

Train Control ETCS system ETCS 1

ETCS System Compatibility Test Description

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Abrogated documents

Name	Version	Date

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			-



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4.14.1	Description	
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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 1 with system version 1.Y and the Onboard.

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 ETCS1 with system version 1.Y area on Infrabel conventional network.

The technical specification for interoperability used inside an ETCS1 with system version 1.Y area on Infrabel network is the set of specifications 1, B2(Cfr [2] and [3]).

These test scenarios for ETCS system compatibility do not cover all design rules used in an ETCS1 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 1.2	Infrabel
1.3	Reference documents	
Ref.	Title	Owner
[2]	Commission Decision (EU) 2012/88/EU of 25 January 2012	UE
[3]	Commission Decision (EU) 2012/696/EU of 6 November 2012	UE
[4]	PSI(TP,ETCSsys.L1LS.z) ESC TST DSC	Infrabel
[5]	PSI(TC,ETCSsys.L2,z) ESC TST DSC	Infrabel
1.4	Annexes	
1.44	AUTICACS	
Ref.	Title	Owner

[6] None

1.5 Scope

This document is applicable for all trains would run under the protection of ETCS level 1 in an ETCS1 with system version 1.Y area on the Infrabel conventional network.

1.6 *Definitions, symbols and abbreviations*

CCS	Control Command System
DMI	Driver Machine Interface
ESC	ETCS System Compatibility
ETCS	European Train Control System
IBG	Infill Balise Group
LS	Limited Supervision
NR	Not Relevant
SBG	Signal Balise Group
TSI	Technical Specification for Interoperability



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_L1FS_1	Train categories		
ESC_L1FS_2	IREPOS		
ESC_L1FS_3	REPOS on two consecutive sections		
ESC_L1FS_4	Crossing closed non-permissive signal without override		
ESC_L1FS_5	Crossing closed non-permissive signal with override		
ESC_L1FS_6	Crossing a closed permissive signal		
ESC_L1FS_7	CR819		
ESC_L1FS_8	CR1120		
ESC_TR_1	ETCS 1 FS >> ETCS 1 LS (out of scope of this document)		
ESC_TR_3	ETCS 1 LS >> ETCS 1 FS (out of scope of this document)		
ESC_TR_5	ETCS 1FS >> TVM430		
ESC_TR_7	TVM430 >> ETCS 1FS		
ESC_TR_9	ETCS1 FS >> ETCS 2 FS (out of scope of this document)		
ESC_TR_10	ETCS 2 FS >> ETCS 1 FS (out of scope of this document)		
ESC_TR_12	ETCS 1 FS >> STM TBL1+		
ESC_TR_15	STM TBL1+ >> ETCS 1 FS		

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

Transitions to and from ETCS1 Limited supervision (ESC_TR_1 and ESC_TR_3) are covered in the ESC test DSC for ETCS1 LS program (cf. [4]).

Transitions to and from ETCS Level 2 (ESC_TR_9 and ESC_TR_10) are covered in the ESC test DSC for ETCS2 program (cf. [5]).



4. Test scenarios

4.1 Test ESC_L1FS_1: Train categories

4.1.1 Description

ID		Date				Location / Line
ESC_L2	C_L2FS_1 part1 <hr/> <dd mm="" yyyy=""></dd>					<line></line>
Descripti	ion	Functionalities tested	:			
Tests ESC_			_1FS_1 : train categories			
	This test does not need to be repeated with all possible categories. The train categories should not be the one asso					not be the one associated
with the lowest speed profile.						
Signal pa	assed					
Name				Trackside da	itafile in se	ervice
			ginning of a train category speed restricted area.			
	-	closed: Signal S1 is up	wards panel P1.			
Test Sce		1				
Starting condition Track 1: track <track< td=""><td>: number></td><td></td><td></td><td></td></track<>			: number>			
Train A						
	Train A is in		Level 1 mode FS			
		 Train A is in 	rear of signal S1			
		Train catego	ory <freight freight="" g="" p="" passenger=""> is selected of</freight>	on-board.		
			ations are filled in before performing the test sco	enarios		
Sequences of the test scenario						
Step			Description of what to be tested	Statement	Comme	nt
1	Signaller opens sig	nal S1.	Train A receives an MA with a packet 27 including	Pass / Fail		
			train category speed restriction.			
2	2 Driver starts and passes the signal S1 and panel P1.		The speed is limited at <train category="" max<="" td=""><td>Pass / Fail</td><td></td><td></td></train>	Pass / Fail		
			speed> km/h at panel P1.			



Test scenario finished						



4.1.2 Scenario diagram

	None
Final State	Train in level1 FS beyond panel P1



4.2 Test ESC_L1FS_2: IREPOS

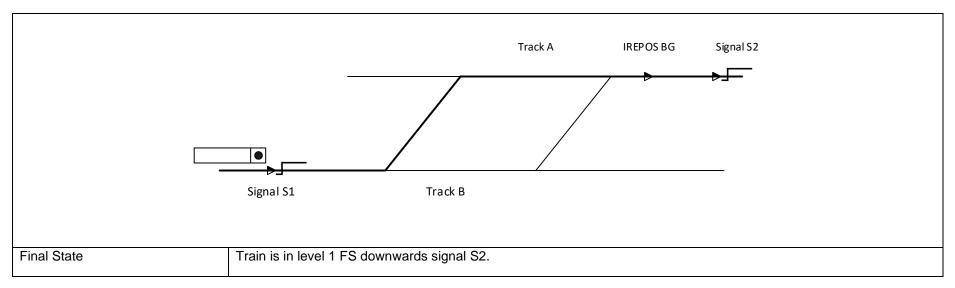
4.2.1 Description

ID		Date			Location / Line			
ESC_L1	FS_2	<dd mm="" yyyy=""></dd>		<line></line>				
Description Functionalities tested :								
		Test ESC_L1FS_2: IREPOS						
		The section betwee	n signals S1 and S2 is a regrouped section. T	he itinerary passi	ng by track <track number=""/> (track			
		A) is the longest itir	nerary of the regrouped itineraries.					
			ID_C NID_BG>) sends IREPOS information <	distance signal/B	G>m upwards signal S1.			
Signal p	assed							
Name				Trackside datafile	e in service			
Signal S	31: <mark><signal name=""></signal></mark> is o	open						
Signal S	2: <mark><signal name=""></signal></mark> is a	closed						
Test Sce								
Starting	condition	Train is upwards sign	al S1 in ETCS 1 FS.					
		The route is set between S1 and S2 passing by track A.						
		Be sure all authorisa	sure all authorisations are filled in before performing the test scenarios					
Sequence	ces of the test scenar	io						
Step	Step description		Description of what to be tested	Statement	Comment			
1	1 Train passes signal S1 and track A. Train receives IREPOS information when passing IREPOS BG.		Passing S1, the MA has the length of the shortest itinerary to the signal S2, and the IREPOS BG is linked with identifier "UNKNOWN". Passing the IREPOS BG, the length of the current section is extended by <difference of<br="">distance between regrouped routes>m.</difference>	Pass / Fail				
2	Signaller opens s passes signal S2.	signal S2 then train	The MA is extended downwards signal S2	Pass / Fail				





