Train protection
ETCS system ETCS 2

ETCS System Compatibility
Test Description

Document Management

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History

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1. Introduction

1.1 Purpose of the document

The purpose of this document is to define the test scenarios to perform in order to prove the ETCS System Compatibility (ESC) between the trackside ETCS Level 2 and the On-board.
The tests scenarios describes more in detail each "high level" scenarios defined in the ESC test plan [1].
The success of these test scenarios shall prove the technical compatibility between ETCS On-board and the Trackside part ETCS of the CCS subsystems within the ETCS2 area on Infrabel conventional network.

The technical specification for interoperability used inside an ETCS2 area on Infrabel network is the set of specifications 2, B3 MR1 ([2] and [3]).

These test scenarios for ETCS system compatibility do not cover all design rules used in an ETCS2 area. If required, Infrabel can provide additional operational test scenarios performed during the verification that the trackside subsystem complies with the requirement of the TSI.

In case of doubt concerning the ESC of the board with the trackside, the railway undertaking shall take the required action with his supplier and inform Infrabel.

1.2 Basic documents

Ref.	Title	Owner
[1]	PSI (TC,ETCSsys,z) ESC TST PLN	Infrabel

1.3 Reference documents

Ref.	Title	Owner
[2]	Commission Decision (EU) 2015/14 of 5 January 2015	UE
[3]	Commission Regulation (EU) 2016/919 of 27 May 2016	UE
[4]	PSI(TP,ETCSsys.L1LS.z) ESC TST DSC	Infrabel

1.4 Annexes

Ref.	Title	Owner
[5]	Document	Owner

1.5 Scope

This document is applicable for all trains would run under the protection of ETCS level 2 in an ETCS2 area on the Infrabel conventional network.

1.6 Definitions, symbols and abbreviations

2Y	Aspect wo yellow displayed by the signal
CCS	Control Command System
CES	Conditional Emergency Stop
DMI	Driver Machine Interface
ESC	ETCS System Compatibility
ETCS	European Train Control System
LS	Limited Supervision
NR	Not Relevant

OBU	On Board Unit
RNP	Aspect Red not permissive displayed by the signal
SBG	Signal Balise Group
SFE	Safe Front End
SoM	Start of Mission
TSI	Technical Specification for Interoperability
UES	Unconditional Emergency Stop

1.7 Known imperfections

No test cases are defined for transitions from and to TVM430 in this version of the document.

2. On-board Equipment

Out of scope of railway manager Infrabel.

3. Functionalities

The tested functionalities are described in the table here under:

Test scenario (ref ESC TST PLN [1])	Tested functionality
ESC_ALL_1	Ergonomics in nominal situation
ESC_ALL_2	Braking curves
ESC_L2FS_1	Joining and Splitting
ESC_L2FS_2	CES accepted
ESC_L2FS_3	UES
ESC_L2FS_4	Reset of confidence interval
ESC_L2FS_5	T_NVCONTACT
ESC_L2FS_6	Replacement at the head
ESC_L2FS_7	Change of front
ESC_L2FS_8	Multiple message 18
ESC_L2FS_9	National values with unknown position in position report
ESC_L2FS_10	SoM with MaxSFE downstream of a signal
ESC_L2FS_11	Restart in STM after loss of ETCS 2 FS
ESC_L2FS_12	RBC-RBC Handover with a single modem
ESC_L2FS_13	Train categories
ESC_L2FS_14	OS extension
ESC_TR_6	Transition ETCS2 to TVM430 **(not covered, see §1.7)**
ESC_TR_8	Transition TVM430 to ETCS2 **(not covered, see §1.7)**
ESC_TR_9	Transition ETCS1 FS to ETCS2 FS
ESC_TR_10	Transition ETCS2 FS to ETCS1 FS
ESC_TR_13	Transition ETCS2 to STM
ESC_TR_16	Transition STM to ETCS2

The document will only describe the sequences to perform the scenarios but not all the actions to prepare the execution of the test scenarios.

No specific test scenarios are described for tests ESC_ALL_1 and ESC_ALL_2. During all train transfer between the scenarios executed during the test campaign, testers must ensure there is no ergonomic issues or unexpected braking interventions.

Transitions to and from ETCS1 Limited supervision (ESC_TR_2 and ESC_TR_4) are covered in the ESC test DSC for ETCS1 LS program (cf. [4]).

4. Test scenarios

4.1 Tests ESC_L2FS_1 part 1

4.1.1 Description

ID	Date		Location / Line
ESC_L2FS_1 part1	<dd/mm/yyyy>		<Line>
Description	Functionalities tested : • Tests ESC_L2FS_1 Joining		
Signal passed			
Name		Trackside datafile in service	
Signal S1: <signal name> is closed			
Signal S2: <signal name> is closed			
Test Scenarios			
Starting condition	Track 1: track <Track number>		
	Train A • Train A is in Level 2 mode SR • Train A is in rear of signal S1.		
	Train B • Train B is in mode SB. • Train B is on track 1		
	Joined train: Train A and train B joined.		
	Be sure all authorisations are filled in before performing the test scenarios		
Sequences of the test scenario			
Step	Step description	Description of what to be tested	Statement	Comment
1	Signaller traces a shunting route from signal S1 to Track 1.	Train A receives an mode profile to SH.	Pass / Fail	
2	Train A enters Track 1. Desk of Train A is closed and both trains are coupled.	OBU of train B is in SR mode. OBU of train A is in SL mode.	Pass / Fail	

	Desk of Train B is opened and driver performs a SoM.			
3	Signaller opens signal 2.	IF train position is known on-board, "Joined train" receives a MA with OS mode profile up to Signal S2 and switches to OS mode. Otherwise the train moves in SR mode and an MA with OS mode is received after the train reports a known position to the RBC:	Pass / Fail	
4	"Joined train" passes signal S2.	"Joined train" switches to FS mode.	Pass / Fail	
Test scenario finished				

4.1.2 Scenario diagram

Final State	Train in level 2 FS beyond signal S2
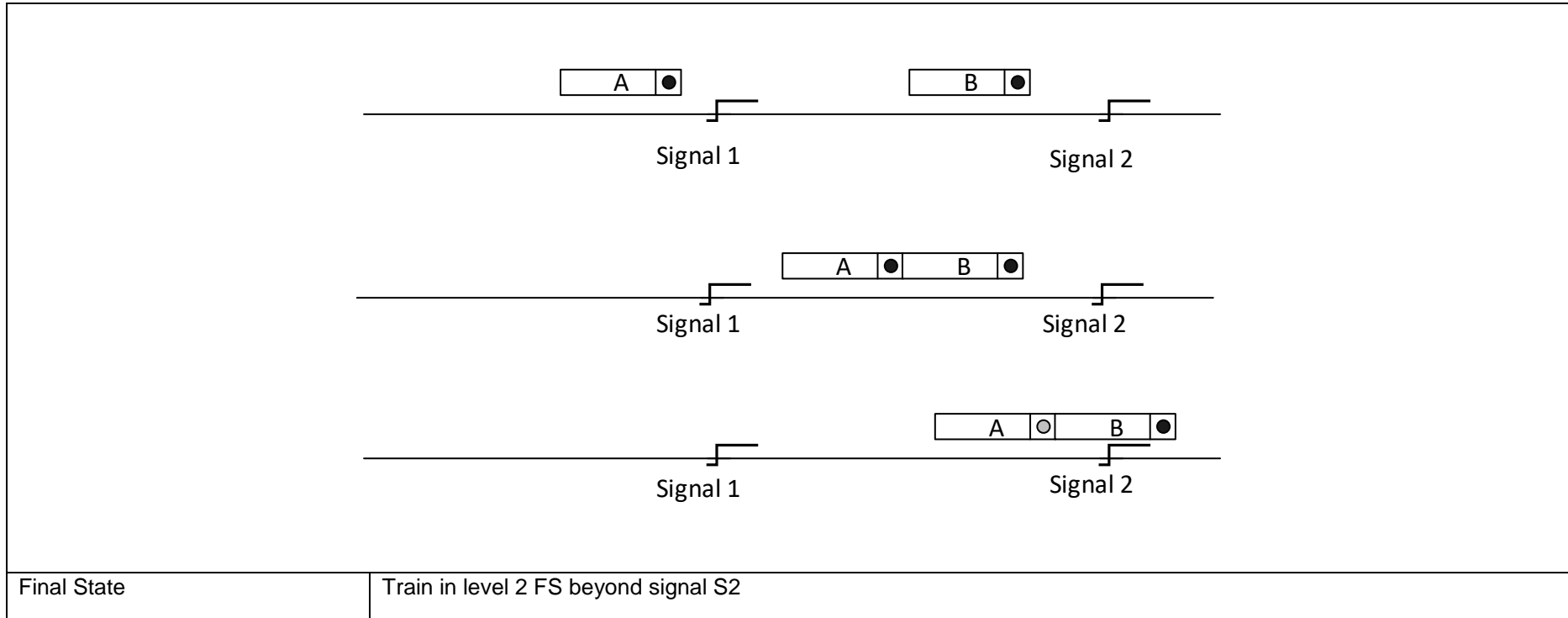
4.2 Tests ESC_L2FS_1 part 2

