

ERTMS/ETCS – Class 1

FFFIS STM test cases of Functional Identity 012

Override

Total: 8 Test cases

REF : SUBSET-074-2-12
ISSUE : 1.0.0
DATE : 13.10.2005

Company	Technical Approval	Management approval
ALCATEL		
ALSTOM		
ANSALDO SIGNAL		
BOMBARDIER		
INVENSYS RAIL		
SIEMENS		

Modification History

Issue Number Date	Section Number	Modification / Description	Author
0.0.1 2004-08-26	All	Document created, including the Test Case Diagram and frames for the Test Cases.	P. Lührs (Siemens AG)
0.0.2 2004-09-17	"Test Case Diagram" "Test Cases"	Test Case Diagram updated according to review comments. Test Case names updated and additional frames for the Test Cases added according to the new Test Case Diagram.	P. Lührs (Siemens AG)
0.0.3 2004-10-19	"Test Cases"	Test case 12a.0.1.0, Test case 12b.0.1.0, Test case 12c.0.1.0 specified. Balise information added for Test case 12b.0.2.0.0.0 and Test case 12c.0.2.0.0.0.	P. Lührs (Siemens AG)
0.0.4 2004-11-02	"Test Case Diagram" "Test Cases"	Test Case Diagram updated according to review comments (no distinction between red and green signal, new branches for transition to STM introduced). Test Case numbers updated due to new Test Case Diagram. Starting condition „TIU Sleeping Status“ changed to “not Sleeping” for all Test Cases. Connection information for all transmitted PROFIBUS messages added in the Test Cases. Test case 12a.0.2.0.0.0, Test case 12b.0.2.0.0.0, Test case 12b.0.3.0.0.0.0.0, Test case 12c.0.2.0.0.0 and Test case 12c.0.3.0.0.0.0.0 specified (all Test Cases created).	P. Lührs (Siemens AG)
0.0.5 2004-11-10	"Test Case Diagram" "Test Cases"	Test Case Diagram updated according to review comments (no STM state transition DA to CS in Test case 12a.0.2.0.0.0, number of STMs in Test Case). Test Cases updated according to review comments (number of STMs in Test Case, Transition Acknowledgement has to be displayed and removed from the DMI, Order of the test steps at the transition border changed (message “state order to STM” shall be in the same step as the reception of the border balises), Test case 12b.0.2.0.0.0 and Test case 12c.0.2.0.0.0 also check that ETCS does not apply the brakes due to a Trip situation at the transition border (test case header changed), in the Test Cases 12b.xxx the override procedure is activated via the STM and not the ETCS (test case header changed)). Message E3 in Test case 12b.0.3.0.0.0.0.0Test case 12c.0.3.0.0.0.0.0 does not include packet STM-5 (ETCS status data).	P. Lührs (Siemens AG)
0.0.6 2004-11-24	"Test Cases"	Test Cases updated according to review comments (T_NVOVTRP, not transmitted values are not included in telegram specifications, ...). "Reference Time Data" added to the end conditions.	P. Lührs (Siemens AG)

© This document is the property of

ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

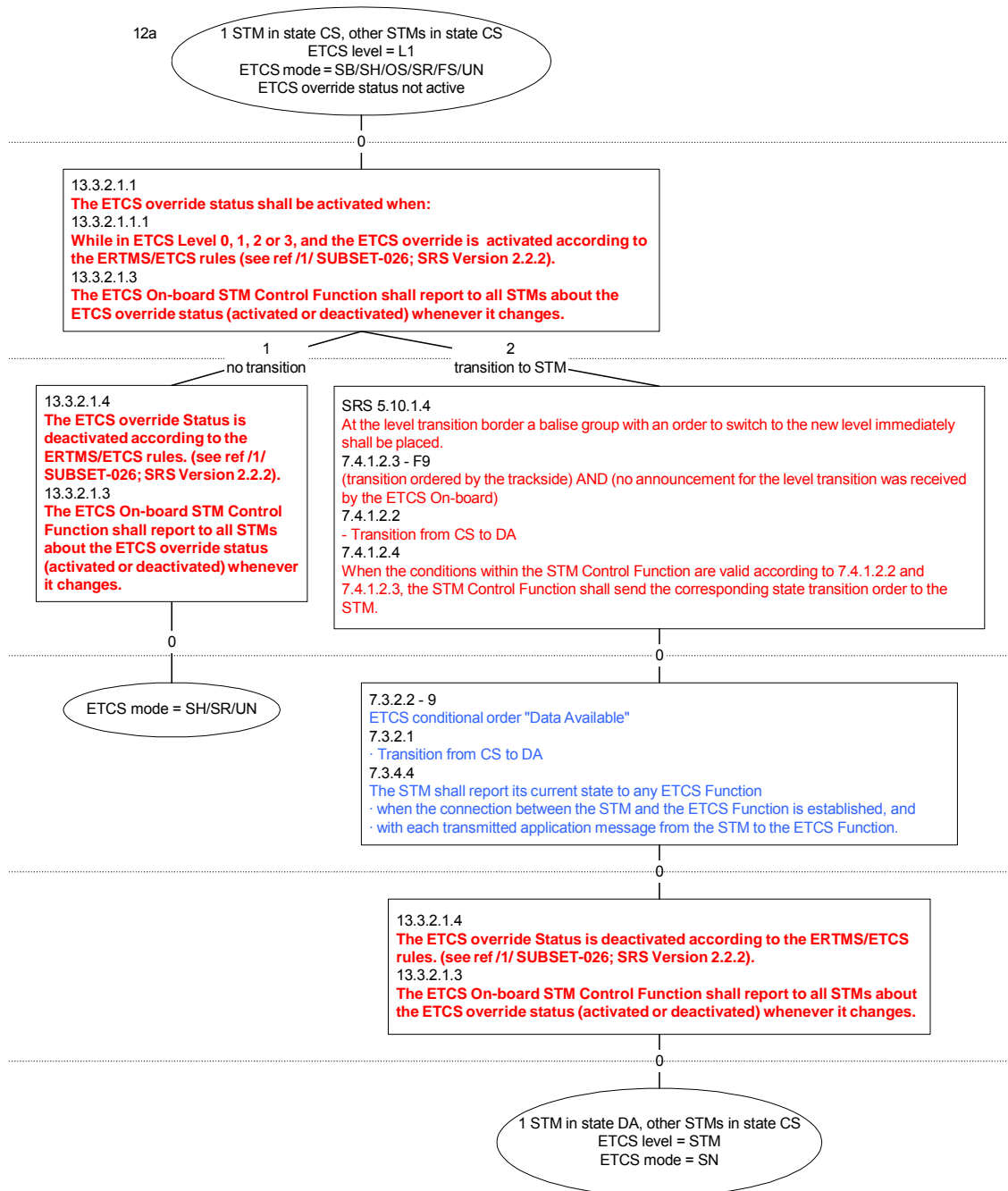
ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

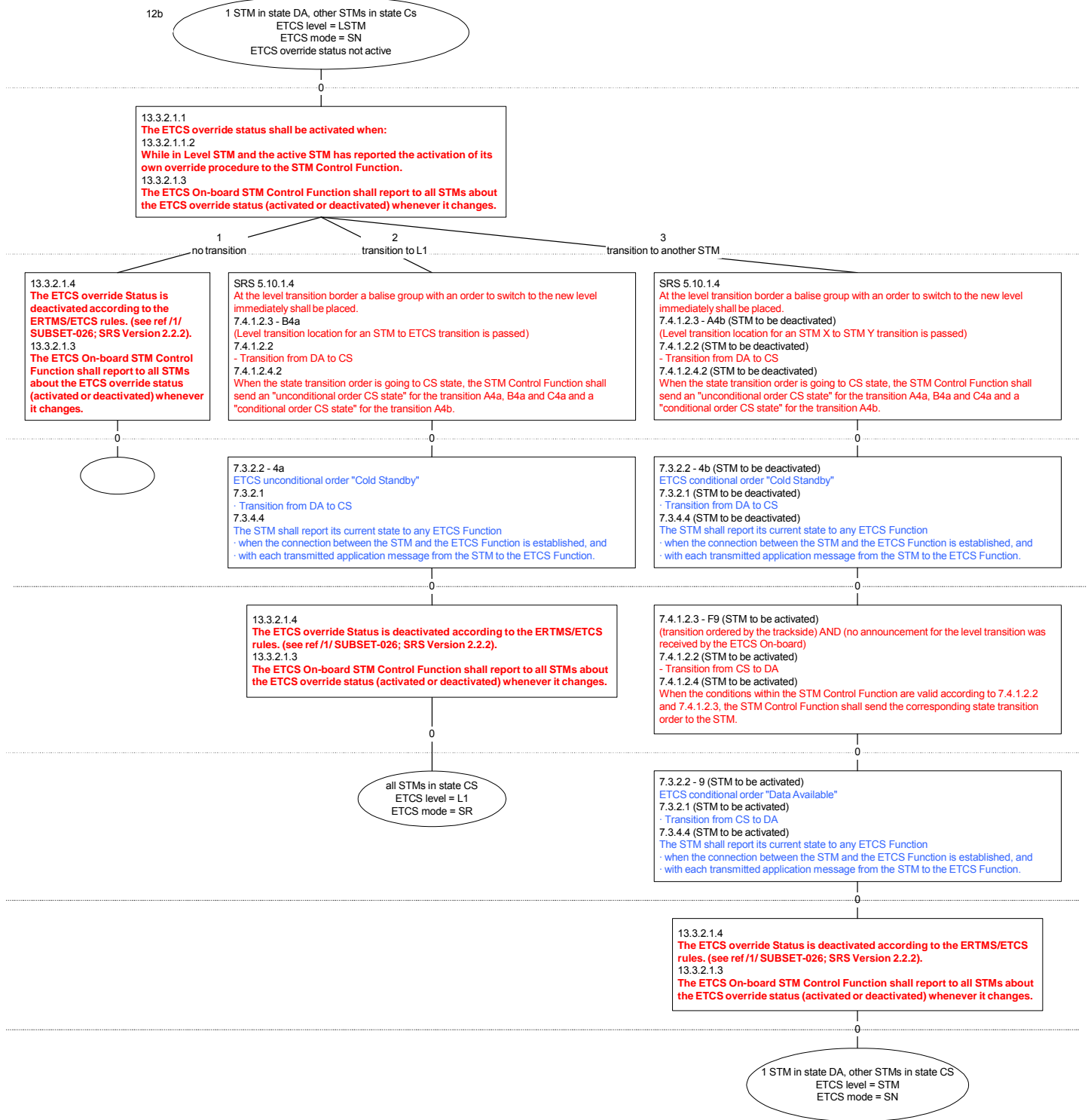
0.1.0 2004-12-15		Editorial changes for preliminary delivery.	P. Lührs (Siemens AG)
0.1.1 2005-01-26		Title updated	P. Lührs (Siemens AG)
0.2.0 2005-01-27		Editorial changes for delivery.	P. Lührs (Siemens AG)
1.0.0 13.10.2005		Editorial changes for delivery	Invensys Rail

