" (yellow flashing) AM-1761 is embraced and not treated. AM-1741 is treated and gives "VX-indication".		See "Line of tracks for FAT" Test no. 38: (From Sorø toward Ringsted) Balisefiler: PU-E3: 0FPF2C8U.03A (5) OMKbeg70: 00000000.26b (1) U-1777: 0FPF2BWJ.02A (3) AM-1761: 0FPA2AAW.URA (3) OMKophæv: 00000000.00b (0) AM-1741: 0FPA28FH.URA (3)	
39	Normal driving. Pass the AM-1761 balise. Z1 = 1900 m (Driving forward should take place without reaching the braking curve.) Drive forward until the next expected balise position after 1900 m. Stop train.	When passing AM-1761: VX-indication. FF826 is shown in display field The button LØS BREMSE is shown. The brake is released when pressing the button LØS BREMSE.		See "Line of tracks for FAT" Test no. 8: (From Sorø toward Ringsted.) Balise files: AM-1761: 0FPA2AAW.URA (7)	

5 Generally remarks / summery of findings

This section summarizes the general remarks observed during the test session together with the severity classification for each observation.

ID	Description	Error caused by	Reference to Test case	Classification (blocking / not blocking)

6 Balise files - Line of tracks for FAT

Test no.	Signal	Station / line	File name
1, 2, 2a, 4, 37, 38	PU-E3	Sorø	0FPF2C8U.03A
1, 2, 2a, 4, 22, 37, 38	U-1777	Sorø	0FPF2BWJ.02A
1, 2, 2a, 4, 6, 7, 7a, 8, 8a, 8b, 9, 10, 12, 19, 19a, 20, 20a, 22, 37, 38	AM-1761	Fjenneslev - Sorø	0FPA2AAW.URA
1, 4, 6, 7, 7a, 8, 8a, 8b, 9, 10, 12, 16, 19, 19a, 20, 20a, 22, 37, 38	AM-1741	Fjenneslev - Sorø	0FPA28FH.URA
1, 2b, 4, 6, 7, 7a, 8, 8a, 8b, 9, 10, 12, 16, 19, 20, 20a, 22, 26, 31, 32	I-1727	Fjenneslev	0FP7273A.01A
22, 26	PU-E1	Fjenneslev	0FP725RU.01A
2b, 16	PU-E2	Fjenneslev	0FP72627.02A
2b, 16, 22, 26	U-1707	Fjenneslev	0FP7253R.01A
3	U-1624	Ejby	6TSY1VXS.01A
3	AM-1610	Årup - Ejby	6TSR1UK2.URA
3	FH1610	Årup - Ejby	6TSR1UJE.URA

Test no.	Signal	Station / line	File name
3	AM-1596	Årup - Ejby	6TSR1T79.URA
3	FH1596	Årup - Ejby	6TSR1T6N.URA
3	AM-1577	Årup - Ejby	6TSR1RBU.URA
3	FH1577	Årup - Ejby	6TSR1RB7.URA
3	AM-1557	Årup - Ejby	6TSR1PDE.URA
4	LA60	Standard	02B003W0.1VA
12	LA40	Standard	02B00034.18A
20, 20a	LA40	Standard	01XG03W0.18A
20	LA40	Standard	00CG03W0.18A
4	LA-ophæv	Standard	00000000.1VA
37, 38	Omk-beg70	Standard	00000000.26b
37, 38	OMKL. ophæv	Standard	00000000.00b
5	U-1125	Vejen	8W5B0C5H.01b
5	BFH1163h	Vejen - Holsted	8W5E0FXN.R9b
5	BFH1164h	Vejen - Holsted	8W5E0FYA.R9b
5	BFS1169	Vejen - Holsted	8W5E0GF5.R9b
5	AM-1192	Vejen - Holsted	8W5E0JT5.R9b
5	BFS1222	Vejen - Holsted	8W5E0NQ9.R9b
5	BFH1222	Vejen - Holsted	8W5E0NRU.R9b
5	BFH1223	Vejen - Holsted	8W5E0NSG.R9b
5	BFS1233	Vejen - Holsted	8W5E0PSN.R9b
5	BFH1233	Vejen - Holsted	8W5E0PU7.R9b
5	BFH1234	Vejen - Holsted	8W5E0PUV.R9b
5	I-1246	Holsted	8W5S0R29.01b
5	BFH1246	Holsted	8W5S0R2X.01b
15	BFM1257h	Holsted	8W5S0S45.01b
15	SU-M	Holsted	8W5S0SBY.01b
11	AM-1340	Roskilde - Viby Sjælland	0DPJ117A.URA
11	BFH1340	Roskilde - Viby Sjælland	0DPJ116P.URA
11	I-X / I-1329	Roskilde	0CP8105N.04A
11	BFH1329	Roskilde	0CP81050.04A
11, 13	SI-H / SI-1322	Roskilde	0CP80YH1.04A
11, 13	BFH4323v	Roskilde	0CP80YGC.04A
13	BO/BFM4316v	Roskilde	0CP80XTQ.04A
13	PU-K4	Roskilde	0CP80XDF.04A