4.2.1 Description

ID	Date		Location / Line
ESC_L2FS_1 part 2	<dd/mm/yyyy>		<Line>
Description	Functionalities tested : • Tests ESC_L2FS_1 Splitting		
Signal passed			
Name		Trackside datafile in service	
Signal S1: <signal name> is closed			
Signal S2: <signal name> is closed			
Test Scenarios			
Starting condition	Track 1: <Track number> is a trusted area		
	Train "to be split" : • is composed of Train B and Train A. • is at standstill on Track 1 upwards Signal S1.		
	OBU of Train B is in SB mode.		
	OBU of Train A is in SL mode.		
	Be sure all authorisations are filled in before performing the test scenarios		
Sequences of the test scenario			

Step	Step description	Description of what to be tested	Statement	Comment
1	Driver of the "train to be split" performs a start of mission.	"Train to be split" is in mode SR.	Pass / Fail	
2	Signaller sets a route to signal S2.	"Train to be split" receives a MA with OS mode profile until Signal S1. "Train to be split" switches to OS mode	Pass / Fail	
3	Driver starts the train and pass signal S1.	"Train to be split" switches to FS mode.	Pass / Fail	
4	Driver stops the train in rear of Signal S2, close to the signal. Train B and Train A are uncoupled.	Train A changes from SL mode to SB mode.	Pass / Fail	

5	Driver of the Train B closes cab, modifies the train data and performs a SoM. Driver of the Train A performs a start of mission.	Train B is in SR mode. Train A connects to RBC and switches to SR mode.	Pass / Fail	
6	The signaller sets a route from signal S2 to Signal S3 and opens S3..	If position is known on-board, train B receives a new MA with an OS mode profile up to signal S2. Otherwise the train moves in SR mode and an MA with OS mode is received after the train reports a known position to the RBC:	Pass / Fail	
7	Driver of the Train B starts the train and passes Signal S2 and S3.	Train is in FS mode less than 30m after the signal.	Pass / Fail	
8	The signaller sets a route from signal S2 to Signal S3.	If position is known on-board, and train is less than 150m from the signal train A receives a MA with OS mode profile until signal S2. Train A switches to OS mode. Otherwise the train moves in SR mode and an MA with OS mode is received after the train reports to the RBC a position at less than 150m in rear of the signal:	Pass / Fail	
9	Driver of the Train A starts the trains and pass Signal S2.	Train A switches to FS.	Pass / Fail	
Test scenario finished				

4.2.2 Scenario diagram

Final State	Train A and train B in L2 FS.
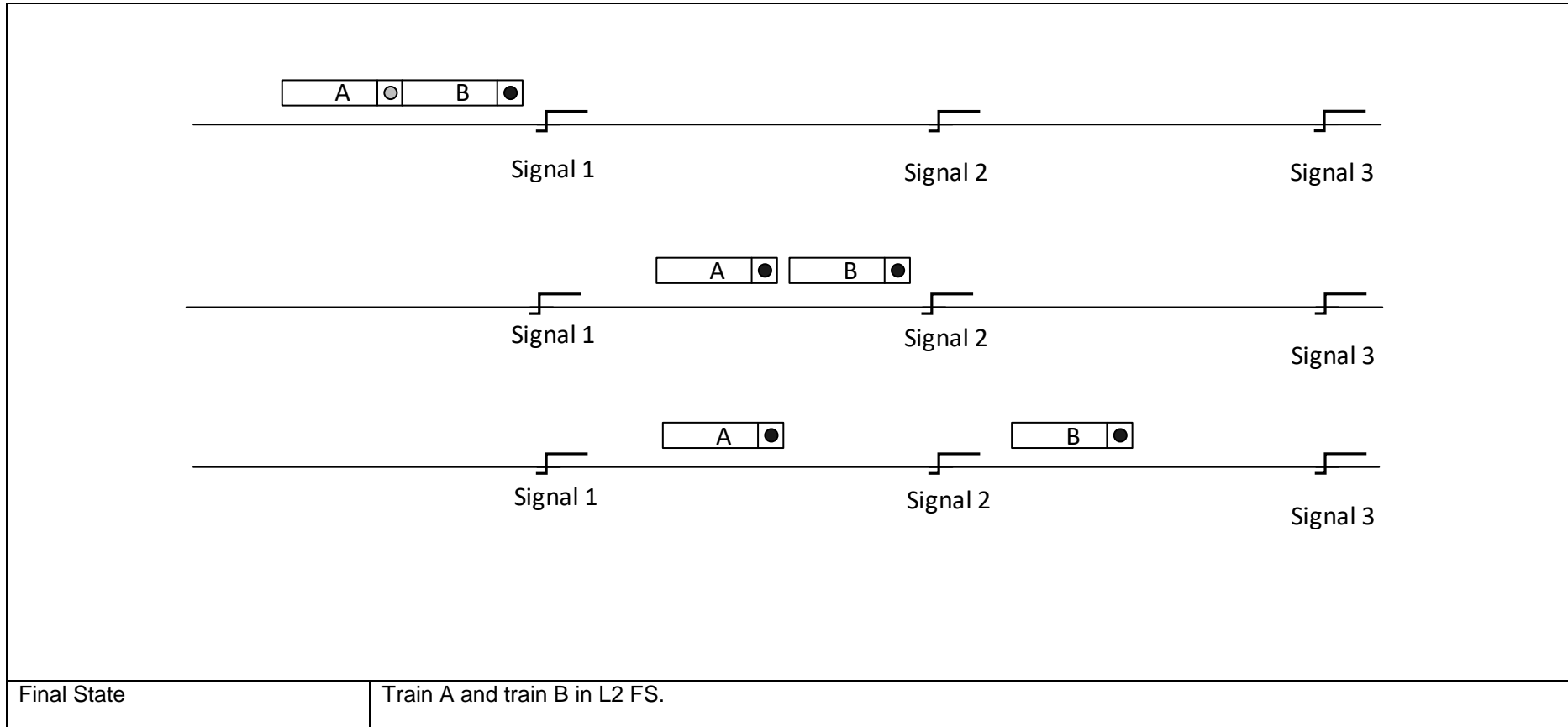
4.3 Tests ESC_L2FS_2

4.3.1 Description

ID	Date		Location / Line
ESC_L2FS_2	<dd/mm/yyyy>		<Line>
Description	Functionalities tested : - ESC_L2FS_2 : CES		
Signal passed			
Name		Trackside datafile in service	
S1 : <Signal name> is open			
S2 : <Signal name> is an open non controlled stop signal			
Test Scenarios			
Starting condition	Train in level 2 FS in rear of signal S1.		
	Be sure all authorisations are filled in before performing the test scenarios		
Sequences of the test scenario			
Step	Step description	Description of what to be tested	Statement	Comment
1	When train passes signal S1, perform CLOSE on signal S2. RBC sends CES to the train (Message 15)	CES is accepted by the train (Release speed = 0km/h and shortened MA).	Pass / Fail	
2	RBC revokes the CES (message 18). Train reports its position and RBC sends a new MA with EoA at signal S2.	Release speed = 30km/h	Pass / Fail	
3	Stop the train beyond signal S2	Train receives an OS MA.	Pass / Fail	
4	Re-open signal S2	Update of the MA with an EoA beyond signal S2	Pass / Fail	
Test scenario finished				