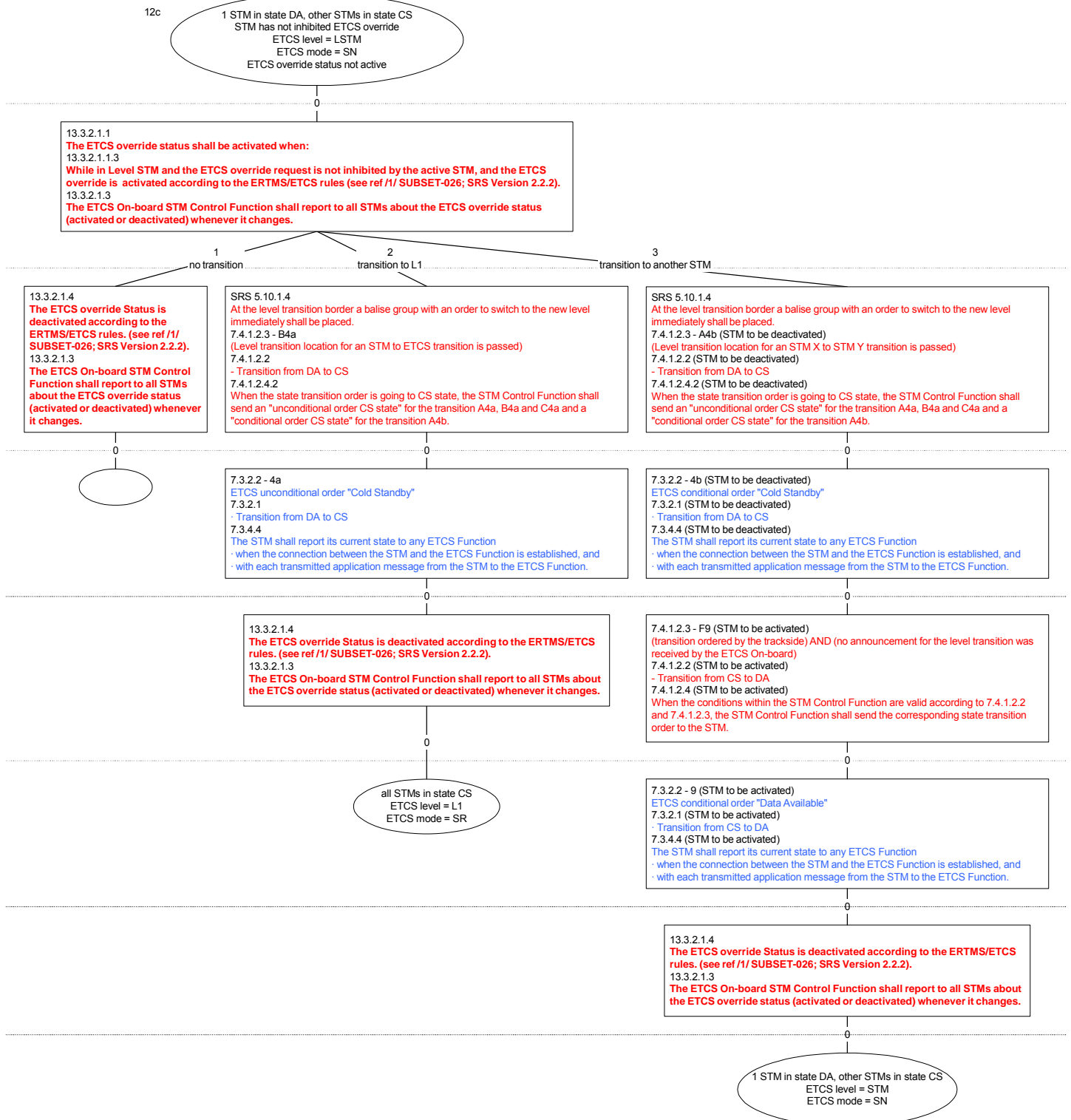
Table of Contents

Test Case Diagrams.....	5
Test Cases	8
Test case 12a.0.1.0	8
Test case 12a.0.2.0.0.0	13
Test case 12b.0.1.0	22
Test case 12b.0.2.0.0.0	27
Test case 12b.0.3.0.0.0.0.0	38
Test case 12c.0.1.0	48
Test case 12c.0.2.0.0.0.....	54
Test case 12c.0.3.0.0.0.0.0.....	65

TEST CASE DIAGRAMS







TEST CASES

Test case 12a.0.1.0

TEST CASE HEADER	
Test case Identification	Override Procedure
	Check the transmission of the Override Status to the STMs while the ETCS On-board is in an ETCS level and the ETCS Override Status is activated by the ETCS On-board according to the ERTMS / ETCS rules. No transition shall occur in this test.
	Note: In this test case, the override procedure is activated at the ETCS according to the ERTMS/ETCS rules.
ETCS Requirements Tested	SUBSET-035 13.3.2.1.1, 13.3.2.1.1.1, 13.3.2.1.3, 13.3.2.1.4
	SUBSET-026 none
STM Requirements Tested	SUBSET-035 none
	SUBSET-026 none
Packets Transmitted via FFFIS STM	Packet STM-7
Comments and constraints	<p>The objective of this test is to check that the ETCS On-board (STM Control Function) in an ETCS level reports the ETCS Override Status to all connected STMs whenever the ETCS Override Status changes according to the ERTMS / ETCS rules (see SUBSET-026, ERTMS / ETCS - Class 1 System Requirements Specification).</p> <p>To perform this test case it is necessary to connect up to the maximum number of STMs (see SUBSET-059, Performance Requirements for STMs) – at least 2 STMs -, which shall be of the type “STM National”, to the ETCS On-board.</p>

Starting Conditions	Value	Comments
STM State	CS	valid for all STMs used within this Test Case

ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

Starting Conditions	Value	Comments
ETCS Mode	FS	
ETCS Level	1	
Train State	standstill	
Train Data	valid	
Additional Data	valid	
National Values	valid	
STM Control Function Connection	established	valid for all STMs used within this Test Case
DMI Connection	not established	valid for all STMs used within this Test Case
Odometry Data	transmitted	valid for all STMs used within this Test Case
Reference Time Data	transmitted	valid for all STMs used within this Test Case
TIU Connection	not relevant	valid for all STMs used within this Test Case
BIU Connection	not relevant	valid for all STMs used within this Test Case
JRU Connection	not relevant	valid for all STMs used within this Test Case
Other connections	not relevant	valid for all STMs used within this Test Case
TIU Regenerative Brake Command	not relevant	
TIU Magnetic Shoes Command	not relevant	
TIU Eddy Current Brake Command	not relevant	
TIU Inhibit Passenger Emergency Brake Command	not relevant	
TIU Pantograph Command	not relevant	
TIU Air Tightness Command	not relevant	
TIU Main Switch / Circuit Breaker Command	not relevant	
TIU Traction Cut Off Command	not relevant	
TIU Sleeping Status	not Sleeping	
TIU Traction Cut Off Status	not relevant	
TIU Direction Controller Position Status	not relevant	
TIU Cab Status (Desk Status)	desk A opened	
BIU Status	not relevant	
BIU Emergency Brake Command	not relevant	
BIU Service Brake Command	not relevant	
BIU Emergency Brake Status	release	
BIU Service Brake Status	release	
Subset-026	1.0	valid for all STMs used within this Test Case

© This document is the property of

ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

Starting Conditions		Value	Comments
STM Version Number	Subset-026	1.0	valid for all STMs used within this Test Case
	Subset-058	3.0.z	valid for all STMs used within this Test Case
	Subset-056	3.0.z	valid for all STMs used within this Test Case
	Subset-057	3.0.z	valid for all STMs used within this Test Case
	Subset-026	1.0	
	Subset-035	3.0.z	
	Subset-058	3.0.z	
	Subset-056	3.0.z	
	Subset-057	3.0.z	
Track Adhesion		not relevant	

ETCS Test Case

Step	Description/Comments	Input I/F	Input Action	DUT	Output I/F	Output action
1	“Override Request” by the driver at standstill so that the “Override EOA” procedure is activated by the ETCS On-board. Time: T0	DMI	Override button activated by the driver	ETCS	Prof	STM Control Connection: Message-E1 (STM-7 – override status) with an NID_STM of one STM used within this Test Case – transmitted to all STMs used within this Test Case -
2	Time: T0 + T_NVOVTRP (national value) The “Override EOA” procedure is deactivated when the “max. time for train trip suppression when override EoA function is triggered” (national value) is passed.	-	-	ETCS	Prof	STM Control Connection: Message-E2 (STM-7 – override status) with an NID_STM of one STM used within this Test Case – transmitted to all STMs used within this Test Case -

Message-E1 (STM-7 – override status): ETCS STM Control Function → STM			
VARIABLE	Length	VALUE	COMMENTS
NID_STM	8	FINITE VALUE	any valid value for NID_STM (according to the STMs used within this Test Case)
L_MESSAGE	8	COMPUTED	message length
NID_PACKET	8	7	Override status (STM-7)

Message-E1 (STM-7 – override status): ETCS STM Control Function → STM			
VARIABLE	Length	VALUE	COMMENTS
L_PACKET	13	COMPUTED	packet length
Q_OVREOA_STATUS	1	1	ETCS override status active
Padding bits	COMPUTED	COMPUTED	

Message-E2 (STM-7 – override status): ETCS STM Control Function → STM			
VARIABLE	Length	VALUE	COMMENTS
NID_STM	8	FINITE VALUE	any valid value for NID_STM (according to the STMs used within this Test Case)
L_MESSAGE	8	COMPUTED	message length
NID_PACKET	8	7	Override status (STM-7)
L_PACKET	13	COMPUTED	packet length
Q_OVREOA_STATUS	1	0	ETCS override status not active
Padding bits	COMPUTED	COMPUTED	

End Conditions	Value	Comments
STM State	unchanged	
ETCS Mode	SR	
ETCS Level	unchanged	
Train State	unchanged	
Train Data	unchanged	
Additional Data	unchanged	
National Values	unchanged	
STM Control Function Connection	unchanged	
DMI Connection	unchanged	
Odometry Data	unchanged	
Reference Time Data	unchanged	
TIU Connection	unchanged	
BIU Connection	unchanged	
JRU Connection	unchanged	
Other connections	unchanged	
TIU Regenerative Brake Command	unchanged	
TIU Magnetic Shoes Command	unchanged	
TIU Eddy Current Brake Command	unchanged	