4.2.2 Scenario diagram





4.3 Test ESC_L1FS_2_part 2: IREPOS

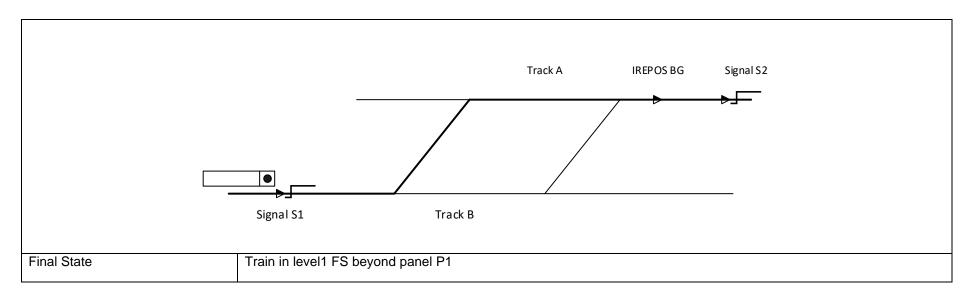
4.3.1 Description

ID		Date			Location / Line			
ESC_L1	FS_2_part2	<dd mm="" yyyy=""></dd>		<line></line>				
Descript	tion	Functionalities tested	:					
		Test ESC_L	1FS_2: IREPOS					
		The section betwee	n signals S1 and S2 is a regrouped section. The section of the sec	ne itinerary pas	sing by track <mark><track number=""/></mark> (trac			
		A) is the longest itir	nerary of the regrouped itineraries.					
			ID C NID BG>) sends IREPOS information <	distance signal,	BG>m upwards signal S1.			
Signal p	assed			<u> </u>				
Name				Trackside data	file in service			
Signal S	51: <signal name=""> i</signal>	s open						
Signal S	62: <signal name=""> i</signal>	s closed						
Test Sce	enarios							
Starting	condition	Train is upwards sign	al S1 in ETCS 1 FS.					
		The route is set betw	The route is set between S1 and S2 passing by track A.					
		Be sure all authoris	risations are filled in before performing the test scenarios					
Sequen	ces of the test scen		· · ·					
Step	Step description		Description of what to be tested	Statement	Comment			
1	Train passes sig	nal S1 while the signal	The MA has the length of the shortest itinerary	Pass / Fail				
	S2 is closed.		to the signal S2, and the IREPOS BG is linked					
			with identifier "UNKNOWN".					
2		reaches the IREPOS	The MA is extended beyond the signal S2	Pass / Fail				
	BG, the signal S	•	(infill information is accepted) and the length					
		e IREPOS BG receiving	of the current section is extended by					
	IREPOS informa	ition.	<difference between="" distance="" of="" regrouped<="" td=""><td></td><td></td></difference>					
			routes>m.					



Test sce	Test scenario finished							

4.3.2 Scenario diagram





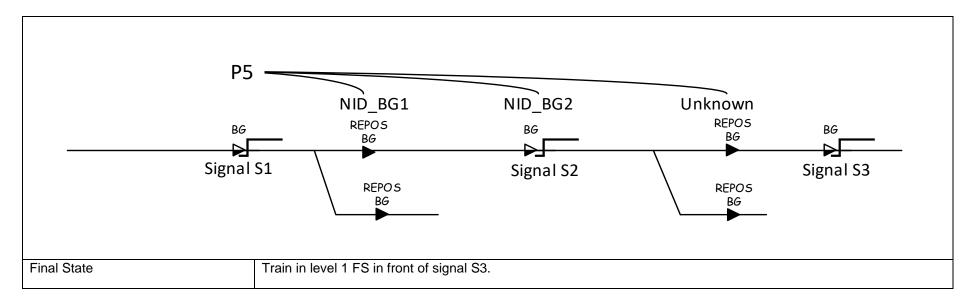
4.4 Test ESC_L1FS_3: REPOS on two consecutive sections