4.3.2 Scenario diagram
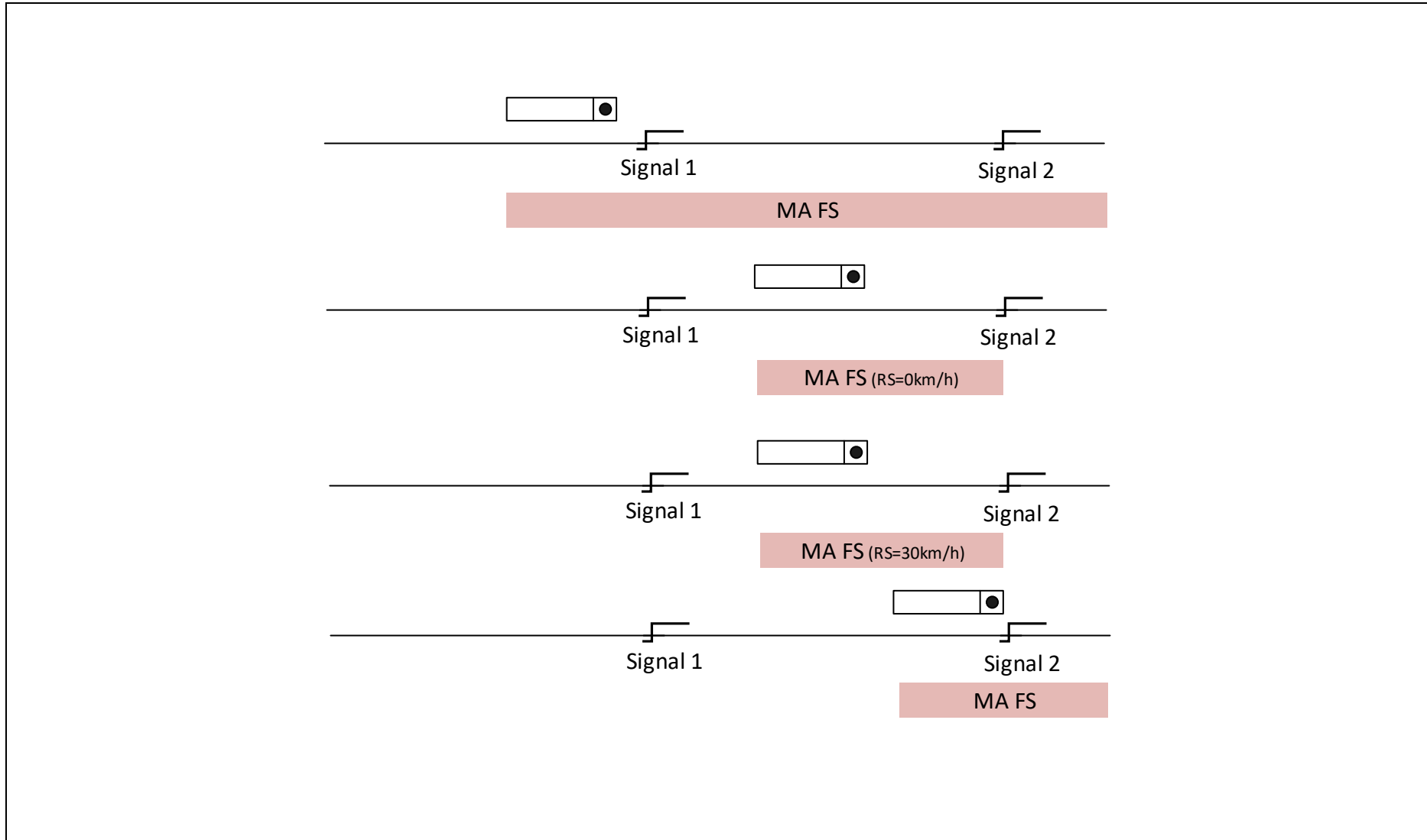
Final State	Train in level 2 FS in rear of signal 2.

4.4 Tests ESC_L2FS_3 and ESC_L2FS_8

4.4.1 Description

ID	Date		Location / Line
ESC_L2FS_3&8	<dd/mm/yyyy>		<Line>
Description	Functionalities tested : • ESC_L2FS_3 : UES • ESC_L2FS_8 : Multiple message 18		
Signal passed			
Name		Trackside datafile in service	
S1 : <Signal name> is an open non-controlled main stop signal on track 1.			
Test Scenarios			
Starting condition	Train is : • in level 2 FS mode • at standstill in rear of signal S1. **Be sure all authorisations are filled in before performing the test scenarios.** **Train should not occupy ZAX for Level Crossings**		
Sequences of the test scenario			

Step	Step description	Description of what to be tested	Statement	Comment
1	Perform CSTR on track 1, RBC sends UES (Message 16)	Train goes to TRIP.	Pass / Fail	
2	Driver acknowledges the trip	Train goes to Post Trip mode	Pass / Fail	
3	RBC sends revocation of emergency stop for every possible NID_EM (Message 18). Take away CSTR on track 1 and driver select "Start".	rain receives an MA with OS mode profile up to signal S1. Train switches to OS mode.	Pass / Fail	

4	Pass the signal	Train switches to FS.	Pass / Fail	
Test scenario finished				

4.4.2   Scenario diagram

None	
Final State	Train is in level 2 FS in rear of signal S1.

4.5 Tests ESC_L2FS_4 and ESC_L2FS_7

4.5.1 Description

ID	Date		Location / Line
ESC_L2FS_4&7	<dd/mm/yyyy>		<Line>
Description	Functionalities tested : • ESC_L2FS_4 : Reset of odometry error • ECS_L2FS_7 : change of front		
Signal passed			
Name		Trackside datafile in service	
S1 : <Signal name> is open			
S2 : <Signal name> is closed (S2 is chosen to ensure the train can pass completely BG1 without reading another BG)			
Test Scenarios			
Starting condition	Train is in rear of S1 in level 2 mode FS		
	Be sure all authorisations are filled in before performing the test scenarios		
Sequences of the test scenario			
Step	Step description	Description of what to be tested	Statement	Comment
1	Train passes S1 and stops after passing completely BG1.	BG1 is the LRBG.	Pass / Fail	
2	Driver changes CAB and performs a SoM.	Train receives MA with OS mode up to signal S2.	Pass / Fail	
3	Signal S2 opens and train passes BG1	The odometry error is reset to <5 meters if BG1 is a switchable BG or 8 meters if BG1 is a fixed BG)>.	Pass / Fail	
4	Train passes signal S2	Train switches to FS mode.	Pass / Fail	
Test scenario finished			

4.5.2   Scenario diagram

Final State	Train is in level 2 FS mode beyond signal S2.
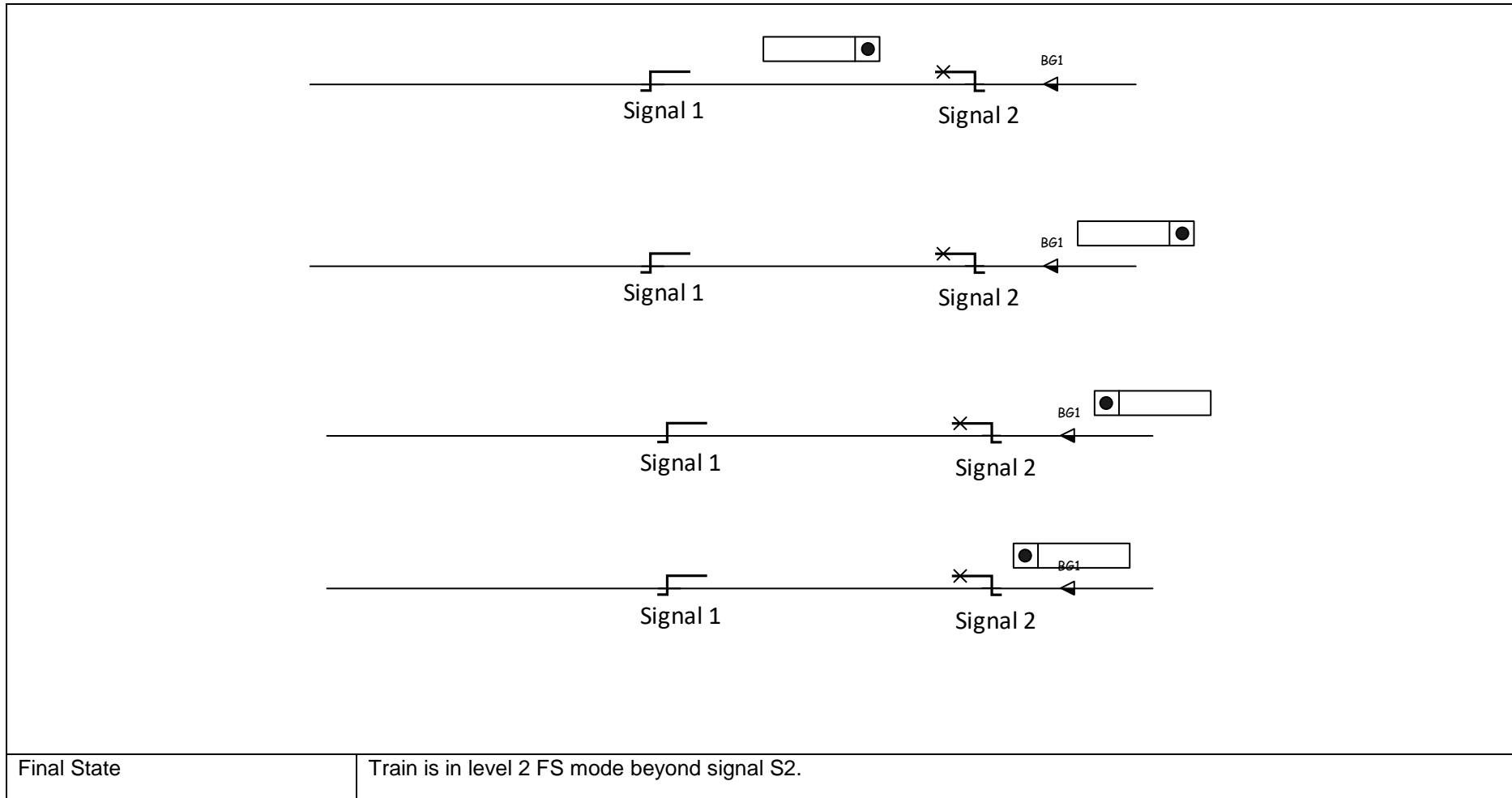
4.6 Tests ESC_L2FS_5