© This document is the property of

ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

TIU Inhibit Passenger Emergency Brake Command	unchanged	
TIU Pantograph Command	unchanged	
TIU Air Tightness Command	unchanged	
TIU Main Switch / Circuit Breaker Command	unchanged	
TIU Traction Cut Off Command	unchanged	
TIU Sleeping Status	unchanged	
TIU Traction Cut Off Status	unchanged	
TIU Direction Controller Position Status	unchanged	
TIU Cab Status (Desk Status)	unchanged	
BIU Status	unchanged	
BIU Emergency Brake Command	unchanged	
BIU Service Brake Command	unchanged	
BIU Emergency Brake Status	unchanged	
BIU Service Brake Status	unchanged	
STM Version Number	unchanged	
ETCS Version Number	unchanged	
Track Adhesion	unchanged	

Test case 12a.0.2.0.0.0

TEST CASE HEADER	
Test case Identification	Override Procedure
	Check the transmission of the Override Status to the STMs while the ETCS On-board is in an ETCS level and the ETCS Override Status is activated by the ETCS On-board according to the ERTMS / ETCS rules. A transition to an ETCS level STM shall be passed while the ETCS Override Status is active.
	Note: In this test case, the override procedure is activated at the ETCS according to the ERTMS/ETCS rules.
ETCS Requirements Tested	SUBSET-035 13.3.2.1.1, 13.3.2.1.1.1, 13.3.2.1.3, 13.3.2.1.4
	SUBSET-026 none
STM Requirements Tested	SUBSET-035 none
	SUBSET-026 none
Packets Transmitted via FFFIS STM	Packet STM-7
Comments and constraints	<p>The objective of this test is to check</p> <ul style="list-style-type: none"> that the ETCS On-board (STM Control Function) in an ETCS level reports the ETCS Override Status to all connected STMs whenever the ETCS Override Status changes according to the ERTMS / ETCS rules (see SUBSET-026, ERTMS / ETCS - Class 1 System Requirements Specification), and that the ETCS On-board (STM Control Function) reports the deactivation of the ETCS Override Status to all connected STMs whenever the ETCS Override Status is deactivated according to the ERTMS / ETCS rules (see SUBSET-026, ERTMS / ETCS - Class 1 System Requirements Specification). <p>To perform this test case it is necessary to connect up to the maximum number of STMs (see SUBSET-059, Performance Requirements for STMs) – at least 2 STMs -, which shall be of the type “STM National”, to the ETCS On-board.</p>

ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

Starting Conditions	Value	Comments
STM State	CS	valid for all STMs used within this Test Case
ETCS Mode	FS	
ETCS Level	1	
Train State	moving	train speed shall be 36 km/h
Train Data	valid	
Additional Data	valid	
National Values	valid	
STM Control Function Connection	established	valid for all STMs used within this Test Case
DMI Connection	not established	valid for all STMs used within this Test Case
Odometry Data	transmitted	valid for all STMs used within this Test Case
Reference Time Data	transmitted	valid for all STMs used within this Test Case
TIU Connection	not relevant	valid for all STMs used within this Test Case
BIU Connection	not relevant	valid for all STMs used within this Test Case
JRU Connection	not relevant	valid for all STMs used within this Test Case
Other connections	not relevant	valid for all STMs used within this Test Case
TIU Regenerative Brake Command	not relevant	
TIU Magnetic Shoes Command	not relevant	
TIU Eddy Current Brake Command	not relevant	
TIU Inhibit Passenger Emergency Brake Command	not relevant	
TIU Pantograph Command	not relevant	
TIU Air Tightness Command	not relevant	
TIU Main Switch / Circuit Breaker Command	not relevant	
TIU Traction Cut Off Command	not relevant	
TIU Sleeping Status	not Sleeping	
TIU Traction Cut Off Status	not relevant	
TIU Direction Controller Position Status	not relevant	
TIU Cab Status (Desk Status)	desk A opened	
BIU Status	not relevant	
BIU Emergency Brake Command	not relevant	
BIU Service Brake Command	not relevant	
BIU Emergency Brake Status	release	
BIU Service Brake Status	release	

© This document is the property of

ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

Starting Conditions		Value	Comments
STM Version Number	Subset-026	1.0	valid for all STMs used within this Test Case
	Subset-035	3.0.z	valid for all STMs used within this Test Case
	Subset-058	3.0.z	valid for all STMs used within this Test Case
	Subset-056	3.0.z	valid for all STMs used within this Test Case
	Subset-057	3.0.z	valid for all STMs used within this Test Case
ETCS Version Number	Subset-026	1.0	
	Subset-035	3.0.z	
	Subset-058	3.0.z	
	Subset-056	3.0.z	
	Subset-057	3.0.z	
Track Adhesion		not relevant	

ETCS Test Case

Step	Description/Comments	Input I/F	Input Action	DUT	Output I/F	Output action
-	Initial Condition: Set the National Values for the “Override EoA” procedure to defined values suitable for this Test Case.	BTM	Telegram-B1 (3 – National Values) Telegram-B2	-	-	-
1	“Override Request” by the driver so that the “Override EOA” procedure is activated by the ETCS On-board. Time: T0	DMI	Override button activated by the driver	ETCS	Prof	STM Control Connection: Message-E1 (STM-7 – override status) with an NID_STM of one STM used within this Test Case – transmitted to all STMs used within this Test Case -
2	Time: T0 + 10 s A transition border for a transition to ETCS level STM is passed.	BTM	Telegram-B3 (41 - Level Transition Order) Telegram-B2	ETCS	DMI	Transition acknowledgement request displayed
	ETCS orders the announced STM to the state DA.	-	-	ETCS	Prof	STM Control Connection: Message-E2 (STM-14 – state order to STM, STM-5 - ETCS status data) with the NID_STM of the STM announced in Telegram-B3

© This document is the property of

ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

Step	Description/Comments	Input I/F	Input Action	DUT	Output I/F	Output action
3	Time: T0 + 11 s Driver acknowledges the transition	DMI	Driver acknowledges Transition	ETCS	DMI	Transition acknowledgement request removed-
4	Time: T0 + 13 s STM reports state DA in due time.	Prof	STM Control Connection: Message-S (STM-15 – state report from STM)	-	-	-
5	Time: T0 + T_60 s The “Override EOA” procedure is deactivated when the “max. time for train trip suppression when override EoA function is triggered” (national value) is passed.	-	-	ETCS	Prof	STM Control Connection: Message-E3 (STM-7 – override status) with an NID_STM of one STM used within this Test Case – transmitted to all STMs used within this Test Case -

Telegram-B1: Balise-Information (National Values)			
VARIABLE	Length	VALUE	COMMENTS
Q_UPDOWN	1	1	Uplink
M_VERSION	7	FINITE VALUE	SRS version
Q_MEDIA	1	0	Balise
N_PIG	3	0	1 st Balise
N_TOTAL	3	1	2 Balise in group
M_DUP	2	0	no duplicates
M_MCOUNT	8	255	identical Value for all balises of the group
NID_C	10	FINITE VALUE	ID of country / region
NID_BG	14	FINITE VALUE	ID of Balise Group
Q_LINK	1	1	linked
NID_PACKET	8	3	Packet 3 – National Values
Q_DIR	2	1	nominal direction
L_PACKET	13	COMPUTED	
Q_SCALE	2	1	1 m
D_VALIDNV	15	0	the national values shall be valid direct after reception
N_ITER	5	0	no national area(s)
V_NVSHUNT	7	6	30 km/h (default value)
V_NVSTFF	7	8	40 km/h (default value)

© This document is the property of

ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

Telegram-B1: Balise-Information (National Values)			
VARIABLE	Length	VALUE	COMMENTS
V_NVONSIGHT	7	6	30 km/h (default value)
V_NVUNFIT	7	20	100 km/h (default value)
V_NVREL	7	8	40 km/h (default value)
D_NVROLL	15	2	2 m (default value)
Q_NVSRBKTRG	1	1	yes (default value)
Q_NVEMRRLS	1	0	release only at standstill possible (default value)
V_NVALLOWOVTRP	7	20	100 km/h
V_NVSUPOVTRP	7	20	100 km/h
D_NVOVTRP	15	2000	2000 m
T_NVOVTRP	8	60	60 s
D_NVPOTRP	15	200	200 m (default value)
M_NVCONTACT	2	10B	no reaction (default value)
T_NVCONTACT	8	255	∞ (default value)
M_NVDERUN	1	1	yes (default value)
D_NVSTFF	15	32767	∞ (default value)
Q_NVDRIVER_ADHES	1	0	not allowed (default value)
NID_PACKET	8	11111111	Packet 255 – End of information

Telegram-B2: Balise-Information			
VARIABLE	Length	VALUE	COMMENTS
Q_UPDOWN	1	1	uplink
M_VERSION	7	FINITE VALUE	SRS version
Q_MEDIA	1	0	Balise
N_PIG	3	1	2 nd Balise
N_TOTAL	3	1	2 Balise in group
M_DUP	2	0	no duplicates
M_MCOUNT	8	255	identical Value for all balises of the group
NID_C	10	FINITE VALUE	ID of country / region
NID_BG	14	FINITE VALUE	ID of Balise Group
Q_LINK	1	1	linked
NID_PACKET	8	11111111	Packet 255 – End of information

© This document is the property of
ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

Message-E1 (STM-7 – override status): ETCS STM Control Function → STM

VARIABLE	Length	VALUE	COMMENTS
NID_STM	8	FINITE VALUE	any valid value for NID_STM (according to the STMs used within this Test Case)
L_MESSAGE	8	COMPUTED	message length
NID_PACKET	8	7	Override status (STM-7)
L_PACKET	13	COMPUTED	packet length
Q_OVREOA_STATUS	1	1	ETCS override status active
Padding bits	COMPUTED	COMPUTED	

Telegram-B3: Balise-Information (Level Transition Order)

VARIABLE	Length	VALUE	COMMENTS
Q_UPDOWN	1	1	Uplink
M_VERSION	7	FINITE VALUE	SRS version
Q_MEDIA	1	0	Balise
N_PIG	3	0	1 st Balise
N_TOTAL	3	1	2 Balise in group
M_DUP	2	0	no duplicates
M_MCOUNT	8	255	identical Value for all balises of the group
NID_C	10	FINITE VALUE	ID of country / region
NID_BG	14	FINITE VALUE	ID of Balise Group
Q_LINK	1	1	linked
NID_PACKET	8	41	Packet 41 – Level Transition Order
Q_DIR	2	1	nominal direction
L_PACKET	13	COMPUTED	
Q_SCALE	2	1	1 m
D_LEVELTR	15	32767	now (the level transition is performed upon receipt of the order)
M_LEVELTR	3	1	Level STM
NID_STM	8	FINITE VALUE	any valid value for NID_STM (according to the STM announced in Telegram-B3)
L_ACKLEVELTR	15	0	acknowledgement area starts at the level transition border
N_ITER	5	0	no mixed level area
NID_PACKET	8	11111111	Packet 255 – End of information

Message-E2 (STM-14 – state order to STM, STM-5 - ETCS status data): ETCS STM Control Function → STM