4.4.1 Description

ESC_L1FS_3 <dd mm="" yyy=""> Description Functionalities tested : - Test ESC_L1FS_3: REPOS on two consecutive sections. At a portion of track where the routes are unified in 2 consecutive sections. BG sending the P16 are chained with NID_BG on the first section and with the unknown NID_BG on the second section. Signal passed Signal passed Trackside datafile in service Signal name> is open Signal name> is open S1 : <signal name=""> is open Trackside datafile in service Signal name> is closed Signal name> is closed Test Scenarios Train in level 1 FS upwards signal S1. Signal name> is closed Signal name> is closed Sequences of the test scenario Securition of what to be tested Statement Comment Step Step description Description of what to be tested Statement Comment 1 Train passes signal S1 and goes to signal 3 No linking error when passing the two repositioning BG's. Pass / Fail Statement Comment 2 Value Pass / Fail Value Pass / Fail Value Value</signal></dd>	ID		Date				Location / Line
- Test ESC_L1FS_3: REPOS on two consecutive sections. At a portion of track where the routes are unified in 2 consecutive sections, BG sending the P16 are chained with NID_BG on the first section and with the unknown NID_BG on the second section. Signal passed Trackside datafile in service Name Trackside datafile in service S1 : <signal name=""> is open Trackside datafile in service S2 : <signal name=""> is open Signal name> is open S3 : <signal name=""> is closed Train in level 1 FS upwards signal S1. Test Scenarios Train in level 1 FS upwards signal S1. Starting condition Train in level 1 FS upwards 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 1 Train passes signal S1 and goes to signal S1 No linking error when passing the two repositioning BG's. Pass / Fail</signal></signal></signal>	ESC_L1	FS_3	<dd mm="" yyyy=""></dd>				<line></line>
At a portion of track where the routes are unified in 2 consecutive sections, BG sending the P16 are chained with NID_BG on the first section and with the unknown NID_BG on the second section. Signal passed Name Trackside datafile in service S1 : <signal name=""> is open Trackside datafile in service S2 : <signal name=""> is open Image: Signal name> is open S3 : <signal name=""> is closed Image: Signal name> is closed Test Scenarios Image: Seguence service Starting condition Train in level 1 FS upwards signal S1. Image: Seguence service service</signal></signal></signal>	Descript	tion	Functionalities tested	:			
NID_BG on the first section and with the unknown NID_BG on the second section. Signal passed Name Trackside datafile in service S1 : <signal name=""> is open S2 : <signal name=""> is open S3 : <signal name=""> is closed Test Scenarios Starting condition Train in level 1 FS upwards signal S1. Be sure all authorisations are filled in before performing the test scenarios Sequences of the test scenarios Step Step description Description of what to be tested Statement 1 Train passes signal S1 and goes to signal S2. No Inking error when passing the two repositioning BG's.</signal></signal></signal>			 Test ESC_L1 	FS_3: REPOS on two co	nsecutive sections		
Signal passed Trackside datafile in service S1 : <signal name=""> is open Trackside datafile in service S2 : <signal name=""> is open S3 S3 : <signal name=""> is closed Train in level 1 FS upwards signal S1. Test Scenarios Starting condition Train in level 1 FS upwards signal S1. Be sure all authorisations are filled in before performing the test scenarios Sequences of the test scenario Step description 1 Train passes signal S1 and goes to signal 3 No linking error when passing the two repositioning BG's. Pass / Fail</signal></signal></signal>	At a portion of track where the routes are unified in 2 consecutive sections, BG sending the P16 are chaine						
Name Trackside datafile in service S1 : <signal name=""> is open </signal>			NID_BG on the first s	ection and with the unkno	own NID_BG on the se	cond section.	
S1 : <signal name=""> is open S2 : <signal name=""> is open S3 : <signal name=""> is closed Test Scenarios Starting condition Train in level 1 FS upwards signal S1. Be sure all authorisations are filled in before performing the test scenarios Sequences of the test scenario Step Step description 1 Train passes signal S1 and goes to signal 3 No linking error when passing the two repositioning BG's. Pass / Fail</signal></signal></signal>	Signal p	assed					
S2 : <signal name=""> is open S3 : <signal name=""> is closed Test Scenarios Starting condition Train in level 1 FS upwards 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 goes to signal 3</signal></signal>	Name				Trackside datafile in	service	
S3 : <signal name=""> is closed Test Scenarios Starting condition Train in level 1 FS upwards 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 1 Train passes signal S1 and goes to signal 3</signal>	S1 : <si< td=""><td>gnal name> is open</td><td></td><td></td><td></td><td></td><td></td></si<>	gnal name> is open					
Test Scenarios Train in level 1 FS upwards signal S1. Be sure all authorisations are filled in before performing the test scenarios Be sure all authorisations are filled in before performing the test scenarios Sequences of the test scenario Step description Description of what to be tested Statement Comment 1 Train passes signal S1 and goes to signal 3 No linking error when passing the two repositioning BG's. Pass / Fail Pass / Fail	S2 : <si< td=""><td>gnal name> is open</td><td></td><td></td><td></td><td></td><td></td></si<>	gnal name> is open					
Starting condition Train in level 1 FS upwards signal S1. Image: starting condition Image: starting condition Be sure all authorisations are filled in before performing the test scenarios Step Step description Step description Description of what to be tested 1 Train passes signal S1 and goes to signal S1 and goes to signal 3	S3 : <si< td=""><td>gnal name> is closed</td><td>1</td><td></td><td></td><td></td><td></td></si<>	gnal name> is closed	1				
Be sure all authorisations are filled in before performing the test scenarios 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 goes to signal 3 No linking error when passing the two repositioning BG's. Pass / Fail Image: Comment colspan="2">Comment	Test Sce	enarios			•		
Sequences of the test scenario Step Step description Description of what to be tested Statement Comment 1 Train passes signal S1 and goes to signal 3 No linking error when passing the two repositioning BG's. Pass / Fail	Starting	condition	Train in level 1 FS up	wards signal S1.			
Sequences of the test scenario Step Step description Description of what to be tested Statement Comment 1 Train passes signal S1 and goes to signal 3 No linking error when passing the two repositioning BG's. Pass / Fail							
Step Step description Description of what to be tested Statement Comment 1 Train passes signal S1 and goes to signal 3 No linking error when passing the two repositioning BG's. Pass / Fail Pass / Fa			Be sure all authoris	ations are filled in befor	e performing the test	scenarios	
1 Train passes signal S1 and goes to signal 3 No linking error when passing the two repositioning BG's. Pass / Fail	Sequence	ces of the test scena	rio		• •		
signal 3 repositioning BG's.	Step	Step description		Description of what to be	e tested	Statement	Comment
2 Pass / Fail	1			•	n passing the two	Pass / Fail	
	2					Pass / Fail	
Test scenario finished	Test sce	enario finished				I	



4.4.2 Scenario diagram





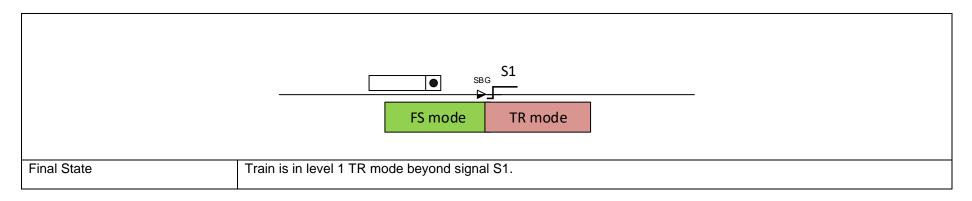
4.5 Test ESC_L1FS_4: Crossing closed non-permissive signal without override