4.6.1 Description

ID	Date	Location / Line
ESC_L2FS_5	<dd/mm/yyyy>	<Line>
Description	Functionalities tested : - ESC_L2FS_5 : T_NVCONTACT	

Signal passed		
Name	Trackside datafile in service	
None		

Test Scenarios	
Starting condition	Train is at standstill in Level 2 mode FS.
	Be sure all authorisations are filled in before performing the test scenarios

Sequences of the test scenario				
Step	Step description	Description of what to be tested	Statement	Comment
1	Disconnect the OBU from the antenna to cause a loss of connection.	**After 40 seconds, train does a Service Brake reaction.** MA is shortened to the position of the train.	Pass / Fail	
2	Reconnect the antenna to the OBU.	Train remains in FS mode and MA is extended.	Pass / Fail	
Test scenario finished				

4.6.2 Scenario diagram

None	
Final State	Train is in level 2 FS.
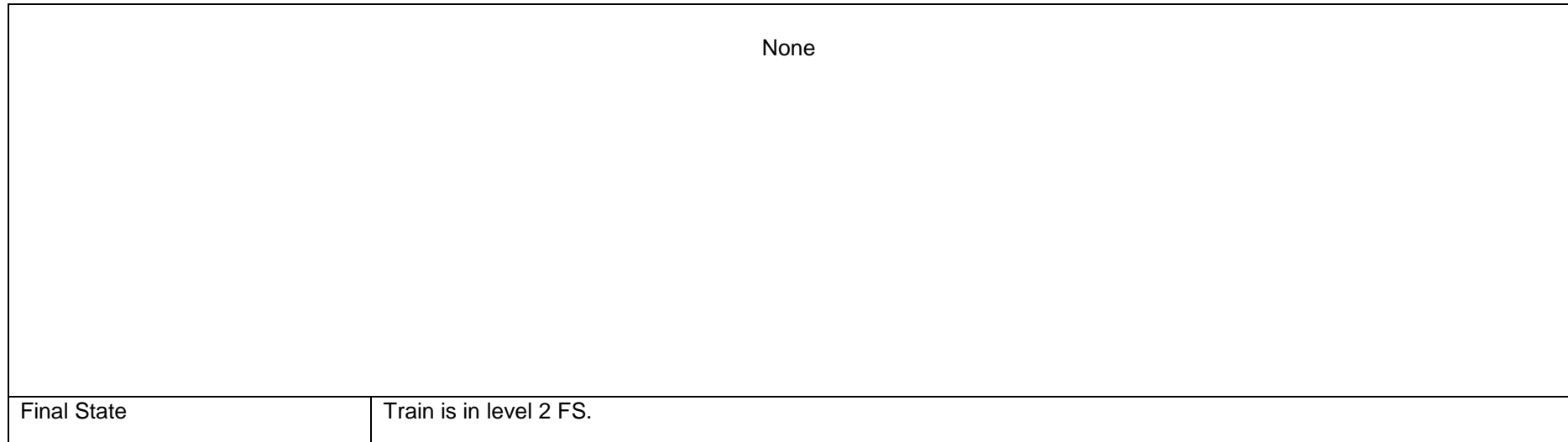
4.7 Tests ESC_L2FS_6

4.7.1 Description

ID	Date	Location / Line
ESC_L2FS_6	<dd/mm/yyyy>	<Line>
Description	Functionalities tested : - ESC_L2FS_6 : Replacement at the head	

Signal passed	
Name	Trackside datafile in service
S1 : <Signal name> is open	
S2 : <Signal name> is closed	
S3 : <Signal name> is closed	
S4 : <Signal name> is closed	
S5 : <Signal name> is closed	

Test Scenarios	
Starting condition	Train is composed of a locomotive and one or more carriages.
	Train is in level 2 mode FS in rear of signal S1
	Be sure all authorisations are filled in before performing the test scenarios

Sequences of the test scenario

Step	Step description	Description of what to be tested	Statement	Comment
1	Train passes signal S1 and stops beyond signal S3.	Train remains in FS mode.	Pass / Fail	
2	Train is split and locomotive is moved back in rear of Signal S1 by another track.	Train is in SB in rear of signal S1.	Pass / Fail	
3	Driver selects shunting	Train is in shunting mode.	Pass / Fail	
4	Signal S1 opens, train passes the signal and the locomotive is coupled with the carriages.	Train receives an MA with OS mode profile up to signal S2.	Pass / Fail	

PSI (TC,ETCSsys.L2,z) ESC TST DSC 1.1 E.docx

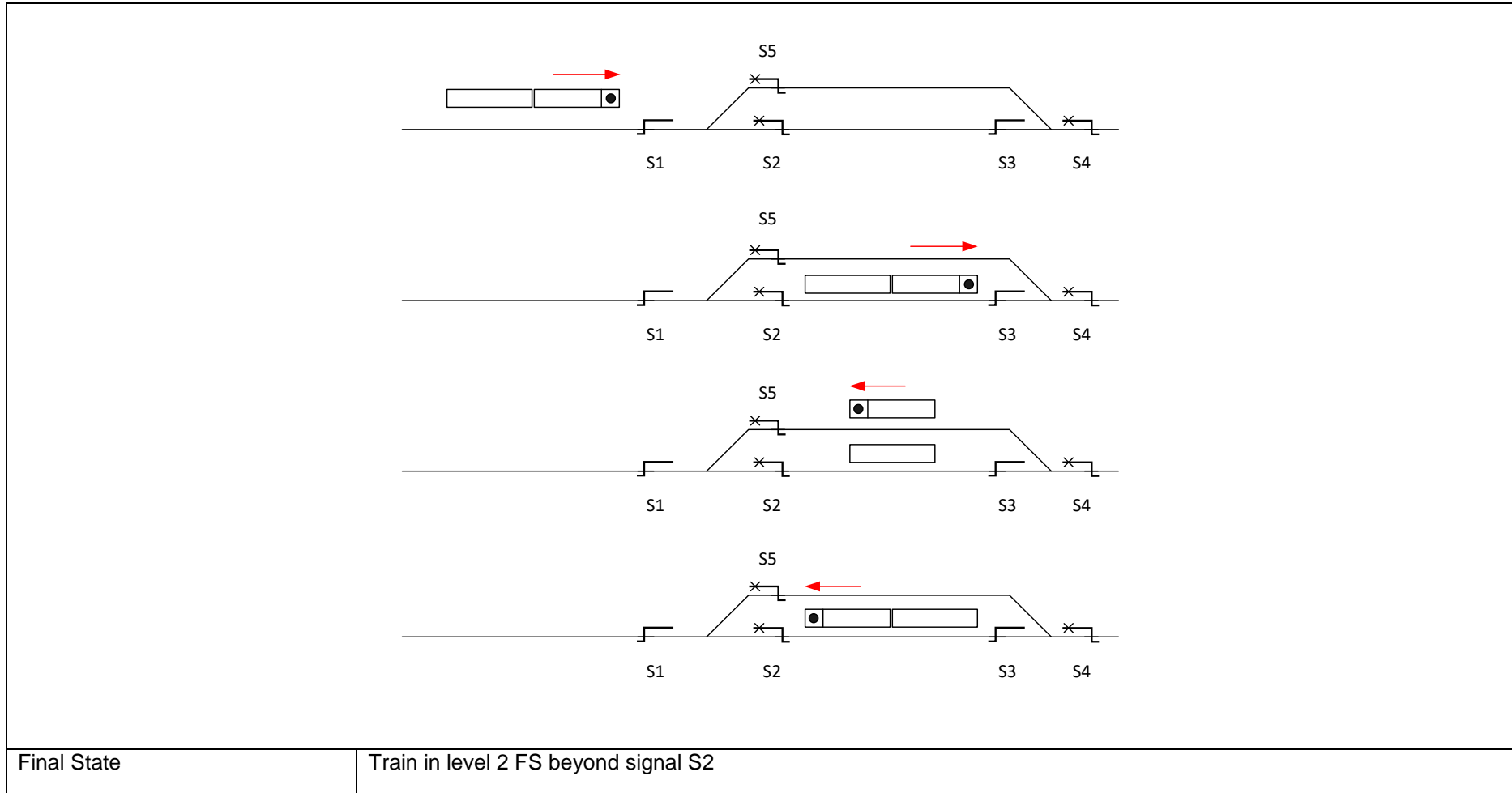|	Train performs a Start of Mission.			
5	Signal S2 opens and train passes the signal.	Train switches to FS mode.	Pass / Fail	
Test scenario finished				