VARIABLE	Length	VALUE	COMMENTS
NID_STM	8	FINITE VALUE	any valid value for NID_STM (according to the STM announced in Telegram-B3)

© This document is the property of

ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

Message-E2 (STM-14 – state order to STM, STM-5 - ETCS status data): ETCS STM Control Function → STM			
VARIABLE	Length	VALUE	COMMENTS
L_MESSAGE	8	COMPUTED	message length
NID_PACKET	8	14	State order to STM (STM-14)
L_PACKET	13	COMPUTED	packet length
NID_STMSTATEORDER	4	7	state DA
NID_PACKET	8	5	ETCS status data (STM-5)
L_PACKET	13	COMPUTED	packet length
M_LEVEL	3	1	Level STM
NID_STM	8	FINITE VALUE	any valid value for NID_STM (according to the STM announced in Telegram-B3)
M_MODE	4	13	SN (STM National)
Padding bits	COMPUTED	COMPUTED	

Message-S (STM-15 – state report from STM): STM → ETCS STM Control Function			
VARIABLE	Length	VALUE	COMMENTS
NID_STM	8	FINITE VALUE	any valid value for NID_STM (according to the STM announced in Telegram-B3)
L_MESSAGE	8	COMPUTED	message length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	COMPUTED	packet length
NID_STMSTATE	4	7	state DA
Padding bits	COMPUTED	COMPUTED	

Message-E3 (STM-7 – override status): ETCS STM Control Function → STM			
VARIABLE	Length	VALUE	COMMENTS
NID_STM	8	FINITE VALUE	any valid value for NID_STM (according to the STMs used within this Test Case)
L_MESSAGE	8	COMPUTED	message length
NID_PACKET	8	7	Override status (STM-7)
L_PACKET	13	COMPUTED	packet length
Q_OVREOA_STATUS	1	0	ETCS override status not active
Padding bits	COMPUTED	COMPUTED	

End Conditions	Value	Comments
STM State	DA	all other STMs used within this Test Case in the state CS
ETCS Mode	SN	

© This document is the property of

ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

ETCS Level	STM	
Train State	unchanged	
Train Data	unchanged	
Additional Data	unchanged	
National Values	changed	data for override is changed
STM Control Function Connection	unchanged	
DMI Connection	unchanged	
Odometry Data	unchanged	
Reference Time Data	unchanged	
TIU Connection	unchanged	
BIU Connection	unchanged	
JRU Connection	unchanged	
Other connections	unchanged	
TIU Regenerative Brake Command	unchanged	
TIU Magnetic Shoes Command	unchanged	
TIU Eddy Current Brake Command	unchanged	
TIU Inhibit Passenger Emergency Brake Command	unchanged	
TIU Pantograph Command	unchanged	
TIU Air Tightness Command	unchanged	
TIU Main Switch / Circuit Breaker Command	unchanged	
TIU Traction Cut Off Command	unchanged	
TIU Sleeping Status	unchanged	
TIU Traction Cut Off Status	unchanged	
TIU Direction Controller Position Status	unchanged	
TIU Cab Status (Desk Status)	unchanged	
BIU Status	unchanged	
BIU Emergency Brake Command	unchanged	
BIU Service Brake Command	unchanged	
BIU Emergency Brake Status	unchanged	
BIU Service Brake Status	unchanged	
STM Version Number	unchanged	
ETCS Version Number	unchanged	
Track Adhesion	unchanged	

© This document is the property of

ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

Test case 12b.0.1.0

TEST CASE HEADER	
Test case Identification	Override Procedure
	Check the transmission of the Override Status to the STMs while the ETCS level is Level STM and the ETCS Override Status is activated by the STM in the state DA according to the national requirements. No transition shall occur in this test.
	Note: In this test case, the override procedure is activated at the STM according to the national rules.
ETCS Requirements Tested	SUBSET-035 13.3.2.1.1, 13.3.2.1.1.2, 13.3.2.1.3, 13.3.2.1.4
	SUBSET-026 none
STM Requirements Tested	SUBSET-035 none
	SUBSET-026 none
Packets Transmitted via FFFIS STM	Packet STM-6, STM-7, STM-15
Comments and constraints	<p>The objective of this test is to check</p> <ul style="list-style-type: none"> that the ETCS On-board (STM Control Function) while in Level STM reports the ETCS Override Status to all connected STMs, after the STM in the state DA has reported the activation of its override function according to the national requirements to the ETCS On-board (STM Control Function), and that the ETCS On-board (STM Control Function) reports the deactivation of the ETCS Override Status to all connected STMs whenever the ETCS Override Status is deactivated according to the ERTMS / ETCS rules (see SUBSET-026, ERTMS / ETCS - Class 1 System Requirements Specification). <p>To perform this test case it is necessary to connect up to the maximum number of STMs (see SUBSET-059, Performance Requirements for STMs) – at least 2 STMs -, which shall be of the type “STM National”, to the ETCS On-board.</p>

ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

Starting Conditions	Value	Comments
STM State	DA	all other STMs used within this Test Case shall be in the state CS
ETCS Mode	SN	
ETCS Level	STM	
Train State	standstill	
Train Data	valid	
Additional Data	valid	
National Values	valid	
STM Control Function Connection	established	valid for all STMs used within this Test Case
DMI Connection	established	valid for all STMs used within this Test Case
Odometry Data	transmitted	valid for all STMs used within this Test Case
Reference Time Data	transmitted	valid for all STMs used within this Test Case
TIU Connection	not relevant	valid for all STMs used within this Test Case
BIU Connection	not relevant	valid for all STMs used within this Test Case
JRU Connection	not relevant	valid for all STMs used within this Test Case
Other connections	not relevant	valid for all STMs used within this Test Case
TIU Regenerative Brake Command	not relevant	
TIU Magnetic Shoes Command	not relevant	
TIU Eddy Current Brake Command	not relevant	
TIU Inhibit Passenger Emergency Brake Command	not relevant	
TIU Pantograph Command	not relevant	
TIU Air Tightness Command	not relevant	
TIU Main Switch / Circuit Breaker Command	not relevant	
TIU Traction Cut Off Command	not relevant	
TIU Sleeping Status	not Sleeping	
TIU Traction Cut Off Status	not relevant	
TIU Direction Controller Position Status	not relevant	
TIU Cab Status (Desk Status)	desk A opened	
BIU Status	not relevant	
BIU Emergency Brake Command	not relevant	
BIU Service Brake Command	not relevant	
BIU Emergency Brake Status	release	
BIU Service Brake Status	release	

© This document is the property of

ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

Starting Conditions		Value	Comments
STM Version Number	Subset-026	1.0	valid for all STMs used within this Test Case
	Subset-035	3.0.z	valid for all STMs used within this Test Case
	Subset-058	3.0.z	valid for all STMs used within this Test Case
	Subset-056	3.0.z	valid for all STMs used within this Test Case
	Subset-057	3.0.z	valid for all STMs used within this Test Case
ETCS Version Number	Subset-026	1.0	
	Subset-035	3.0.z	
	Subset-058	3.0.z	
	Subset-056	3.0.z	
	Subset-057	3.0.z	
Track Adhesion		not relevant	

ETCS Test Case

Step	Description/Comments	Input I/F	Input Action	DUT	Output I/F	Output action
1	“Override Request” by the STM in state DA at standstill so that the “Override EOA” procedure is activated by the ETCS On-board. Time: T0	Prof	STM Control Connection: Message-S (STM-15 - state report from STM, STM-6 – Override activation)	ETCS	Prof	STM Control Connection: Message-E1 (STM-7 – override status) with an NID_STM of one STM used within this Test Case – transmitted to all STMs used within this Test Case -
2	Time: T0 + T_NVOVTRP (national value) The “Override EOA” procedure is deactivated when the “max. time for train trip suppression when override EoA function is triggered” (national value) is passed.	-	-	ETCS	Prof	STM Control Connection: Message-E2 (STM-7 – override status) with an NID_STM of one STM used within this Test Case – transmitted to all STMs used within this Test Case -

Message-S (STM-15 - state report from STM, STM-6 – Override activation): STM → ETCS STM Control Function			
VARIABLE	Length	VALUE	COMMENTS
NID_STM	8	FINITE VALUE	any valid value for NID_STM (according to the STM with the Starting Condition “STM State = DA” used within this Test Case)

Message-S (STM-15 - state report from STM, STM-6 – Override activation): STM → ETCS STM Control Function			
VARIABLE	Length	VALUE	COMMENTS
L_MESSAGE	8	COMPUTED	message length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	COMPUTED	packet length
NID_STMSTATE	4	7	state DA
NID_PACKET	8	6	Override activation (STM-6)
L_PACKET	13	COMPUTED	packet length
Padding bits	COMPUTED	COMPUTED	

Message-E1 (STM-7 – override status): ETCS STM Control Function → STM			
VARIABLE	Length	VALUE	COMMENTS
NID_STM	8	FINITE VALUE	any valid value for NID_STM (according to the STMs used within this Test Case)
L_MESSAGE	8	COMPUTED	message length
NID_PACKET	8	7	Override status (STM-7)
L_PACKET	13	COMPUTED	packet length
Q_OVREOA_STATUS	1	1	ETCS override status active
Padding bits	COMPUTED	COMPUTED	

Message-E2 (STM-7 – override status): ETCS STM Control Function → STM			
VARIABLE	Length	VALUE	COMMENTS
NID_STM	8	FINITE VALUE	any valid value for NID_STM (according to the STMs used within this Test Case)
L_MESSAGE	8	COMPUTED	message length
NID_PACKET	8	7	Override status (STM-7)
L_PACKET	13	COMPUTED	packet length
Q_OVREOA_STATUS	1	0	ETCS override status not active
Padding bits	COMPUTED	COMPUTED	

End Conditions	Value	Comments
STM State	unchanged	
ETCS Mode	unchanged	
ETCS Level	unchanged	
Train State	unchanged	
Train Data	unchanged	

ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

Additional Data	unchanged	
National Values	unchanged	
STM Control Function Connection	unchanged	
DMI Connection	unchanged	
Odometry Data	unchanged	
Reference Time Data	unchanged	
TIU Connection	unchanged	
BIU Connection	unchanged	
JRU Connection	unchanged	
Other connections	unchanged	
TIU Regenerative Brake Command	unchanged	
TIU Magnetic Shoes Command	unchanged	
TIU Eddy Current Brake Command	unchanged	
TIU Inhibit Passenger Emergency Brake Command	unchanged	
TIU Pantograph Command	unchanged	
TIU Air Tightness Command	unchanged	
TIU Main Switch / Circuit Breaker Command	unchanged	
TIU Traction Cut Off Command	unchanged	
TIU Sleeping Status	unchanged	
TIU Traction Cut Off Status	unchanged	
TIU Direction Controller Position Status	unchanged	
TIU Cab Status (Desk Status)	unchanged	
BIU Status	unchanged	
BIU Emergency Brake Command	unchanged	
BIU Service Brake Command	unchanged	
BIU Emergency Brake Status	unchanged	
BIU Service Brake Status	unchanged	
STM Version Number	unchanged	
ETCS Version Number	unchanged	
Track Adhesion	unchanged	