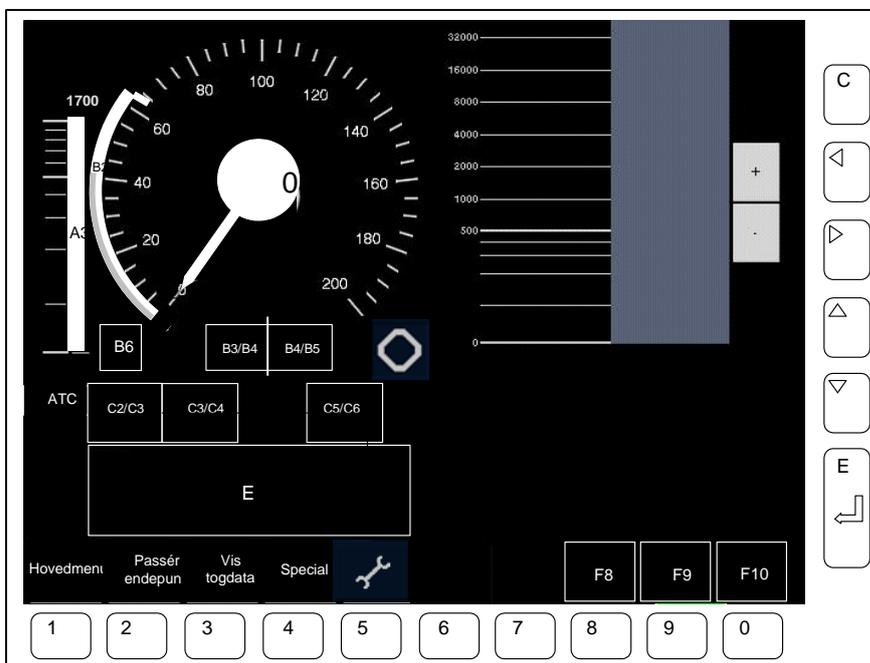
Test no.	Signal	Station / line	File name
13	BFH4311v	Roskilde	0CP80XCT.04A
17, 18	PU-M2b	Roskilde	0CP80Y0J.02b
17, 18	PU-M2a	Roskilde	0CP80Y3N.02b
17a	PU-K1	Roskilde	0CP80XCS.01A
14, 14a	PU-C1	Hvalsø	1JTH1FYW.01b
14, 14a	U-B / U-2497	Hvalsø	1JTH1GCJ.01b
14, 14a	BO2497	Hvalsø - Tølløse	1JTJ1GGJ.MTb
14, 14a	BFF2513h	Hvalsø - Tølløse	1JTJ1J5D.MTb
14, 14a	BFH2514h	Hvalsø - Tølløse	1JTJ1J62.MTb
14, 14a	BFS2524h	Hvalsø - Tølløse	1JTJ1K7U.MTb
14, 14a	BFH2525h	Hvalsø - Tølløse	1JTJ1K8G.MTb
21, 25	PU-H4	Høje Tåstrup	0BQK0JVS.04A
21, 24, 25	BFM4193v	Høje Tåstrup	0BQK0JV4.04A
21, 25	PU-G4	Høje Tåstrup	0BQK0JPS.04A
21, 25	U-1184	Høje Tåstrup	0BQK0HYK.02A
24, 25	I-N2 / I-2209	Høje Tåstrup	0BQK0MFB.02A
23	AM-2255	Høje Tåstrup - Roskilde	0BQP0RWW.68A
23	AM-2237	Høje Tåstrup - Roskilde	0BQP0Q6Y.68A
23, 24, 25	AM-2223	Høje Tåstrup - Roskilde	0BQP0NU7.68A
24, 25	BRA2220v	Høje Tåstrup - Roskilde	0BQP0NGF.68A
29, 30, 32, 33a, 33c	U-D STOP/120	Struer (ATC- togstop)	STOP/120
29, 30, 32, 33a	I-a	Struer (ATC- togstop)	9NJ863KB.MTA
33a	I-A	Struer (ATC- togstop)	9NJ864CB.03A
29, 30	I-H	Hjerm (ATC- togstop)	9MS35WYB.02A
31, 33c, 34a, 35a	Y-120	Standard	003R003R.3RA
32a	PU-H2	Vejle	73H80S5M.02A
32a	U-F	Vejle	73H80SG5.03A
33, 33b	PU-H3a	Holbæk	1JU321V8.03b