4.7.2   Scenario diagram

| Final State | Train in level 2 FS beyond signal S2 |

4.8 Tests ESC_L2FS_9

4.8.1 Description

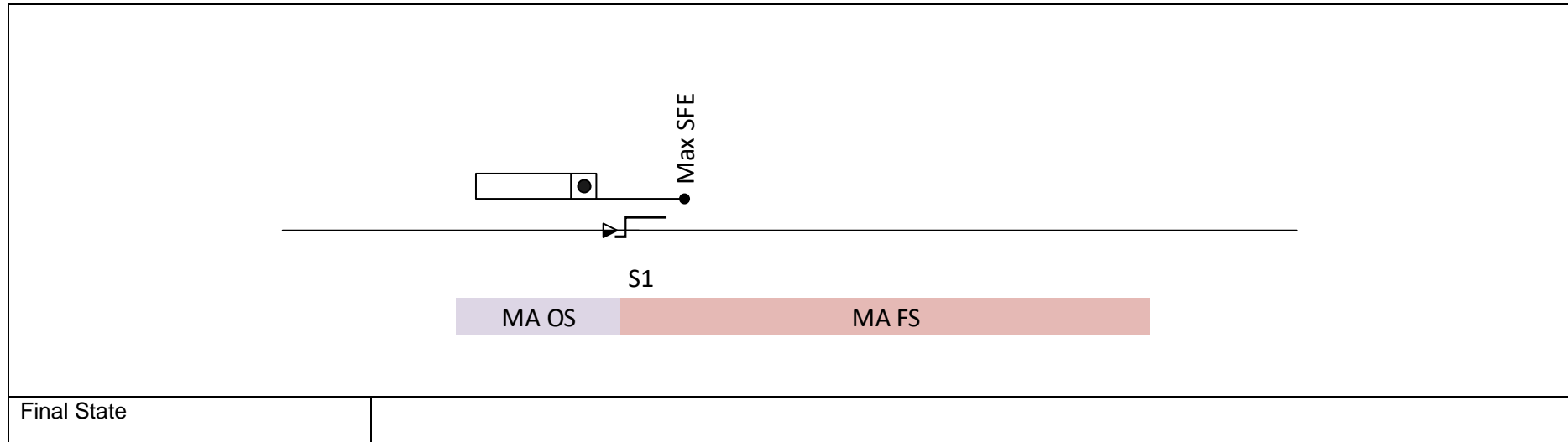| ID	Date		Location / Line
ESC_L2FS_9	<dd/mm/yyyy>		<Line>
Description	Functionalities tested : - ESC_L2FS_9 National values with unknown position in position report		
Signal passed			
Name		Trackside datafile in service	
S1 : <Signal name of a signal in a trusted area > is closed.			
Test Scenarios			
Starting condition	Train is in SB mode without a valid position on-board.		
	Train is in rear of signal S1		
	Be sure all authorisations are filled in before performing the test scenarios		
Sequences of the test scenario			
Step	Step description	Description of what to be tested	Statement	Comment
1	Drivers performs a Start of Mission in Level2.	Train receives national values with D_NVVALID = 0.	Pass / Fail	
2		The national values are correctly stored on-board.	Pass / Fail	
3		Train switches to level 2 mode SR.	Pass / Fail	
Test scenario finished				

4.8.2 Scenario diagram

	None
Final State	Train in level 2 mode SR in rear of signal S1.

4.9 Tests ESC_L2FS_10

4.9.1 Description

ID	Date		Location / Line
ESC_L2FS_10	<dd/mm/yyyy>		<Line>
Description	Functionalities tested : - ESC_L2FS_10 SoM with MaxSFE downstream of a signal		
Signal passed			
Name		Trackside datafile in service	
S1 : <Signal name> is closed			
Test Scenarios			
Starting condition	Train is in SB mode less than 150m in rear of signal S1 and its SBG with a known position		
	The odometry error is large enough to have a max safe front end beyond the signal S1		
	Train is on a portion of track defined as a trusted area.		
	Be sure all authorisations are filled in before performing the test scenarios		
Sequences of the test scenario			

Step	Step description	Description of what to be tested	Statement	Comment
1	Drivers performs a Start of Mission	Train Is in SR mode.	Pass / Fail	
2	Open signal S1.	Train receives an MA with OS mode profile up to the signal.	Pass / Fail	
3	Train passes signal S1	Train switches to FS mode about 30m beyond the signal.	Pass / Fail	
Test scenario finished				

4.9.2   Scenario diagram

Final State	

4.10 Tests ESC_L2FS_11

4.10.1 Description

ID	Date		Location / Line
ESC_L2FS_11	<dd/mm/yyyy>		<Line>
Description	Functionalities tested : - ESC_L2FS_11 Restart in STM after loss of ETCS 2 FS		
Signal passed			
Name		Trackside datafile in service	
S1 : <Signal name> is open with aspect Yellow.			
Test Scenarios			
Starting condition	Train is at standstill in level 2 FS mode in rear of signal S1.		
	Be sure all authorisations are filled in before performing the test scenarios		
Sequences of the test scenario			

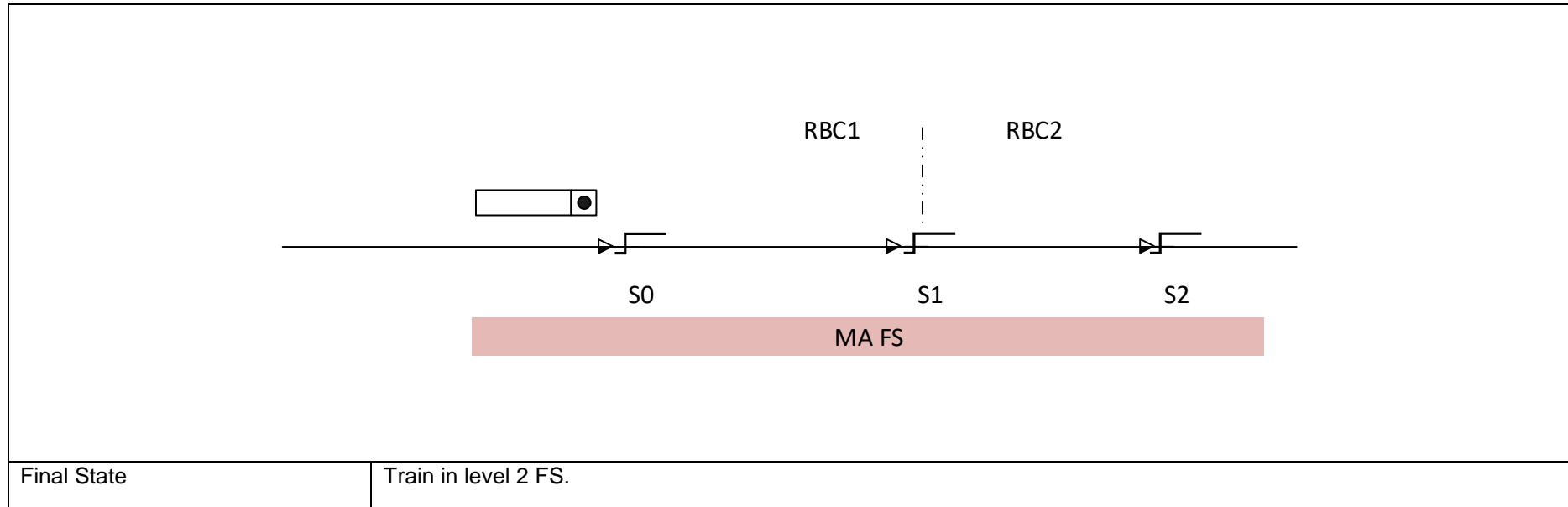| Step	Step description	Description of what to be tested	Statement	Comment
1	Disconnect the OBU from the antenna to cause a loss of connection.	After 40 seconds, train does a Service Brake reaction. MA is shortened to the position of the train.	Pass / Fail	
2	Driver performs a Start of Mission in STM mode and passes signal S1 according to STM TBL1+ procedures.	STM TBL1+ system requests acknowledgement and yellow lamp is switched on.	Pass / Fail	
Test scenario finished				