© This document is the property of
ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

Test case 12b.0.2.0.0.0

TEST CASE HEADER	
Test case Identification	Override Procedure
	Check the transmission of the Override Status to the STMs while the ETCS level is Level STM and the ETCS Override Status is activated by the STM in the state DA according to the national requirements. A transition to ETCS level 1 shall be passed while the ETCS Override Status is active.
	Note: In this test case, the override procedure is activated at the STM according to the national rules.
ETCS Requirements Tested	SUBSET-035 13.3.2.1.1, 13.3.2.1.1.2, 13.3.2.1.3, 13.3.2.1.4
	SUBSET-026 none
STM Requirements Tested	SUBSET-035 none
	SUBSET-026 none
Packets Transmitted via FFFIS STM	Packet STM-5, STM-6, STM-7, STM-14, STM-15

Comments and constraints	<p>The objective of this test is to check</p> <ul style="list-style-type: none"> that the ETCS On-board (STM Control Function) while in Level STM reports the ETCS Override Status to all connected STMs, after the STM in the state DA has reported the activation of its override function according to the national requirements to the ETCS On-board (STM Control Function), and that the ETCS On-board (STM Control Function) reports the deactivation of the ETCS Override Status to all connected STMs whenever the ETCS Override Status is deactivated according to the ERTMS / ETCS rules (see SUBSET-026, ERTMS / ETCS - Class 1 System Requirements Specification), and that the ETCS On-board does not apply the brakes due to a Trip situation when the transition border is passed, and that the ETCS On-board changes to the ETCS technical mode SR when a transition is passed while the ETCS Override Status ("override EoA" procedure) is active. <p>To perform this test case it is necessary to connect up to the maximum number of STMs (see SUBSET-059, Performance Requirements for STMs) – at least 2 STMs -, which shall be of the type "STM National", to the ETCS On-board.</p>
---------------------------------	--

Starting Conditions	Value	Comments
STM State	DA	all other STMs used within this Test Case shall be in the state CS
ETCS Mode	SN	
ETCS Level	STM	
Train State	moving	train speed shall be 36 km/h
Train Data	valid	
Additional Data	valid	
National Values	valid	
STM Control Function Connection	established	valid for all STMs used within this Test Case
DMI Connection	established	for all other STMs used within this Test Case the DMI connection shall be closed
Odometry Data	transmitted	valid for all STMs used within this Test Case
Reference Time Data	transmitted	valid for all STMs used within this Test Case
TIU Connection	not relevant	valid for all STMs used within this Test Case
BIU Connection	not relevant	valid for all STMs used within this Test Case
JRU Connection	not relevant	valid for all STMs used within this Test Case

ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

Starting Conditions		Value	Comments
Other connections		not relevant	valid for all STMs used within this Test Case
TIU Regenerative Brake Command		not relevant	
TIU Magnetic Shoes Command		not relevant	
TIU Eddy Current Brake Command		not relevant	
TIU Inhibit Passenger Emergency Brake Command		not relevant	
TIU Pantograph Command		not relevant	
TIU Air Tightness Command		not relevant	
TIU Main Switch / Circuit Breaker Command		not relevant	
TIU Traction Cut Off Command		not relevant	
TIU Sleeping Status		not Sleeping	
TIU Traction Cut Off Status		not relevant	
TIU Direction Controller Position Status		not relevant	
TIU Cab Status (Desk Status)		desk A opened	
BIU Status		not relevant	
BIU Emergency Brake Command		not relevant	
BIU Service Brake Command		not relevant	
BIU Emergency Brake Status		release	
BIU Service Brake Status		release	
STM Version Number	Subset-026	1.0	
	Subset-035	3.0.z	
	Subset-058	3.0.z	
	Subset-056	3.0.z	
	Subset-057	3.0.z	
ETCS Version Number	Subset-026	1.0	
	Subset-035	3.0.z	
	Subset-058	3.0.z	
	Subset-056	3.0.z	
	Subset-057	3.0.z	
Track Adhesion		not relevant	

ETCS Test Case

Step	Description/Comments	Input I/F	Input Action	DUT	Output I/F	Output action
-	Initial Condition: Set the National Values for the “Override EoA” procedure to defined values suitable for this Test Case.	BTM	Telegram-B1 (3 – National Values) Telegram-B2	-	-	-
1	“Override Request” by the STM in state DA at standstill so that the “Override EOA” procedure is activated by the ETCS On-board. Time: T0	Prof	STM Control Connection: Message-S1 (STM-15 - state report from STM, STM-6 – override activation)	ETCS	Prof	STM Control Connection: Message-E1 (STM-7 – override status) with an NID_STM of one STM used within this Test Case – transmitted to all STMs used within this Test Case -
2	Time: T0 + 2 s A transition border for a transition to ETCS level 1 is passed at a signal at danger.	BTM	Telegram-B3 (12 – Level 1 MA, 21 – Gradient Profile, 27 - International Static Speed Profile, 41 - Level Transition Order) Telegram-B2	ETCS	DMI	Transition acknowledgement request displayed
	ETCS orders the announced STM to the state CS (unconditional order).	-	-	ETCS	Prof	STM Control Connection: Message-E2 (STM-14 - state order to STM, STM-5 - ETCS status data) with an NID_STM of the STM with the Starting Condition “STM State = DA”
3	Time: T0 + 3 s Driver acknowledges the transition	DMI	Driver acknowledges Transition	ETCS	DMI	Transition acknowledgement request removed
4	Time: T0 + 5 s STM reports state CS in due time.	Prof	close DMI connection (cab A)	-	-	-
		Prof	Message-S2 (STM-15 - state report from STM)	-	-	-

© This document is the property of

ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

Step	Description/Comments	Input I/F	Input Action	DUT	Output I/F	Output action
5	Time: T0 + 30 s The “Override EOA” procedure is deactivated when the “max. time for train trip suppression when override EoA function is triggered” (national value) is passed.	-	-	ETCS	Prof	STM Control Connection: Message-E3 (STM-7 – override status) with an NID_STM of one STM used within this Test Case – transmitted to all STMs used within this Test Case -

Telegram-B1: Balise-Information (National Values)			
VARIABLE	Length	VALUE	COMMENTS
Q_UPDOWN	1	1	Uplink
M_VERSION	7	FINITE VALUE	SRS version
Q_MEDIA	1	0	Balise
N_PIG	3	0	1 st Balise
N_TOTAL	3	1	2 Balise in group
M_DUP	2	0	no duplicates
M_MCOUNT	8	255	identical Value for all balises of the group
NID_C	10	FINITE VALUE	ID of country / region
NID_BG	14	FINITE VALUE	ID of Balise Group
Q_LINK	1	1	linked
NID_PACKET	8	3	Packet 3 – National Values
Q_DIR	2	1	nominal direction
L_PACKET	13	COMPUTED	
Q_SCALE	2	1	1 m
D_VALIDNV	15	0	the national values shall be valid direct after reception
N_ITER	5	0	no national area(s)
V_NVSHUNT	7	6	30 km/h (default value)
V_NVSTFF	7	8	40 km/h (default value)
V_NVONSIGHT	7	6	30 km/h (default value)
V_NVUNFIT	7	20	100 km/h (default value)
V_NVREL	7	8	40 km/h (default value)
D_NVROLL	15	2	2 m (default value)
Q_NVSRBKTRG	1	1	yes (default value)

© This document is the property of

ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

Telegram-B1: Balise-Information (National Values)			
VARIABLE	Length	VALUE	COMMENTS
Q_NVEMRRLS	1	0	release only at standstill possible (default value)
V_NVALLOWOVTRP	7	20	100 km/h
V_NVSUPOVTRP	7	20	100 km/h
D_NVOVTRP	15	2000	2000 m
T_NVOVTRP	8	30	30 s
D_NVPOTRP	15	200	200 m (default value)
M_NVCONTACT	2	10B	no reaction (default value)
T_NVCONTACT	8	255	∞ (default value)
M_NVDERUN	1	1	yes (default value)
D_NVSTFF	15	32767	∞ (default value)
Q_NVDRIVER_ADHES	1	0	not allowed (default value)
NID_PACKET	8	11111111	Packet 255 – End of information

Telegram-B2: Balise-Information			
VARIABLE	Length	VALUE	COMMENTS
Q_UPDOWN	1	1	uplink
M_VERSION	7	FINITE VALUE	SRS version
Q_MEDIA	1	0	Balise
N_PIG	3	1	2 nd Balise
N_TOTAL	3	1	2 Balise in group
M_DUP	2	0	no duplicates
M_MCOUNT	8	255	identical Value for all balises of the group
NID_C	10	FINITE VALUE	ID of country / region
NID_BG	14	FINITE VALUE	ID of Balise Group
Q_LINK	1	1	linked
NID_PACKET	8	11111111	Packet 255 – End of information

Message-S1 (STM-15 - state report from STM, STM-6 – override activation): STM → ETCS STM Control Function			
VARIABLE	Length	VALUE	COMMENTS
NID_STM	8	FINITE VALUE	any valid value for NID_STM (according to the STM with the Starting Condition “STM State = DA” used within this Test Case)
L_MESSAGE	8	COMPUTED	message length
NID_PACKET	8	15	State report from STM (STM-15)

Message-S1 (STM-15 - state report from STM, STM-6 – override activation): STM → ETCS STM Control Function			
VARIABLE	Length	VALUE	COMMENTS
L_PACKET	13	COMPUTED	packet length
NID_STMSTATE	4	7	state DA
NID_PACKET	8	6	Override activation (STM-6)
L_PACKET	13	COMPUTED	packet length
Padding bits	COMPUTED	COMPUTED	

Message-E1 (STM-7 – override status): ETCS STM Control Function → STM			
VARIABLE	Length	VALUE	COMMENTS
NID_STM	8	FINITE VALUE	any valid value for NID_STM (according to the STMs used within this Test Case)
L_MESSAGE	8	COMPUTED	message length
NID_PACKET	8	7	Override status (STM-7)
L_PACKET	13	COMPUTED	packet length
Q_OVREOA_STATUS	1	1	ETCS override status active
Padding bits	COMPUTED	COMPUTED	

Telegram-B3: Balise-Information (L1 MA, Gradient Profile, International Speed Profile, Level Transition Order)			
VARIABLE	Length	VALUE	COMMENTS
Q_UPDOWN	1	1	Uplink
M_VERSION	7	FINITE VALUE	SRS version
Q_MEDIA	1	0	Balise
N_PIG	3	0	1 st Balise
N_TOTAL	3	1	2 Balise in group
M_DUP	2	0	no duplicates
M_MCOUNT	8	255	identical Value for all balises of the group
NID_C	10	FINITE VALUE	ID of country / region
NID_BG	14	FINITE VALUE	ID of Balise Group
Q_LINK	1	1	linked
NID_PACKET	8	12	Packet 12 - Level 1 Movement Authority
Q_DIR	2	1	nominal direction
L_PACKET	13	COMPUTED	
Q_SCALE	2	2	10 m
V_MAIN	7	0	0 km/h (signal at danger)
V_LOA	7	0	0 km/h

ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

Telegram-B3: Balise-Information (L1 MA, Gradient Profile, International Speed Profile, Level Transition Order)			
VARIABLE	Length	VALUE	COMMENTS
T_LOA	10	1023	No time out
N_ITER	5	0	only one section
L_ENDSECTION	15	0	0 m
Q_SECTIONTIMER	1	0	
Q_ENDTIMER	1	0	
Q_DANGERPOINT	1	0	
Q_OVERLAP	1	0	
NID_PACKET	8	21	Packet 21 – Gradient Profile
Q_DIR	2	1	nominal direction
L_PACKET	13	COMPUTED	
Q_SCALE	2	2	10 m
D_GRADIENT	15	0	0 m
Q_GDIR	1	0	downhill
G_A	8	0	0‰
N_ITER	5	0	only one gradient
NID_PACKET	8	27	Packet 27 – International Static Speed Profile
Q_DIR	2	1	nominal direction
L_PACKET	13	COMPUTED	
Q_SCALE	2	2	10 m
D_STATIC	15	0	0 m
V_STATIC	7	40	200 km/h
Q_FRONT	1	1	no train length delay
N_ITER	5	0	
N_ITER	5	0	
NID_PACKET	8	41	Packet 41 – Level Transition Order
Q_DIR	2	1	nominal direction
L_PACKET	13	COMPUTED	
Q_SCALE	2	1	1 m
D_LEVELTR	15	32767	now (the level transition is performed upon receipt of the order)
M_LEVELTR	3	2	Level 1
L_ACKLEVELTR	15	0	acknowledgement area starts at the level transition border
N_ITER	5	0	no mixed level area
NID_PACKET	8	11111111	Packet 255 – End of information

© This document is the property of

ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

Message-E2 (STM-14 - state order to STM, STM-5 - ETCS status data): ETCS STM Control Function → STM			
VARIABLE	Length	VALUE	COMMENTS
NID_STM	8	FINITE VALUE	any valid value for NID_STM (according to the STM with the Starting Condition "STM State = DA" used within this Test Case)
L_MESSAGE	8	COMPUTED	message length
NID_PACKET	8	14	State order to STM (STM-14)
L_PACKET	13	COMPUTED	packet length
NID_STMSTATEORDER	4	4	state CS (unconditional)
NID_PACKET	8	5	ETCS status data (STM-5)
L_PACKET	13	COMPUTED	packet length
M_LEVEL	3	2	Level 1
M_MODE	4	2	SR (Staff Responsible)
Padding bits	COMPUTED	COMPUTED	

Message-S2 (STM-15 - state report from STM): STM → ETCS STM Control Function			
VARIABLE	Length	VALUE	COMMENTS
NID_STM	8	FINITE VALUE	any valid value for NID_STM (according to the STM with the Starting Condition "STM State = DA" used within this Test Case)
L_MESSAGE	8	COMPUTED	message length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	COMPUTED	packet length
NID_STMSTATE	4	4	state CS
Padding bits	COMPUTED	COMPUTED	

Message-E3 (STM-7 – override status): ETCS STM Control Function → STM			
VARIABLE	Length	VALUE	COMMENTS
NID_STM	8	FINITE VALUE	any valid value for NID_STM (according to the STMs used within this Test Case)
L_MESSAGE	8	COMPUTED	message length
NID_PACKET	8	7	Override status (STM-7)
L_PACKET	13	COMPUTED	packet length
Q_OVREOA_STATUS	1	0	ETCS override status not active
Padding bits	COMPUTED	COMPUTED	

ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

End Conditions	Value	Comments
STM State	CS	valid for all STMs used within this Test Case
ETCS Mode	SR	
ETCS Level	1	
Train State	Unchanged	
Train Data	Unchanged	
Additional Data	unchanged	
National Values	changed	data for override is changed
STM Control Function Connection	unchanged	
DMI Connection	closed	valid for all STMs used within this Test Case
Odometry Data	unchanged	
Reference Time Data	unchanged	
TIU Connection	unchanged	
BIU Connection	unchanged	
JRU Connection	unchanged	
Other connections	unchanged	
TIU Regenerative Brake Command	unchanged	
TIU Magnetic Shoes Command	unchanged	
TIU Eddy Current Brake Command	unchanged	
TIU Inhibit Passenger Emergency Brake Command	unchanged	
TIU Pantograph Command	unchanged	
TIU Air Tightness Command	unchanged	
TIU Main Switch / Circuit Breaker Command	unchanged	
TIU Traction Cut Off Command	unchanged	
TIU Sleeping Status	unchanged	
TIU Traction Cut Off Status	unchanged	
TIU Direction Controller Position Status	unchanged	
TIU Cab Status (Desk Status)	unchanged	
BIU Status	unchanged	
BIU Emergency Brake Command	unchanged	
BIU Service Brake Command	unchanged	
BIU Emergency Brake Status	unchanged	
BIU Service Brake Status	unchanged	

© This document is the property of

ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

STM Version Number	unchanged	
ETCS Version Number	unchanged	
Track Adhesion	unchanged	

Test case 12b.0.3.0.0.0.0.0

TEST CASE HEADER	
Test case Identification	Override Procedure
	<p>Check the transmission of the Override Status to the STMs while the ETCS level is Level STM and the ETCS Override Status is activated by the STM in the state DA according to the national requirements. A transition to another ETCS level STM shall be passed while the ETCS Override Status is active.</p> <p>Note: In this test case, the override procedure is activated at the STM according to the national rules.</p>
ETCS Requirements Tested	SUBSET-035 13.3.2.1.1, 13.3.2.1.1.2, 13.3.2.1.3, 13.3.2.1.4
	SUBSET-026 none
STM Requirements Tested	SUBSET-035 none
	SUBSET-026 none
Packets Transmitted via FFFIS STM	Packet STM-5, STM-6, STM-7, STM-14, STM-15
Comments and constraints	<p>The objective of this test is to check</p> <ul style="list-style-type: none"> that the ETCS On-board (STM Control Function) while in Level STM reports the ETCS Override Status to all connected STMs, after the STM in the state DA has reported the activation of its override function according to the national requirements to the ETCS On-board (STM Control Function), that the ETCS On-board (STM Control Function) reports the deactivation of the ETCS Override Status to all connected STMs whenever the ETCS Override Status is deactivated according to the ERTMS / ETCS rules (see SUBSET-026, ERTMS / ETCS - Class 1 System Requirements Specification), and <p>To perform this test case it is necessary to connect up to the maximum number of STMs (see SUBSET-059, Performance Requirements for STMs) – at least 2 STMs -, which shall be of the type “STM National”, to the ETCS On-board.</p>

ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

Starting Conditions	Value	Comments
STM State	DA	all other STMs used within this Test Case shall be in the state CS
ETCS Mode	SN	
ETCS Level	STM	
Train State	moving	train speed shall be 36 km/h
Train Data	valid	
Additional Data	valid	
National Values	valid	
STM Control Function Connection	established	valid for all STMs used within this Test Case
DMI Connection	established	for all other STMs used within this Test Case the DMI connection shall be closed
Odometry Data	transmitted	valid for all STMs used within this Test Case
Reference Time Data	transmitted	valid for all STMs used within this Test Case
TIU Connection	not relevant	valid for all STMs used within this Test Case
BIU Connection	not relevant	valid for all STMs used within this Test Case
JRU Connection	not relevant	valid for all STMs used within this Test Case
Other connections	not relevant	valid for all STMs used within this Test Case
TIU Regenerative Brake Command	not relevant	
TIU Magnetic Shoes Command	not relevant	
TIU Eddy Current Brake Command	not relevant	
TIU Inhibit Passenger Emergency Brake Command	not relevant	
TIU Pantograph Command	not relevant	
TIU Air Tightness Command	not relevant	
TIU Main Switch / Circuit Breaker Command	not relevant	
TIU Traction Cut Off Command	not relevant	
TIU Sleeping Status	not Sleeping	
TIU Traction Cut Off Status	not relevant	
TIU Direction Controller Position Status	not relevant	
TIU Cab Status (Desk Status)	desk A opened	
BIU Status	not relevant	
BIU Emergency Brake Command	not relevant	
BIU Service Brake Command	not relevant	
BIU Emergency Brake Status	release	

© This document is the property of

ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

Starting Conditions		Value	Comments
BIU Service Brake Status		release	
STM Version Number	Subset-026	1.0	
	Subset-035	3.0.z	
	Subset-058	3.0.z	
	Subset-056	3.0.z	
	Subset-057	3.0.z	
ETCS Version Number	Subset-026	1.0	
	Subset-035	3.0.z	
	Subset-058	3.0.z	
	Subset-056	3.0.z	
	Subset-057	3.0.z	
Track Adhesion		not relevant	

ETCS Test Case

Step	Description/Comments	Input I/F	Input Action	DUT	Output I/F	Output action
-	Initial Condition: Set the National Values for the “Override EoA” procedure to defined values suitable for this Test Case.	BTM	Telegram-B1 (3 – National Values) Telegram-B2	-	-	-
1	“Override Request” by the STM in state DA so that the “Override EOA” procedure is activated by the ETCS On-board. Time: T0	Prof	STM Control Connection: Message-S1 (STM-15 - state report from STM, STM-6 – override activation)	ETCS	Prof	STM Control Connection: Message-E1 (STM-7 – override status) with an NID_STM of one STM used within this Test Case – transmitted to all STMs used within this Test Case -
2	Time: T0 + 10 s A transition border for a transition to ETCS level STM is passed.	BTM	Telegram-B3 (41 - Level Transition Order) Telegram-B2	ETCS	DMI	Transition acknowledgement request displayed

ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

Step	Description/Comments	Input I/F	Input Action	DUT	Output I/F	Output action
	ETCS orders the currently active STM to the state CS.	-	-	ETCS	Prof	STM Control Connection: Message-E2 (STM-14 - state order to STM, STM-5 - ETCS status data) with the NID_STM of the STM with the Starting Condition "STM State = DA"
3	Time: T0 + 11 s Driver acknowledges the transition	DMI	Driver acknowledges Transition	ETCS	DMI	Transition acknowledgement request removed
4	The STM closes the connection to the ETCS DMI function	Prof	close DMI connection (cab A)	-	-	-
5	Time: T0 + 14 s STM reports state CS in due time.	Prof	STM Control Connection: Message-S2 (STM-15 - state report from STM)	-	-	-
	ETCS orders the announced STM to the state DA.	-	-	ETCS	Prof	STM Control Connection: Message-E3 (STM-14 - state order to STM) with the NID_STM of the STM announced in Telegram-B3
6	STM reports state DA in due time.	Prof	STM Control Connection: Message-S3 (STM-15 - state report from STM)	-	-	-
7	Time: T0 + 60 s The "Override EOA" procedure is deactivated when the "max. time for train trip suppression when override EoA function is triggered" (national value) is passed.	-	-	ETCS	Prof	STM Control Connection: Message-E4 (STM-7 – override status) with an NID_STM of one STM used within this Test Case – transmitted to all STMs used within this Test Case -