4.5.1 Description

ID		Date				Location / Line			
ESC_L1	FS_4	<dd mm="" yyyy=""></dd>			<line></line>				
Descript	tion	Functionalities tested	1:			•			
		Test ESC_L1	S_4: Crossing closed non-p	ermissive signal	without overri	de			
Signal p	assed								
Name	45564		Tra	ckside datafile in	service				
	anal names is a clo	sed-controlled main sto			3011100				
31.<0	ynai name> 15 a Ciu								
Tasto									
Test Sce									
Starting	condition	Train is :							
		 in level 1 FS 	in level 1 FS mode						
		 at standstill u 	ipwards signal S1.						
		Be sure all authoris	ations are filled in before pe	rforming the test	t scenarios.				
Sequen	ces of the test scena								
Step	Step description		Description of what to be tes	ted	Statement	Comment			
1	Train passes signal S1 without activation of the override. The train should be at low speed when passing the signal.		Train is tripped and emergency bra	kes are applied.	Pass / Fail				
2					Pass / Fail				
Test sce	enario finished		I						



4.5.2 Scenario diagram





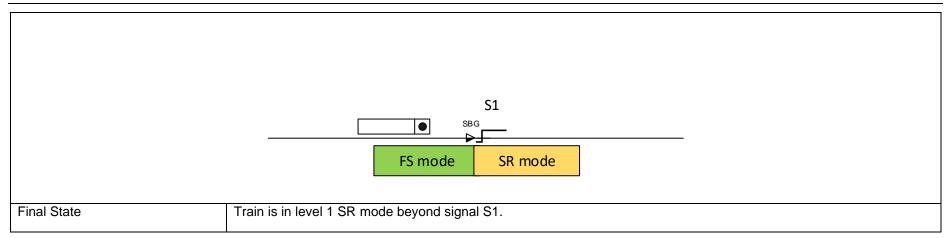
4.6 Test ESC_L1FS_5: Crossing closed non-permissive signal with override

4.6.1 Description

ID		Date				Location / Line	
ESC_L1	FS_5	<dd mm="" yyyy=""></dd>				<line></line>	
Descript	ion	Functionalities tested	1:			· · ·	
		 Test ESC_L1FS_4: Crossing closed non-permissive signal with override 					
Signal pa	assed						
Name				Trackside datafi	le in service		
S1 : <si< td=""><td>gnal name> is a clos</td><td>ed-controlled main stop</td><td>o signal.</td><td></td><td></td><td></td></si<>	gnal name> is a clos	ed-controlled main stop	o signal.				
Test Sce	enarios						
Starting condition Train is : • in level 1 FS • at standstill u		ipwards signal S1.					
		Be sure all authoris	ations are filled in befo	re performing the	e test scenarios.		
Sequence	ces of the test scena	rio					
Step	Step description		Description of what to b	be tested	Statement	Comment	
1	1 Train passes signal S1 at low speed after activation of the override.		Train changes to SR mode.		Pass / Fail		
Test sce	nario finished						

4.6.2 Scenario diagram







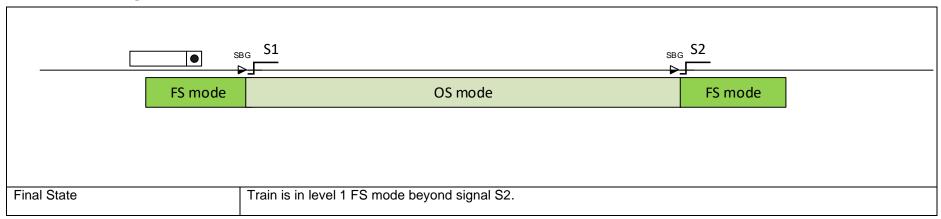
4.7 Test ESC_L1FS_6: Crossing a closed permissive signal

4.7.1 Description

ID		Date	Location / Line			
ESC_L1	FS_6	<dd mm="" yyyy=""></dd>				<line></line>
Descripti	ion	Functionalities tested	:			
		 Test ESC_L1F 	S_6: Crossing a closed pe	ermissive signal		
Signal pa	assed					
Name				Trackside datafile ir	n service	
S1 : <się< td=""><td>gnal name> is a close</td><td>ed-non controlled main</td><td>stop signal.</td><td></td><td></td><td></td></się<>	gnal name> is a close	ed-non controlled main	stop signal.			
S2: <się< td=""><td><mark>gnal name></mark> is an ope</td><td>en main stop signal. Eo</td><td>uipped with an IBG</td><td></td><td></td><td></td></się<>	<mark>gnal name></mark> is an ope	en main stop signal. Eo	uipped with an IBG			
Test Sce	enarios					
at standstil		at standstill u Be sure all authorisa	mode pwards signal S1. ations are filled in before	e performing the tes	st scenarios.	
	ces of the test scenar	10				
Step	Step description		Description of what to be	tested	Statement	Comment
1	Train passes signal S1 at low speed without activation of the override.		Train changes to OS mode.		Pass / Fail	
2	The train passes IBG of S2.		Train rejects the infill information.		Pass / Fail	
3 Train continues and passes S2.		Train changes to FS mode, ex	tending the MA length.	Pass / Fail		
Test sce	nario finished					



4.7.2 Scenario diagram





4.8 **Test ESC_L1FS_7 : CR819**

4.8.1 Description

ID		Date Location / Line					
ESC_L1FS_	_7	<dd mm="" yyyy=""> <a><li< td=""></li<></dd>					
Description		Functionalities tested	:				
		- ESC_L1FS_	7 : CR819				
		If the balises are dup	licated within a balise group and a balise is not	read or not deco	oded correctly but the duplicated balise		
		is, then the message	shall not be rejected and no linking reaction sha	all be applied.			
Signal passe	ed						
Name			Trackside datafile in	service			
Test Scenar	rios						
Starting con	dition	Train is in level 1 mod	de FS upwards a fixed balise group sending a te	ext message.			
	-	A cover is installed or	on the first balise of the fixed BG ($N_PIG = 0$).				
	-						
	-	Be sure all authoris	ations are filled in before performing the test	t scenarios			
Sequences	of the test scenari	0					
Step St	tep description		Description of what to be tested	Statement	Comment		
1 Ti	1 Train passes the fixed BG		No linking reaction occurs and the text	Pass / Fail			
			message <text bg="" by="" send="" the=""> is displayed</text>				
			on the DMI.				
Test scenari	io finished						