4.10.2 Scenario diagram

Final State	Train is in level STM.
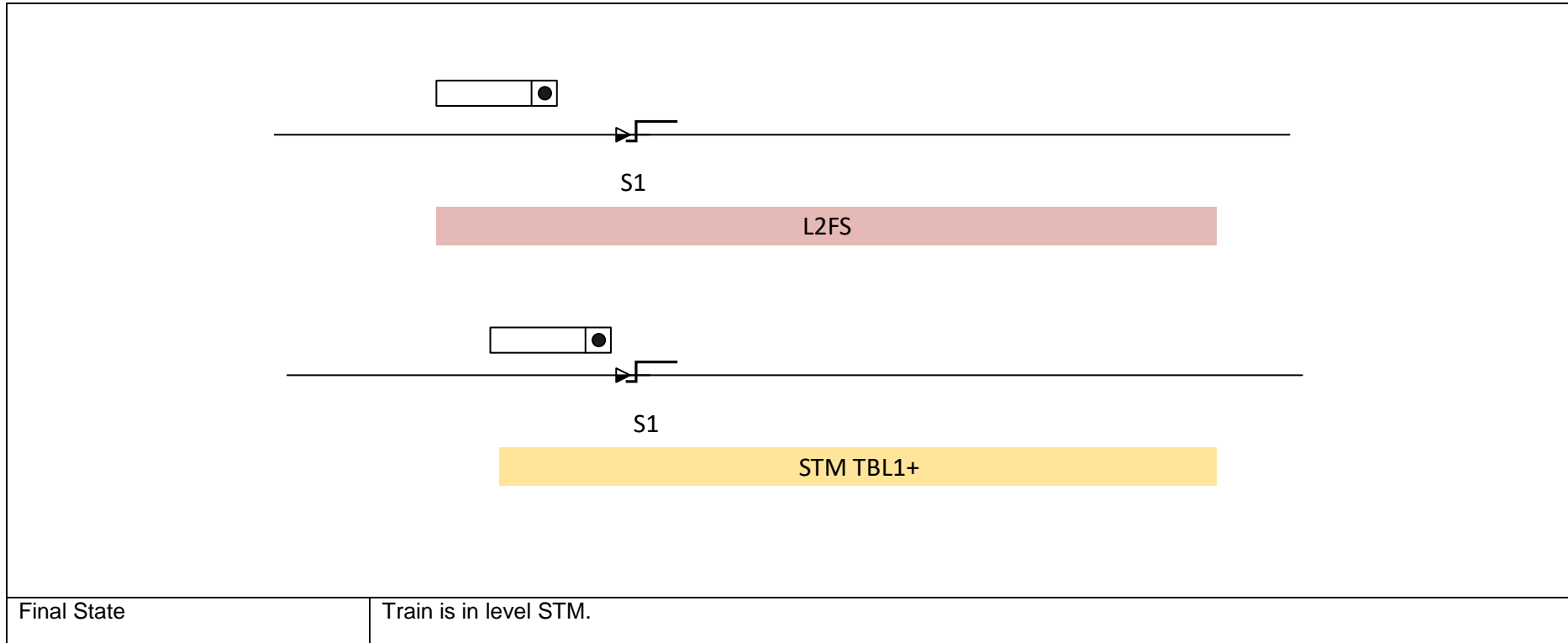
4.11 Tests ESC_L2FS_12

4.11.1 Description

ID	Date	Location / Line
ESC_L2FS_12	<dd/mm/yyyy>	<Line>
Description	Functionalities tested : - ESC_L2FS_12 RBC-RBC Handover with a single modem	

Signal passed	
Name	Trackside datafile in service
S0: <Signal name> is open (area of RBC1)	
S1: <Signal name> is open (area of RBC2)	
S2: <Signal name> is open (area of RBC2)	
S3: <Signal name> is open (area of RBC2)	

Test Scenarios	
Starting condition	Train is in level 2 FS mode.
	Train is beyond signal S0.
	Train has only one modem available.
	Be sure all authorisations are filled in before performing the test scenarios

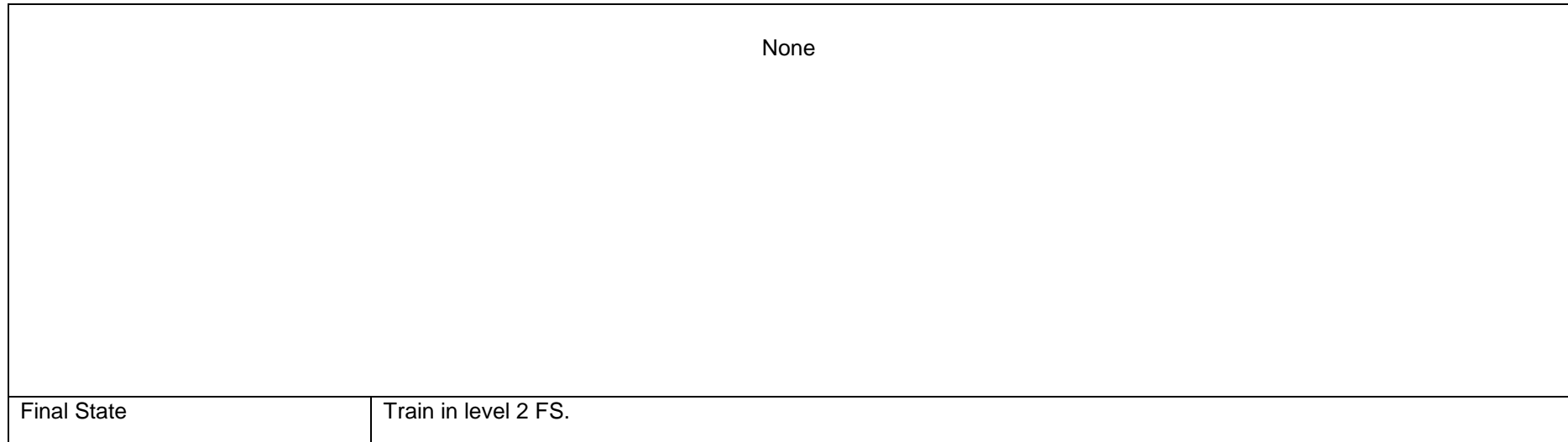| Sequences of the test scenario				
Step	Step description	Description of what to be tested	Statement	Comment
1	Train enters announcement distance of the RBC Handover and receives a P131.	-	Pass / Fail	
2	Train passes the SBG of signal S1 and enters the area of RBC2.	Train continues in level 2 FS.	Pass / Fail	
Test scenario finished				

4.11.2 Scenario diagram

Final State	Train in level 2 FS.

4.12 Tests ESC_L2FS_13

4.12.1 Description

ID	Date	Location / Line
ESC_L2FS_13	<dd/mm/yyyy>	<Line>
Description	Functionalities tested : - ESC_L2FS_13 Train categories **This test case must be executed for each train category available on-board.**	
Signal passed		
Name	Trackside datafile in service	
NR		
Test Scenarios		
Starting condition	Train is in level 2 mode FS beyond the speed restriction area.	
	Be sure all authorisations are filled in before performing the test scenarios	

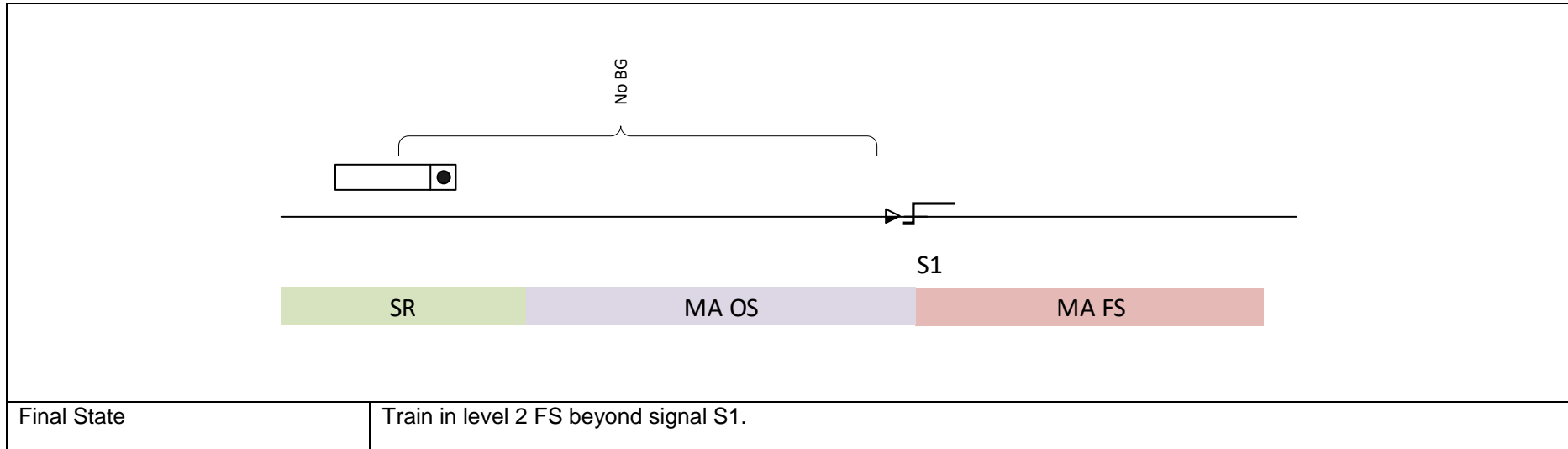| Sequences of the test scenario				
Step	Step description	Description of what to be tested	Statement	Comment
1	Train enters the category specific train restriction	The permitted speed is : • <Passenger Speed> for passenger train • <Freight P Speed> for freight P train • <Freight G Speed> for freight G train	Pass / Fail	
Test scenario finished				

4.12.2 Scenario diagram

None	
Final State	Train in level 2 FS.