Telegram-B1: Balise-Information (National Values)			
VARIABLE	Length	VALUE	COMMENTS
Q_UPDOWN	1	1	Uplink
M_VERSION	7	FINITE VALUE	SRS version
Q_MEDIA	1	0	Balise
N_PIG	3	0	1 st Balise

© This document is the property of

ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

Telegram-B1: Balise-Information (National Values)			
VARIABLE	Length	VALUE	COMMENTS
N_TOTAL	3	1	2 Balise in group
M_DUP	2	0	no duplicates
M_MCOUNT	8	255	identical Value for all balises of the group
NID_C	10	FINITE VALUE	ID of country / region
NID_BG	14	FINITE VALUE	ID of Balise Group
Q_LINK	1	1	linked
NID_PACKET	8	3	Packet 3 – National Values
Q_DIR	2	1	nominal direction
L_PACKET	13	COMPUTED	
Q_SCALE	2	1	1 m
D_VALIDNV	15	0	the national values shall be valid direct after reception
N_ITER	5	0	no national area(s)
V_NVSHUNT	7	6	30 km/h (default value)
V_NVSTFF	7	8	40 km/h (default value)
V_NVONSIGHT	7	6	30 km/h (default value)
V_NVUNFIT	7	20	100 km/h (default value)
V_NVREL	7	8	40 km/h (default value)
D_NVROLL	15	2	2 m (default value)
Q_NVSRBKTRG	1	1	yes (default value)
Q_NVEMRRLS	1	0	release only at standstill possible (default value)
V_NVALLOWOVTRP	7	20	100 km/h
V_NVSUPOVTRP	7	20	100 km/h
D_NVOVTRP	15	2000	2000 m
T_NVOVTRP	8	60	60 s
D_NVPOTRP	15	200	200 m (default value)
M_NVCONTACT	2	10B	no reaction (default value)
T_NVCONTACT	8	255	∞ (default value)
M_NVDERUN	1	1	yes (default value)
D_NVSTFF	15	32767	∞ (default value)
Q_NVDRIVER_ADHES	1	0	not allowed (default value)
NID_PACKET	8	11111111	Packet 255 – End of information

© This document is the property of

ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

Telegram-B2: Balise-Information			
VARIABLE	Length	VALUE	COMMENTS
Q_UPDOWN	1	1	uplink
M_VERSION	7	FINITE VALUE	SRS version
Q_MEDIA	1	0	Balise
N_PIG	3	1	2 nd Balise
N_TOTAL	3	1	2 Balise in group
M_DUP	2	0	no duplicates
M_MCOUNT	8	255	identical Value for all balises of the group
NID_C	10	FINITE VALUE	ID of country / region
NID_BG	14	FINITE VALUE	ID of Balise Group
Q_LINK	1	1	linked
NID_PACKET	8	11111111	Packet 255 – End of information

Message-S1 (STM-15 - state report from STM, STM-6 – override activation): STM → ETCS STM Control Function			
VARIABLE	Length	VALUE	COMMENTS
NID_STM	8	FINITE VALUE	any valid value for NID_STM (according to the STM with the Starting Condition “STM State = DA” used within this Test Case)
L_MESSAGE	8	COMPUTED	message length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	COMPUTED	packet length
NID_STMSTATE	4	7	state DA
NID_PACKET	8	6	Override activation (STM-6)
L_PACKET	13	COMPUTED	packet length
Padding bits	COMPUTED	COMPUTED	

Message-E1 (STM-7 – override status): ETCS STM Control Function → STM			
VARIABLE	Length	VALUE	COMMENTS
NID_STM	8	FINITE VALUE	any valid value for NID_STM (according to the STMs used within this Test Case)
L_MESSAGE	8	COMPUTED	message length
NID_PACKET	8	7	Override status (STM-7)
L_PACKET	13	COMPUTED	packet length
Q_OVREOA_STATUS	1	1	ETCS override status active
Padding bits	COMPUTED	COMPUTED	

Telegram-B3: Balise-Information (Level Transition Order)			
VARIABLE	Length	VALUE	COMMENTS
Q_UPDOWN	1	1	Uplink
M_VERSION	7	FINITE VALUE	SRS version
Q_MEDIA	1	0	Balise
N_PIG	3	0	1 st Balise
N_TOTAL	3	1	2 Balise in group
M_DUP	2	0	no duplicates
M_MCOUNT	8	255	identical Value for all balises of the group
NID_C	10	FINITE VALUE	ID of country / region
NID_BG	14	FINITE VALUE	ID of Balise Group
Q_LINK	1	1	linked
NID_PACKET	8	41	Packet 41 – Level Transition Order
Q_DIR	2	1	nominal direction
L_PACKET	13	COMPUTED	
Q_SCALE	2	1	1 m
D_LEVELTR	15	32767	now (the level transition is performed upon receipt of the order)
M_LEVELTR	3	1	Level STM
NID_STM	8	FINITE VALUE	any valid value for NID_STM (according to the STMs used within this Test Case)
L_ACKLEVELTR	15	0	acknowledgement area starts at the level transition border
N_ITER	5	0	no mixed level area
NID_PACKET	8	11111111	Packet 255 – End of information

Message-E2 (STM-14 - state order to STM, STM-5 - ETCS status data): ETCS STM Control Function → STM			
VARIABLE	Length	VALUE	COMMENTS
NID_STM	8	FINITE VALUE	any valid value for NID_STM (according to the STM with the Starting Condition “STM State = DA” used within this Test Case)
L_MESSAGE	8	COMPUTED	message length
NID_PACKET	8	14	State order to STM (STM-14)
L_PACKET	13	COMPUTED	packet length
NID_STMSTATEORDER	4	5	state CS (conditional)
NID_PACKET	8	5	ETCS status data (STM-5)
L_PACKET	13	COMPUTED	packet length
M_LEVEL	3	1	Level STM
NID_STM	8	FINITE VALUE	any valid value for NID_STM (according to the STM announced in Telegram-B3)

© This document is the property of

ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

Message-E2 (STM-14 - state order to STM, STM-5 - ETCS status data): ETCS STM Control Function → STM			
VARIABLE	Length	VALUE	COMMENTS
M_MODE	4	13	SN (STM National)
Padding bits	COMPUTED	COMPUTED	

Message-S2 (STM-15 - state report from STM): STM → ETCS STM Control Function			
VARIABLE	Length	VALUE	COMMENTS
NID_STM	8	FINITE VALUE	any valid value for NID_STM (according to the STM with the Starting Condition "STM State = DA" used within this Test Case)
L_MESSAGE	8	COMPUTED	message length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	COMPUTED	packet length
NID_STMSTATE	4	4	state CS
Padding bits	COMPUTED	COMPUTED	

Message-E3 (STM-14 - state order to STM): ETCS STM Control Function → STM			
VARIABLE	Length	VALUE	COMMENTS
NID_STM	8	FINITE VALUE	any valid value for NID_STM (according to the STM announced in Telegram-B3)
L_MESSAGE	8	COMPUTED	message length
NID_PACKET	8	14	State order to STM (STM-14)
L_PACKET	13	COMPUTED	packet length
NID_STMSTATEORDER	4	7	state DA
Padding bits	COMPUTED	COMPUTED	

Message-S3 (STM-15 - state report from STM): STM → ETCS STM Control Function			
VARIABLE	Length	VALUE	COMMENTS
NID_STM	8	FINITE VALUE	any valid value for NID_STM (according to the STM announced in Telegram-B3)
L_MESSAGE	8	COMPUTED	message length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	COMPUTED	packet length
NID_STMSTATE	4	7	state DA
Padding bits	COMPUTED	COMPUTED	

Message-E4 (STM-7 – override status): ETCS STM Control Function → STM

VARIABLE	Length	VALUE	COMMENTS
NID_STM	8	FINITE VALUE	any valid value for NID_STM (according to the STMs used within this Test Case)
L_MESSAGE	8	COMPUTED	message length
NID_PACKET	8	7	Override status (STM-7)
L_PACKET	13	COMPUTED	packet length
Q_OVREOA_STATUS	1	0	ETCS override status not active
Padding bits	COMPUTED	COMPUTED	

End Conditions	Value	Comments
STM State	CS	valid for all STMs used within this Test Case except for one
ETCS Mode	SN	
ETCS Level	STM	
Train State	unchanged	
Train Data	unchanged	
Additional Data	unchanged	
National Values	changed	data for override is changed
STM Control Function Connection	unchanged	
DMI Connection	closed	valid for all STMs used within this Test Case except for one
Odometry Data	unchanged	
Reference Time Data	unchanged	
TIU Connection	unchanged	
BIU Connection	unchanged	
JRU Connection	unchanged	
Other connections	unchanged	
TIU Regenerative Brake Command	unchanged	
TIU Magnetic Shoes Command	unchanged	
TIU Eddy Current Brake Command	unchanged	
TIU Inhibit Passenger Emergency Brake Command	unchanged	
TIU Pantograph Command	unchanged	
TIU Air Tightness Command	unchanged	
TIU Main Switch / Circuit Breaker Command	unchanged	
TIU Traction Cut Off Command	unchanged	

© This document is the property of

ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

TIU Sleeping Status	unchanged	
TIU Traction Cut Off Status	unchanged	
TIU Direction Controller Position Status	unchanged	
TIU Cab Status (Desk Status)	unchanged	
BIU Status	unchanged	
BIU Emergency Brake Command	unchanged	
BIU Service Brake Command	unchanged	
BIU Emergency Brake Status	unchanged	
BIU Service Brake Status	unchanged	
STM Version Number	unchanged	
ETCS Version Number	unchanged	
Track Adhesion	unchanged	

Test case 12c.0.1.0

TEST CASE HEADER	
Test case Identification	Override Procedure
	Check the transmission of the Override Status to the STMs while the ETCS level is Level STM and the ETCS Override Status was activated by the ETCS On-board according to the ERTMS / ETCS rules. No transition shall occur in this test. Note: In this test case, the override procedure is activated at the ETCS according to the ERTMS/ETCS rules.
ETCS Requirements Tested	SUBSET-035 13.3.2.1.1, 13.3.2.1.1.3, 13.3.2.1.3, 13.3.2.1.4
	SUBSET-026 none
STM Requirements Tested	SUBSET-035 none
	SUBSET-026 none
Packets Transmitted via FFFIS STM	Packet STM-7, STM-15, STM-43
Comments and constraints	<p>The objective of this test is to check that the ETCS On-board (STM Control Function) while in Level STM reports the ETCS Override Status to all connected STMs whenever the ETCS Override Status changes according to the ERTMS / ETCS rules (see SUBSET-026, ERTMS / ETCS - Class 1 System Requirements Specification).</p> <p>To perform this test case it is necessary to connect up to the maximum number of STMs (see SUBSET-059, Performance Requirements for STMs) – at least 2 STMs -, which shall be of the type “STM National”, to the ETCS On-board.</p>