4.8.2 Scenario diagram

	none
Final State	Train in level 1 FS beyond fixed BG



4.9 Test ESC_L1FS_8: CR1120

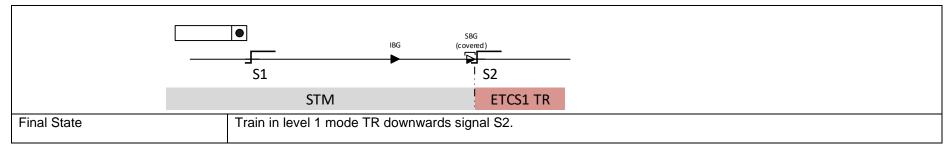
4.9.1 Description

ID		Date				Location / Line	
ESC_L1	FS_8	<dd mm="" yyyy=""></dd>				<line></line>	
Descript	ion	Functionalities	tested :				
		- ESC_L	_1FS_8: CR1120				
			rom level STM to ETCS 1 FS, the bod with an IBG. The train cross		sition announce	ment applicable to the next signal. This	
		Expected resul	t: packets 5, 12, 21, 27 received	I at the IBG are not acc	cepted without ac	ccepting packet 136.	
		Remark: If it is	possible to determine when the	e train rejects a packet,	, the test case ca	an ends after step 2. This way, it is not	
		required to cov	er the SBG of signal S2.				
Signal pa	assed						
Name				Trackside datafile in s	service		
S1 : <si< td=""><td>gnal name of a trans</td><td>ition signal> is o</td><td>pen presenting Y aspect.</td><td></td><td></td><td></td></si<>	gnal name of a trans	ition signal> is o	pen presenting Y aspect.				
S2 : <si< td=""><td>gnal name of a trans</td><td>ition signal> is cl</td><td>osed.</td><td></td><td></td><td></td></si<>	gnal name of a trans	ition signal> is cl	osed.				
Test Sce	enarios						
Starting	condition	Train is in leve	I STM upwards signal S1.				
		Train is upware	s upwards signal S1				
		Both balises of	ises of the SBG of signal S2 are covered.				
		Be sure all au	thorisations are filled in before	e performing the test	scenarios		
Sequence	ces of the test scena	rio					
Step	Step description		Description of what to be tested	d	Statement	Comment	
1	Train passes signal S1.		Train receives an MA with an announcement of transition to level 1.		Pass / Fail		
2	Signaller opens si	gnal S2 before	Train receives infill information	and reject packet 136	Pass / Fail		
	train passes the IE	BG of signal S2	and packets 5, 12, 21 and 27.				
3	Train passes signa	al S2.	Train changes to level 1 TR mo	ode.	Pass / Fail		



Test scenario finished

4.9.2 Scenario diagram





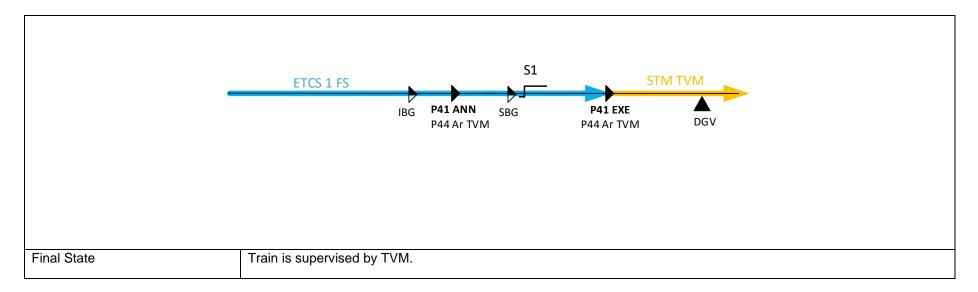
4.10 Test ESC_TR_5 : Transition Level 1 FS to TVM430