4.13 Tests ESC_L2FS_14

4.13.1 Description

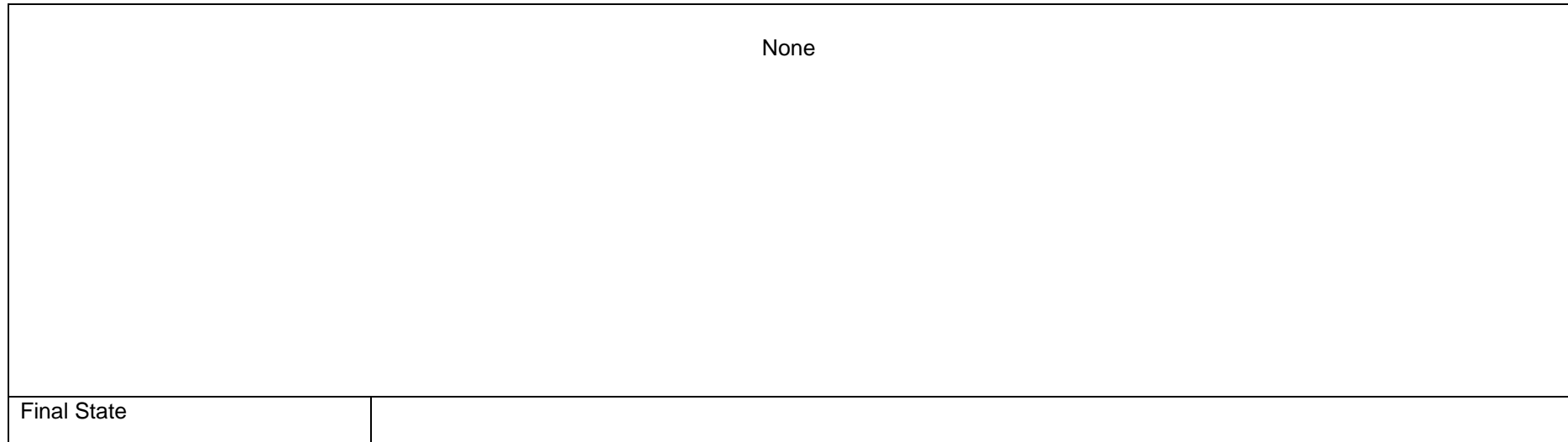| ID	Date		Location / Line
ESC_L2FS_14	<dd/mm/yyyy>		<Line>
Description	Functionalities tested : - ESC_L2FS_14 OS extension This test intends to verify that the train does not switch to FS mode before passing the signal.		
Signal passed			
Name		Trackside datafile in service	
S1 : <Signal name>			
Test Scenarios			
Starting condition	Train is in SB mode in rear of signal S1.		
	Train is in a trusted area as far as possible from the signal without BG's between the train and the SBG of the signal.		
	Be sure all authorisations are filled in before performing the test scenarios		
Sequences of the test scenario			
Step	Step description	Description of what to be tested	Statement	Comment
1	Drivers performs a Start of Mission in Level 2.	Train is in SR mode.	Pass / Fail	
2	Signal S1 opens. Train is closer than 150m of the signal	Train receives an MA with mode profile OS.	Pass / Fail	
3	Train passes the signal	Train switches to FS mode after passing the signal S1.	Pass / Fail	
Test scenario finished				

4.13.2 Scenario diagram

Final State	Train in level 2 FS beyond signal S1.

4.14 Tests ESC_TR_6

4.14.1 Description

ID	Date	Location / Line
ESC_TR_6	<dd/mm/yyyy>	<Line>
Description	Functionalities tested : - ESC_TR_6: Transition Level 2 FS to TVM430.	
Signal passed		
Name	Trackside datafile in service	
Test Scenarios		
Starting condition		
	Be sure all authorisations are filled in before performing the test scenarios	
Sequences of the test scenario		

Step	Step description	Description of what to be tested	Statement	Comment
1	**To be defined**		Pass / Fail	
2			Pass / Fail	
3			Pass / Fail	
Test scenario finished				

4.14.2 Scenario diagram

None
Final State	

4.15 Tests ESC_TR_8

4.15.1 Description

ID	Date		Location / Line
ESC_TR_8	<dd/mm/yyyy>		<Line>
Description	Functionalities tested : - ESC_TR_8: Transition TVM to ETCS2		
Signal passed			
Name		Trackside datafile in service	
Test Scenarios			
Starting condition			
	Be sure all authorisations are filled in before performing the test scenarios		
Sequences of the test scenario			
Step	Step description	Description of what to be tested	Statement	Comment
1	**To be defined**		Pass / Fail	
2			Pass / Fail	
3			Pass / Fail	
Test scenario finished				

4.15.2 Scenario diagram

None	
Final State	
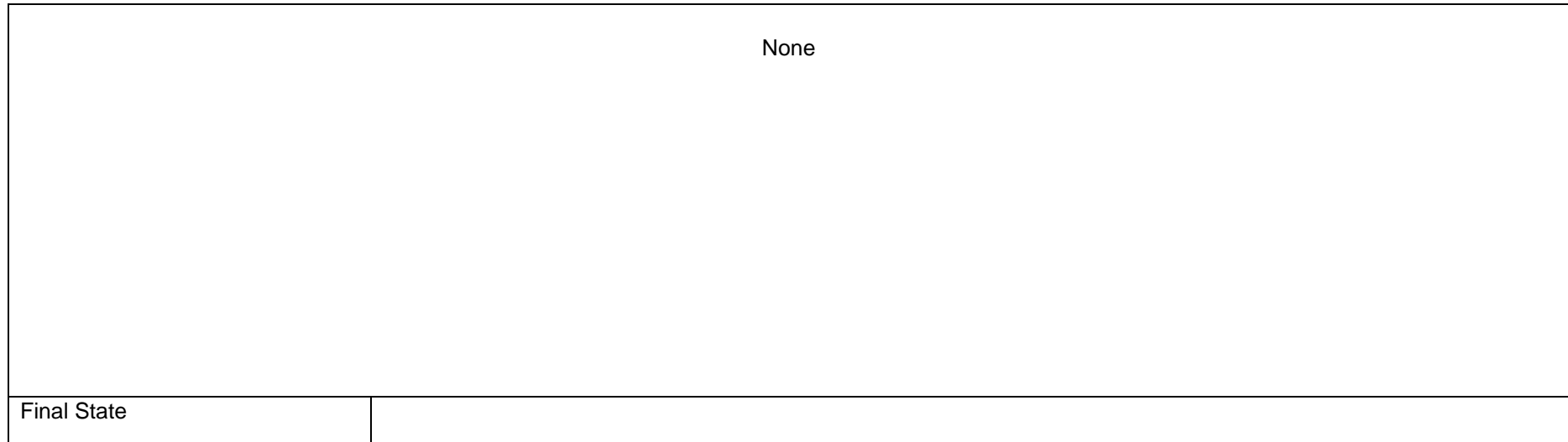
4.16 Tests ESC_TR_9

4.16.1 Description

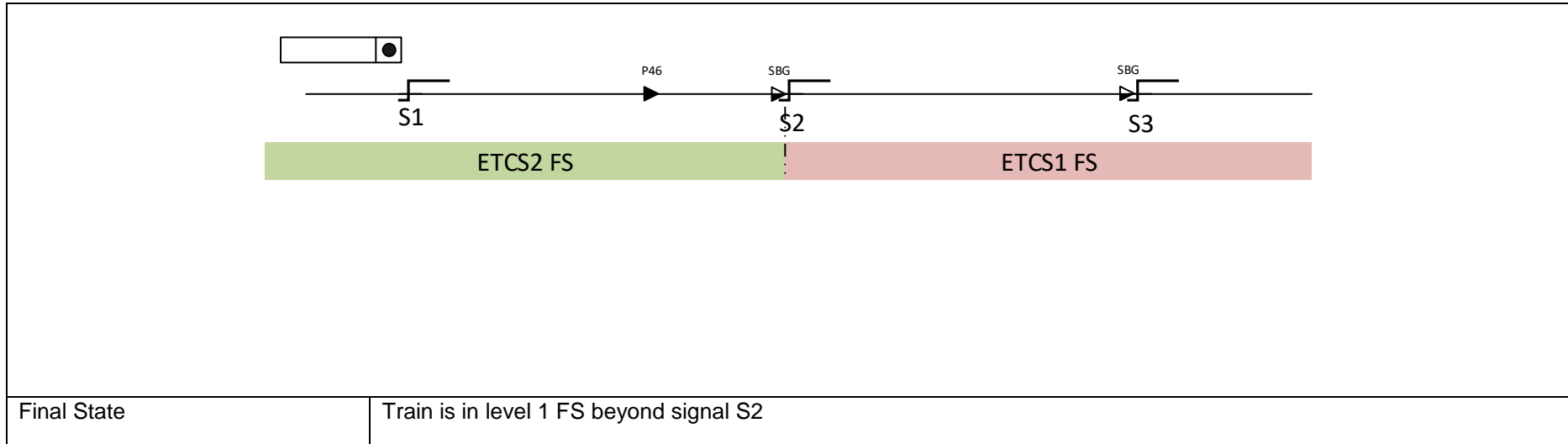| ID	Date		Location / Line
ESC_TR_9	<dd/mm/yyyy>		<Line>
Description	Functionalities tested : - ESC_TR_9 : Transition ETCS1 FS to ETCS2 FS		
Signal passed			
Name		Trackside datafile in service	
S1 : <Signal name> is open			
S2 : <Signal name> is open. It is the first signal equipped with ETCS2			
S3 : <Signal name> is open			
Test Scenarios			
Starting condition	Train is in level 1 mode FS beyond signal S1.		
	Be sure all authorisations are filled in before performing the test scenarios		
Sequences of the test scenario			
Step	Step description	Description of what to be tested	Statement	Comment
1	Train passes signal S1 and approaches signal S2.	Train receives a transition order to level 2. A level transition announcement is displayed on the DMI (no acknowledgment required).	Pass / Fail	
2	Train passes the signal S2.	Transition to level 2 occurs about 60 meters in rear of signal S2.	Pass / Fail	
Test scenario finished				