Test no.	Signal	Station / line	File name
33, 33b	U-N U2679	Holbæk	1JU3225G.03b
33	BY3678h	Holbæk	1JU32280.03b
34a	BFF4110h	Kalundborg	1KR83BP1.04b

7 Check of display layout, indicators and buttons

The Baseline 3DMI from Alstom is using the DMI lay out according to ERA Customized DMI. During all tests, the tables below are checked. The button text for 1, 2, 4, has been changed from the text shown in the below figure to the text:

- 1 = Hoved menu
- 2 = Passér endepunkt
- 4 = Special



DMI indicators			ATC display		DMI buttons		
C2/C3	C3/C4	C5/C6	B3/B4	B4/B5	F8	F9	F10
NØD BREMSE	PASS. STOP	ATC INDE	--	000	Valg	YDRE SIGNAL	PASS. STOP
DRIFTS BREMSE		YDRE SIGNAL	Yellow display	Red display	Retur	RANGER	LØS BREMSE
		RANGER	At flashing they change between display content and background colour		Afbryd	LØS ATC	LØS BREMSE
		LØS ATC			AFBRYD RANGER		

At flashing the whole indicator for the button flashes between content and background colour

NB! The F8 can be moved to F6, F9 to F7 and F10 to F8 according to the new specification which alludes that.

7.1 Indicators

Indicators	ERA Position	Result	Comments
DRIFTS BREMSE	C2/C3		
NØD BREMSE	C2/C3		
PASS. STOP	C3/C4		
ATC INDE	C5/C6		
YDRE SIGNAL	C5/C6		
RANGER	C5/C6		
LØS ATC	C5/C6		
Yellow display	B3/B4		
Red display	B4/B5		
Yellow and red display	B3/B4 and B4/B5		

7.2 Buttons

Indicators	ERA Position	Result	Comments
Valg	F8		
Afbryd	F8		
AFBRYD RANGER	F8		
Retur	F8		
RANGER	F9		
YDRE SIGNAL	F9		
PASS. STOP	F10		
LØS BREMSE (service brake)	F10		
LØS BREMSE (Emergency brake)	F10		
LØS ATC	F9		

7.3 Other fields

Other fields	ERA Position	Result	Comments
Error messages and other system messages.	E5 – E8		
Surveillance speed	B2		
Release speed	B6 + B2		
Target distance	A3		
DMI clock	G13		