4.10.1 Description

ESC_TR_5 <dd mm="" yyyy=""> Description Functionalities tested : - ESC_TR_5: Transition Level 1 FS to TVM430. </dd>	ID		Date	Location / Line					
Image: Signal passed Trackside datafile in service Signal name of the last signal> is open presenting Y aspect. Tackside datafile in service Signal name of the last signal> is open presenting Y aspect. Tackside datafile in service Signal name of the last signal> is open presenting Y aspect. Trackside datafile in service Test Scenarios Starting condition Train in level 1 FS All signals or marker board are at Open Proceed to permit the train to ride at full speed. Besure all authorisations are filled in before performing the test scenarios Sequences of the test scenario Step description Description of what to be tested Statement Comment 1 Train passes the announcement BG of the transition. Train sitiches to Hot Standby. Pass / Fail Pass / Fail 2 Driver acknowledges the transition. Train switches to Level STM and the TVM plass activated ("contrôle transition. Pass / Fail Pass / Fail 3 Train passes the KVB balise with DVG The TVM onboard is activated ("contrôle dramement" is activated ("contrôle reaction. Pass / Fail Pas	ESC_TR	R_5	<dd mm="" yyyy=""></dd>	<line></line>					
Signal passed Trackside datafile in service S1 : <signal last="" name="" of="" signal="" the=""> is open presenting Y aspect. Trackside datafile in service Test Scenarios Train in level 1 FS Starting condition Train in level 1 FS All signals or marker board are at Open Proceed to permit the train to ride at full speed. Be sure all authorisations are filled in before performing the test scenarios Sequences of the test scenario Step Step description 1 Train passes the announcement BG of the transition. 1 Train passes the announcement BG of the transition is announced on the DMI. 1 If possible, confirm that the TVM onboard equipment switches to Hot Standby. The request for the acknowledgement of the transition is displayed. 2 Driver acknowledges the transition. Train passes the execution BG of the transition is armed after a few seconds. 13 Train passes the KVB balise with DVG 3 Train passes the KVB balise with DVG</signal>	Descript	ion	Functionalities tested	:					
Name Trackside datafile in service S1 : <signal last="" name="" of="" signal="" the=""> is open presenting Y aspect. Image: Condition of the last signal> is open presenting Y aspect. Test Scenarios Train in level 1 FS All signals or marker board are at Open Proceed to permit the train to ride at full speed. Be sure all authorisations are filled in before performing the test scenarios Sequences of the test scenario Step description Description of what to be tested Statement Comment 1 Train passes the announcement BG of the transition. Train passes the transition. Train passes the execution BG of the transition is displayed. Pass / Fail 2 Driver acknowledges the transition. Train switches to Level STM and the TVM equipment is armed after a few seconds. Pass / Fail 3 Train passes the KVB balise with DVG function. The TVM onboard is activated ("contrôle reaction." Pass / Fail</signal>			- ESC_TR_5:	Transition Level 1 FS to TVM430.					
S1: <signal last="" name="" of="" signal="" the=""> is open presenting Y aspect. Test Scenarios Starting condition Train in level 1 FS All signals or marker board are at Open Proceed to permit the train to ride at full speed. Be sure all authorisations are filled in before performing the test scenarios Sequences of the test scenario Step description 1 Train passes the announcement BG of the transition. Transition is announced on the DMI. Pass / Fail If possible, confirm that the TVM onboard equipment switches to Hot Standby. The request for the acknowledgment of the transition is displayed. Pass / Fail 2 Driver acknowledges the transition. Train switches to Level STM and the TVM equipment is armed after a few seconds. Pass / Fail 3 Train passes the KVB balise with DVG function. The TVM onboard is activated ("contrôle d'armement" is activated), no expected Pass / Fail</signal>	Signal pa	assed	·						
Test Scenarios Starting condition Train in level 1 FS All signals or marker board are at Open Proceed to permit the train to ride at full speed. Be sure all authorisations are filled in before performing the test scenarios Sequences of the test scenario Step Step description 1 Train passes the announcement BG of the transition. 1 Train passes the announcement BG of the transition is displayed. 2 Driver acknowledges the transition. Train passes the execution BG of the transition. Train switches to Level STM and the TVM Pass / Fail 3 Train passes the KVB balise with DVG function. The TVM onboard is activated ("contrôle pass / Fail	Name			Trackside datafile in	service				
Starting condition Train in level 1 FS All signals or marker board are at Open Proceed to permit the train to ride at full speed. Be sure all authorisations are filled in before performing the test scenarios Sequences of the test scenario Step Step description 1 Train passes the announcement BG of the transition. 1 Train passes the announcement BG of the transition. 2 Driver acknowledges the transition. Train passes the execution BG of transition is displayed. 2 Driver acknowledges the transition. Train passes the kVB balise with DVG function. The TVM onboard equipment is activated ("contrôle function. 3 Train passes the KVB balise with DVG function. The TVM onboard is activated ("contrôle reaction."	S1 : <si< td=""><td>gnal name of the las</td><td><mark>t signal></mark> is open preser</td><td>nting Y aspect.</td><td></td><td></td></si<>	gnal name of the las	<mark>t signal></mark> is open preser	nting Y aspect.					
Starting condition Train in level 1 FS All signals or marker board are at Open Proceed to permit the train to ride at full speed. Be sure all authorisations are filled in before performing the test scenarios Sequences of the test scenario Step description Description of what to be tested Statement Comment 1 Train passes the announcement BG of the transition. Transition is announced on the DMI. Pass / Fail Pass / Fail 2 Driver acknowledges the transition. Train switches to Level STM and the TVM onboard equipment is armed after a few seconds. Pass / Fail Pass / Fail 3 Train passes the KVB balise with DVG function. The TVM onboard is activated ("contrôle dramement" is activated), no expected reaction. Pass / Fail Pass / Fail									
All signals or marker board are at Open Proceed to permit the train to ride at full speed. Be sure all authorisations are filled in before performing the test scenarios Sequences of the test scenario Description of what to be tested Statement Comment 1 Train passes the announcement BG of the transition. Transition is announced on the DMI. Pass / Fail Pass / Fail 2 Driver acknowledges the transition. Train switches to Level STM and the TVM equipment is armed after a few seconds. Pass / Fail Pass / Fail 3 Train passes the KVB balise with DVG function. The TVM onboard is activated ("contrôle function." Pass / Fail Pass / Fail	Test Sce	enarios							
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 the announcement BG of the transition. Transition is announced on the DMI. Pass / Fail Pass / Fail 2 Driver acknowledges the transition. Train switches to Level STM and the TVM equipment is armed after a few seconds. Pass / Fail Pass / Fail 3 Train passes the KVB balise with DVG function. The TVM onboard is activated ("contrôle guipment" is activated), no expected reaction. Pass / Fail Pass / Fail	Starting	condition	Train in level 1 FS						
Sequences of the test scenario Step description Description of what to be tested Statement Comment 1 Train passes the announcement BG of the transition. Transition is announced on the DMI. Pass / Fail Pass / Fail 2 Driver acknowledges the transition. Train switches to Level STM and the TVM onboard equipment is armed after a few seconds. Pass / Fail Pass / Fail 3 Train passes the KVB balise with DVG function. The TVM onboard is activated ("contrôle d'armement" is activated), no expected reaction. Pass / Fail Pass / Fail			All signals or marker board are at Open Proceed to permit the train to ride at full speed.						
Sequences of the test scenario Step description Description of what to be tested Statement Comment 1 Train passes the announcement BG of the transition. Transition is announced on the DMI. Pass / Fail Pass / Fail 2 Driver acknowledges the transition. Train switches to Level STM and the TVM onboard equipment is armed after a few seconds. Pass / Fail Pass / Fail 3 Train passes the KVB balise with DVG function. The TVM onboard is activated ("contrôle d'armement" is activated), no expected reaction. Pass / Fail Pass / Fail									
StepStep descriptionDescription of what to be testedStatementComment1Train passes the announcement BG of the transition.Transition is announced on the DMI. If possible, confirm that the TVM onboard equipment switches to Hot Standby. 			Be sure all authoris	ations are filled in before performing the tes	t scenarios				
1Train passes the announcement BG of the transition.Transition is announced on the DMI. If possible, confirm that the TVM onboard equipment switches to Hot Standby. The request for the acknowledgment of the transition is displayed.Pass / Fail2Driver acknowledges the transition. Train passes the execution BG of the transition.Train switches to Level STM and the TVM equipment is armed after a few seconds.Pass / Fail3Train passes the KVB balise with DVG function.The TVM onboard is activated ("contrôle d'armement" is activated), no expected reaction.Pass / Fail	Sequence	ces of the test scena	rio						
the transition.If possible, confirm that the TVM onboard equipment switches to Hot Standby. The request for the acknowledgment of the transition is displayed.Pass / Fail2Driver acknowledges the transition. Train passes the execution BG of the transition.Train switches to Level STM and the TVM equipment is armed after a few seconds.Pass / Fail3Train passes the KVB balise with DVG function.The TVM onboard is activated ("contrôle d'armement" is activated), no expected reaction.Pass / Fail	Step	Step description		Description of what to be tested	Statement	Comment			
equipment switches to Hot Standby. The request for the acknowledgment of the transition is displayed.Pass / Fail2Driver acknowledges the transition. Train passes the execution BG of the transition.Train switches to Level STM and the TVM equipment is armed after a few seconds.Pass / Fail3Train passes the KVB balise with DVG function.The TVM onboard is activated ("contrôle d'armement" is activated), no expected reaction.Pass / Fail	1	Train passes the	announcement BG of	Transition is announced on the DMI.	Pass / Fail				
Image: Constraint of the section is displayed.The request for the acknowledgment of the transition is displayed.Image: Constraint of the section and the transition.Train switches to Level STM and the TVM equipment is armed after a few seconds.Image: Constraint of transition.Train passes the execution BG of the transition.Image: Constraint of transition.Train passes the KVB balise with DVG function.Image: Constraint of transition.The TVM onboard is activated ("contrôle d'armement" is activated), no expected reaction.Image: Constraint of transition.The TVM onboard is activated), no expected reaction.		the transition.		If possible, confirm that the TVM onboard					
Image: Constraint of the second sec				equipment switches to Hot Standby.					
2 Driver acknowledges the transition. Train passes the execution BG of the transition. Train switches to Level STM and the TVM equipment is armed after a few seconds. Pass / Fail 3 Train passes the KVB balise with DVG function. The TVM onboard is activated ("contrôle d'armement" is activated), no expected reaction. Pass / Fail				The request for the acknowledgment of the					
Train passes the execution BG of the transition. equipment is armed after a few seconds. 3 Train passes the KVB balise with DVG function. The TVM onboard is activated ("contrôle d'armement" is activated), no expected reaction. Pass / Fail				transition is displayed.					
transition. Train passes the KVB balise with DVG function. The TVM onboard is activated ("contrôle d'armement" is activated), no expected reaction. Pass / Fail	2	Driver acknowledges the transition.		Train switches to Level STM and the TVM	Pass / Fail				
3 Train passes the KVB balise with DVG The TVM onboard is activated ("contrôle function. d'armement" is activated), no expected reaction.		•		equipment is armed after a few seconds.					
function. d'armement" is activated), no expected reaction.									
reaction.	3		KVB balise with DVG						
		function.		,					
				reaction.					