4.16.2 Scenario diagram

Final State	Train in level 2 FS beyond signal S3.
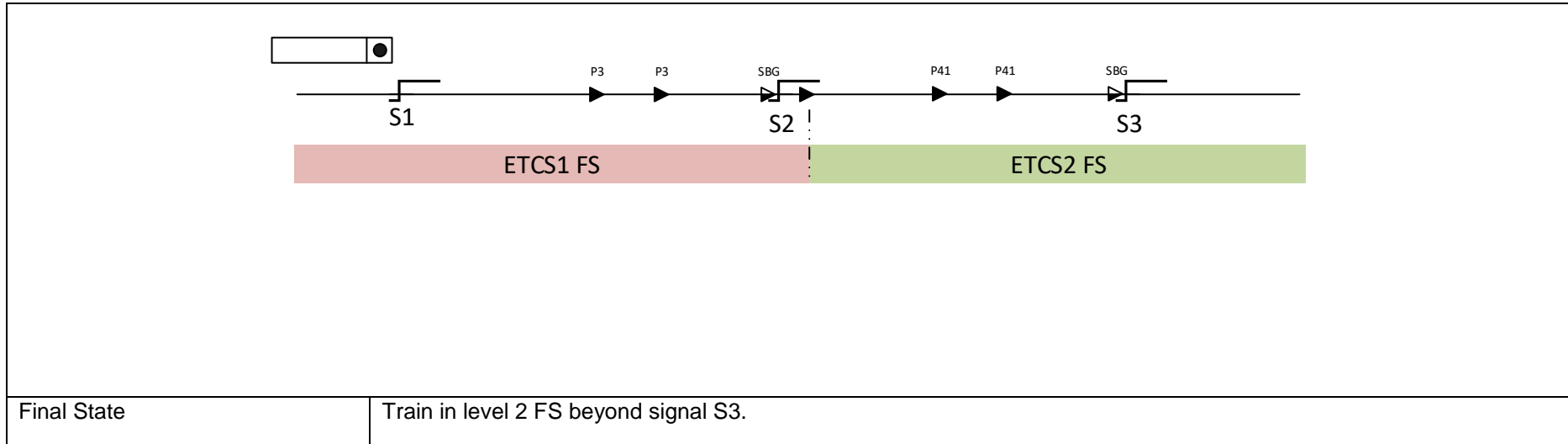
4.17 Tests ESC_TR_10

4.17.1 Description

ID	Date	Location / Line
ESC_TR_10	<dd/mm/yyyy>	<Line>
Description	Functionalities tested : - ESC_TR_10 Transition ETCS2 FS to ETCS1 FS	
Signal passed		
Name	Trackside datafile in service	
S1 : <Signal name> is open		
S2 : <Signal name> is open. It is the first ETCS1 signal		
S3 : <Signal name> is open		
Test Scenarios		
Starting condition	Train is in level 2 FS in rear of signal S1.	
	Be sure all authorisations are filled in before performing the test scenarios	
Sequences of the test scenario		

Step	Step description	Description of what to be tested	Statement	Comment
1	Train passes signal S1	Train remains in level 2 FS	Pass / Fail	
2	Train passes signal S2	Train switches to Level 1 FS	Pass / Fail	
Test scenario finished				

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4.17.2 Scenario diagram

Final State	Train is in level 1 FS beyond signal S2

4.18 Tests ESC_TR_13

4.18.1 Description

ID	Date	Location / Line
ESC_TR_13	<dd/mm/yyyy>	<Line>
Description	Functionalities tested : - ESC_TR_13 : Transition ETCS2 FS to STM TBL1+	
Signal passed		
Name	Trackside datafile in service	
S1 : <Signal name> is open		
S2 : <Signal name> is open. It is the first STM signal.		
S3 : <Signal name> is open		
Test Scenarios		
Starting condition	Train is in level 2 mode FS beyond signal S1.	
	Be sure all authorisations are filled in before performing the test scenarios	
Sequences of the test scenario		

Step	Step description	Description of what to be tested	Statement	Comment
1	Train passes signal S1 and the first P41 BG.	Train receives a transition order to level STM. A level transition announcement is displayed on the DMI.	Pass / Fail	
2	The drivers acknowledges the level transition and the train passes the second P41 BG.	Train switches to level STM.	Pass / Fail	
Test scenario finished				

4.18.2 Scenario diagram

Final State	Train is in level STM beyond signal S2.
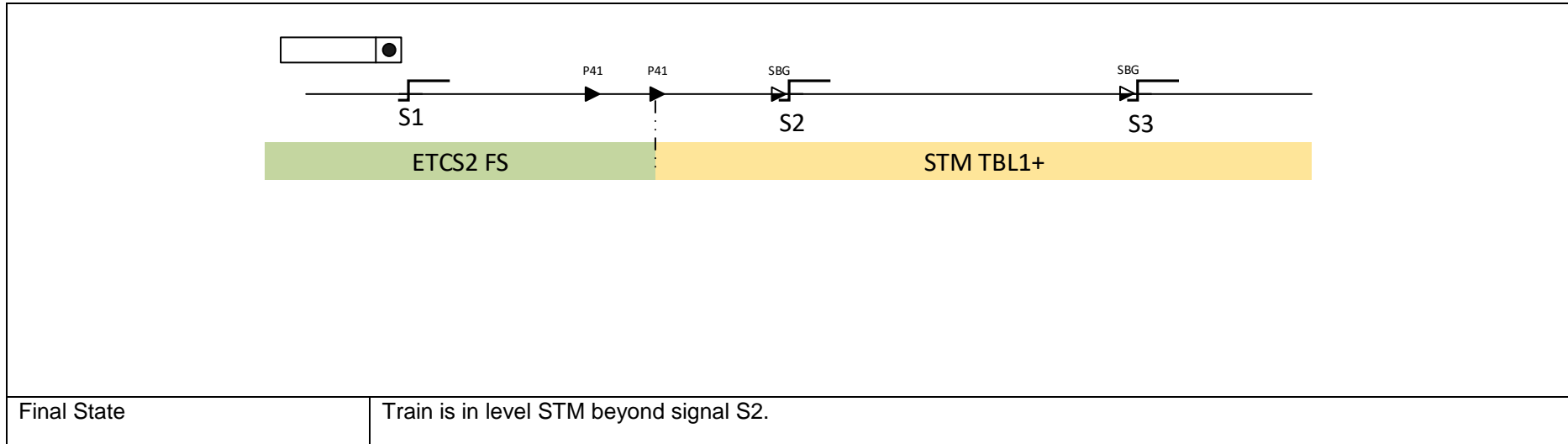
4.19 Tests ESC_TR_16

4.19.1 Description

ID	Date		Location / Line
ESC_TR_16	<dd/mm/yyyy>		<Line>
Description	Functionalities tested : - ESC_TR_16 Transition STM TBL1+ to ETCS2 FS		
Signal passed			
Name		Trackside datafile in service	
S1 : <Signal name> is open			
S2 : <Signal name> is open. It is the first ETCS2 signal.			
S3 : <Signal name> is open			
Test Scenarios			
Starting condition	Train is beyond signal S1 in level STM.		
	Be sure all authorisations are filled in before performing the test scenarios		
Sequences of the test scenario			

Step	Step description	Description of what to be tested	Statement	Comment
1	Train passes signal S1 and approaches signal S2.	Train receives a transition order to level 2. A level transition announcement is displayed on the DMI.	Pass / Fail	
2	Driver acknowledge the level transition announcement and passes the signal S2.	Transition to level 2 occurs about 60 meters in rear of signal S2.	Pass / Fail	
Test scenario finished				

4.19.2 Scenario diagram

Final State	Train is in level 2 FS beyond signal S2.