4.10.2 Scenario diagram





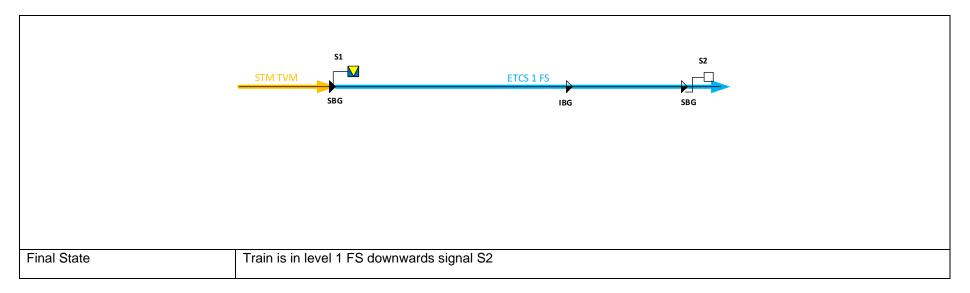
4.11 Test ESC_TR_7.1: Transition TVM430 to Level 1 FS

4.11.1 Description

ID		Date			Location / Line		
ESC_TR	7.1	<dd mm="" yyyy=""></dd>			<line></line>		
Descripti	on	Functionalities tested	:				
		- ESC_TR_7:	Fransition TVM to ETCS1 FS				
Signal pa	assed						
Name			Trackside datafile	e in service			
S1 : <sig< td=""><td>gnal name of the last</td><td>marker board> is oper</td><td>۱.</td><td></td><td></td></sig<>	gnal name of the last	marker board> is oper	۱.				
S2 : <sig< td=""><td>gnal name of the first</td><td>: <mark>signal></mark> is open.</td><td></td><td></td><td></td></sig<>	gnal name of the first	: <mark>signal></mark> is open.					
Test Sce	enarios						
Starting of	condition	Train in level STM under TVM supervision					
		All signals or marker board are at Open Proceed to permit the train to ride at full speed.					
		Be sure all authorisations are filled in before performing the test scenarios					
Sequenc	es of the test scenar	io					
Step	Step description		Description of what to be tested	Statement	Comment		
1	Train passes S1 marker board and		Transition is announced on the DMI.	Pass / Fail			
	receives a MA and an immediate level		The request for the acknowledgment of t	the			
	transition.		transition is displayed.				
2	Driver acknowledges the transition.		Train switches to level 1 FS.	Pass / Fail			
3	Train passes signa	al S2	Train continues in level 1 FS.	Pass / Fail			
Test scer	nario finished			•			



4.11.2 Scenario diagram





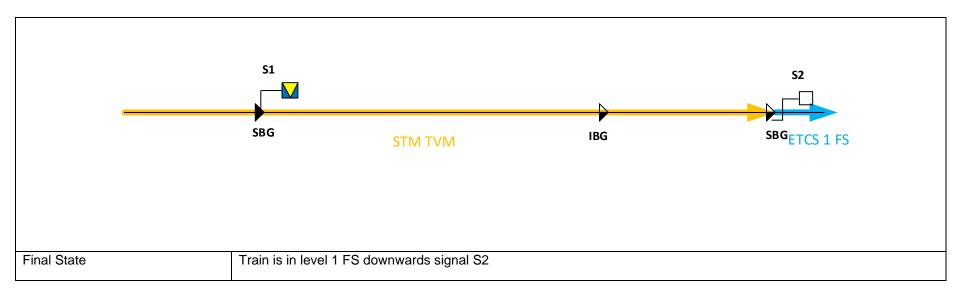
4.12 Test ESC_TR_7.2: Transition TVM430 to Level 1 FS

4.12.1 Description

ID		Date			Location / Line			
ESC_TF	R_7.2	<dd mm="" yyyy=""></dd>	<line></line>					
Descript	tion	Functionalities tested :						
		- ESC_TR_7: Transition	TVM to ETCS1 FS on S2					
Signal p	assed							
Name					Trackside datafile in service			
S1 : <si< td=""><td>gnal name of th</td><td>e last marker board> is closed (v</td><td>vith override lamp on).</td><td></td><td></td></si<>	gnal name of th	e last marker board> is closed (v	vith override lamp on).					
S2 : <si< td=""><td>gnal name of th</td><td>e first signal> is open.</td><td></td><td></td><td></td></si<>	gnal name of th	e first signal> is open.						
Test Sce	enarios							
Starting	condition	Train in level STM under TVM s	supervision					
		The marker board S1 is closed, signal S2 is open.						
		Be sure all authorisations are	filled in before performing the test	scenarios				
Sequend	ces of the test s	scenario						
Step	Step descript	tion	Description of what to be tested	Statement	Comment			
1	Train passes	S1 marker board with override	Train continues in STM TVM	Pass / Fail				
	and receives	no ETCS transition						
2	Train passes KVB_FGV balise		"Contrôle armement" is deactivated.	Pass / Fail				
3	Train passes TVM_ESNCB loop		TVM cab signalling turns off.	Pass / Fail				
4	Train passes	s signal S2 and receives a MA	Train switches to level 1 FS. The	Pass / Fail				
	and an imme	diate level transition.	request for the acknowledgment of					
			the transition is displayed.					
5	Driver ackno	wledges the transition.	Train continues in level 1 FS.	Pass / Fail				
Test sce	enario finished							



4.12.2 Scenario diagram





4.13 Test ESC_TR_12: Transition ETCS1 FS to STM TBL1+

4.13.1 Description

ID		Date				Location / Line				
ESC_T	R_12	<dd mm="" yyyy=""></dd>			<line></line>					
Descrip	tion	Functionalities tested - ESC_TR_12	: : Transition ETCS1 FS to	STM TBL1+		i				
			Remark: if test case is executed in CVT track, a text message "=> S *" is displayed between from reception of the transition up to the first TBL1+ signal. An acknowledgment of the text message is required.							
Signal p	bassed									
Name				Trackside datafile in	service					
S1 : <s< td=""><td><mark>ignal name></mark> is open</td><td>. It is the last ETCS1 FS</td><td>signal.</td><td></td><td></td><td></td></s<>	<mark>ignal name></mark> is open	. It is the last ETCS1 FS	signal.							
Test Sc	enarios									
	condition	Train is in level 1 mor	te ES unwards signal S1							
Starting	condition	Train is in level 1 mode FS upwards signal S1.								
0	and of the stant second		ations are filled in before	e performing the test	scenarios					
	ces of the test scena	ario	Description of what to he	tootod	Ctotomont	Comment				
Step	Step description	unal O1 and the lavel	Description of what to be		Statement	Comment				
1	Train passes signal S1 and the level				Pass / Fail					
	transition announcement fixed BG at the		STM. A level transition announcement is							
	reference speed of the line.		displayed on the DMI. Acknowledgement is possible about 5							
			seconds after receiving the announcement.							
2	Driver acknowledge the transition and		Train switches to level S		Pass / Fail					
	train passes	the level transition	The possible STM are in descending order of							
	execution BG.		priority : TBL1+, TBL2, T	BL1, Memor, KVB.						

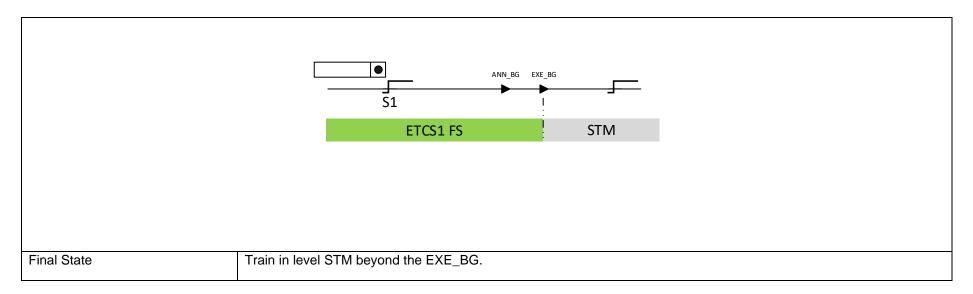
PSI (TC,ETCSsys.L1FS,z) ESC TST DSC 1.2 E.docx



Test scenario finished						



4.13.2 Scenario diagram





4.14 Test ESC_TR_15: Transition STM TBL1+ to ETCS1 FS

4.14.1 Description

ID		Date				Location / Line		
ESC_TR	R_15	<dd mm="" yyyy=""></dd>	<dd mm="" yyyy=""></dd>					
Descript	tion	Functionalities tes	sted :			·		
		- ESC_TR	_15 Transition STM TBL	1+ to ETCS1 FS				
		Remark : the tran CR1120.	sition STM to ETCS1 FS wi	th an announcemer	nt of transition at the i	irst signal is tested in test ESC_L1FS		
Signal pa	assed							
Name				Trackside datafi	le in service			
S1 : <si< td=""><td>gnal name> is op</td><td>en. It is the first ETCS</td><td>1 signal</td><td></td><td></td><td></td></si<>	gnal name> is op	en. It is the first ETCS	1 signal					
S2 : <si< td=""><td>gnal name> is op</td><td>en</td><td></td><td></td><td></td><td></td></si<>	gnal name> is op	en						
Test Sce	enarios							
Starting	condition	Train is in level S	Train is in level STM in rear of signal S1.					
		The possible STM	The possible STM are in descending order of priority: TBL1+, TBL2, TBL1, Memor, KVB.					
Be sure all authorisation			prisations are filled in befo	ore performing the	e test scenarios			
Sequence	ces of the test sce	enario						
Step	Step description		Description of what to	be tested	Statement	Comment		
1	Train passes signal S1		Train switches to level	Train switches to level 1 FS mode.				
2	Drivers acknowledges transition		Train remains in level	Train remains in level 1 FS mode.				
Test sce	enario finished		1		1			



4.14.2 Scenario diagram