Starting Conditions	Value	Comments
STM State	DA	all other STMs used within this Test Case shall be in the state CS
ETCS Mode	SN	
ETCS Level	STM	
Train State	standstill	
Train Data	valid	
Additional Data	valid	

© This document is the property of

ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

Starting Conditions		Value	Comments
National Values		valid	
STM Control Function Connection		established	valid for all STMs used within this Test Case
DMI Connection		established	valid for all STMs used within this Test Case
Odometry Data		transmitted	valid for all STMs used within this Test Case
Reference Time Data		transmitted	valid for all STMs used within this Test Case
TIU Connection		not relevant	valid for all STMs used within this Test Case
BIU Connection		not relevant	valid for all STMs used within this Test Case
JRU Connection		not relevant	valid for all STMs used within this Test Case
Other connections		not relevant	valid for all STMs used within this Test Case
TIU Regenerative Brake Command		not relevant	
TIU Magnetic Shoes Command		not relevant	
TIU Eddy Current Brake Command		not relevant	
TIU Inhibit Passenger Emergency Brake Command		not relevant	
TIU Pantograph Command		not relevant	
TIU Air Tightness Command		not relevant	
TIU Main Switch / Circuit Breaker Command		not relevant	
TIU Traction Cut Off Command		not relevant	
TIU Sleeping Status		not Sleeping	
TIU Traction Cut Off Status		not relevant	
TIU Direction Controller Position Status		not relevant	
TIU Cab Status (Desk Status)		desk A opened	
BIU Status		not relevant	
BIU Emergency Brake Command		not relevant	
BIU Service Brake Command		not relevant	
BIU Emergency Brake Status		release	
BIU Service Brake Status		release	
STM Version Number	Subset-026	1.0	valid for all STMs used within this Test Case
	Subset-035	3.0.z	valid for all STMs used within this Test Case
	Subset-058	3.0.z	valid for all STMs used within this Test Case
	Subset-056	3.0.z	valid for all STMs used within this Test Case
	Subset-057	3.0.z	valid for all STMs used within this Test Case
	Subset-026	1.0	

© This document is the property of

ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

Starting Conditions		Value	Comments
	Subset-026	1.0	
	Subset-058	3.0.z	
	Subset-056	3.0.z	
	Subset-057	3.0.z	
Track Adhesion		not relevant	

ETCS Test Case

Step	Description/Comments	Input I/F	Input Action	DUT	Output I/F	Output action
-	Initial Condition: No inhibition the ETCS override.	Prof	DMI Connection: Message-S (STM-15 - state report from STM, STM-43 - national ETCS DMI)	-	-	-
1	“Override Request” by the driver at standstill so that the “Override EOA” procedure is activated by the ETCS On-board. Time: T0	DMI	Override button activated by the driver	ETCS	Prof	STM Control Connection: Message-E1 (STM-7 – override status) with an NID_STM of one STM used within this Test Case – transmitted to all STMs used within this Test Case -
2	Time: T0 + T_NVOVTRP (national value) The “Override EOA” procedure is deactivated when the “max. time for train trip suppression when override EoA function is triggered” (national value) is passed.	-	-	ETCS	Prof	STM Control Connection: Message-E2 (STM-7 – override status) with an NID_STM of one STM used within this Test Case – transmitted to all STMs used within this Test Case -

Message-S (STM-15 - state report from STM, STM-43 - national ETCS DMI): STM → ETCS DMI Function			
VARIABLE	Length	VALUE	COMMENTS
NID_STM	8	FINITE VALUE	any valid value for NID_STM
L_MESSAGE	8	COMPUTED	message length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	COMPUTED	packet length
NID_STMSTATE	4	7	state DA

ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

Message-S (STM-15 - state report from STM, STM-43 - national ETCS DMI): STM → ETCS DMI Function			
VARIABLE	Length	VALUE	COMMENTS
NID_PACKET	8	43	National ETCS DMI (STM-43)
L_PACKET	13	COMPUTED	packet length
Q_SCALE	2	1	
Q_INDICATE	12	000000000000 B	no inhibition
Q_WARNINGLIMIT	1	0	
Q_INDICATIONLIMIT	1	0	
V_PERMIT	10	100	
V_TARGET	7	0	
V_RELEASE	7	40	
V_INTERV	7	110	
D_TARGET	15	100	
N_ITER	5	0	no customized supervision information
Padding bits	COMPUTED	COMPUTED	

Message-E1 (STM-7 – override status): ETCS STM Control Function → STM			
VARIABLE	Length	VALUE	COMMENTS
NID_STM	8	FINITE VALUE	any valid value for NID_STM (according to the STMs used within this Test Case)
L_MESSAGE	8	COMPUTED	message length
NID_PACKET	8	7	Override status (STM-7)
L_PACKET	13	COMPUTED	packet length
Q_OVREOA_STATUS	1	1	ETCS override status active
Padding bits	COMPUTED	COMPUTED	

Message-E2 (STM-7 – override status): ETCS STM Control Function → STM			
VARIABLE	Length	VALUE	COMMENTS
NID_STM	8	FINITE VALUE	any valid value for NID_STM (according to the STMs used within this Test Case)
L_MESSAGE	8	COMPUTED	message length
NID_PACKET	8	7	Override status (STM-7)
L_PACKET	13	COMPUTED	packet length
Q_OVREOA_STATUS	1	0	ETCS override status not active
Padding bits	COMPUTED	COMPUTED	

© This document is the property of
ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

End Conditions	Value	Comments
STM State	Unchanged	
ETCS Mode	Unchanged	
ETCS Level	unchanged	
Train State	unchanged	
Train Data	unchanged	
Additional Data	unchanged	
National Values	unchanged	
STM Control Function Connection	unchanged	
DMI Connection	unchanged	
Odometry Data	unchanged	
Reference Time Data	unchanged	
TIU Connection	unchanged	
BIU Connection	unchanged	
JRU Connection	unchanged	
Other connections	unchanged	
TIU Regenerative Brake Command	unchanged	
TIU Magnetic Shoes Command	unchanged	
TIU Eddy Current Brake Command	unchanged	
TIU Inhibit Passenger Emergency Brake Command	unchanged	
TIU Pantograph Command	unchanged	
TIU Air Tightness Command	unchanged	
TIU Main Switch / Circuit Breaker Command	unchanged	
TIU Traction Cut Off Command	unchanged	
TIU Sleeping Status	unchanged	
TIU Traction Cut Off Status	unchanged	
TIU Direction Controller Position Status	unchanged	
TIU Cab Status (Desk Status)	unchanged	
BIU Status	unchanged	
BIU Emergency Brake Command	unchanged	
BIU Service Brake Command	unchanged	
BIU Emergency Brake Status	unchanged	

© This document is the property of

ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

BIU Service Brake Status	unchanged	
STM Version Number	unchanged	
ETCS Version Number	unchanged	
Track Adhesion	unchanged	

Test case 12c.0.2.0.0.0

TEST CASE HEADER	
Test case Identification	Override Procedure
	Check the transmission of the Override Status to the STMs while the ETCS level is Level STM and the ETCS Override Status was activated by the ETCS On-board according to the ERTMS / ETCS rules. A transition to ETCS level 1 shall be passed while the ETCS Override Status is active.
	Note: In this test case, the override procedure is activated at the ETCS according to the ERTMS/ETCS rules.
ETCS Requirements Tested	SUBSET-035 13.3.2.1.1, 13.3.2.1.1.3, 13.3.2.1.3, 13.3.2.1.4
	SUBSET-026 none
STM Requirements Tested	SUBSET-035 none
	SUBSET-026 none
Packets Transmitted via FFFIS STM	Packet STM-5, STM-6, STM-7, STM-14, STM-15

Comments and constraints	<p>The objective of this test is to check</p> <ul style="list-style-type: none"> that the ETCS On-board (STM Control Function) while in Level STM reports the ETCS Override Status to all connected STMs after the ETCS Override Status is activated by the ETCS On-board according to the ERTMS / ETCS rules, and that the ETCS On-board (STM Control Function) reports the deactivation of the ETCS Override Status to all connected STMs whenever the ETCS Override Status is deactivated according to the ERTMS / ETCS rules (see SUBSET-026, ERTMS / ETCS - Class 1 System Requirements Specification), and that the ETCS On-board does not apply the brakes due to a Trip situation when the transition border is passed, and that the ETCS On-board changes to the ETCS technical mode SR when a transition is passed while the ETCS Override Status ("override EoA" procedure) is active. <p>To perform this test case it is necessary to connect up to the maximum number of STMs (see SUBSET-059, Performance Requirements for STMs) – at least 2 STMs -, which shall be of the type "STM National", to the ETCS On-board.</p>
---------------------------------	--

Starting Conditions	Value	Comments
STM State	DA	all other STMs used within this Test Case shall be in the state CS
ETCS Mode	SN	
ETCS Level	STM	
Train State	moving	train speed shall be 36 km/h
Train Data	valid	
Additional Data	valid	
National Values	valid	
STM Control Function Connection	established	valid for all STMs used within this Test Case
DMI Connection	established	for all other STMs used within this Test Case the DMI connection shall be closed
Odometry Data	transmitted	valid for all STMs used within this Test Case
Reference Time Data	transmitted	valid for all STMs used within this Test Case
TIU Connection	not relevant	valid for all STMs used within this Test Case
BIU Connection	not relevant	valid for all STMs used within this Test Case
JRU Connection	not relevant	valid for all STMs used within this Test Case

ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

Starting Conditions		Value	Comments
Other connections		not relevant	valid for all STMs used within this Test Case
TIU Regenerative Brake Command		not relevant	
TIU Magnetic Shoes Command		not relevant	
TIU Eddy Current Brake Command		not relevant	
TIU Inhibit Passenger Emergency Brake Command		not relevant	
TIU Pantograph Command		not relevant	
TIU Air Tightness Command		not relevant	
TIU Main Switch / Circuit Breaker Command		not relevant	
TIU Traction Cut Off Command		not relevant	
TIU Sleeping Status		not Sleeping	
TIU Traction Cut Off Status		not relevant	
TIU Direction Controller Position Status		not relevant	
TIU Cab Status (Desk Status)		desk A opened	
BIU Status		not relevant	
BIU Emergency Brake Command		not relevant	
BIU Service Brake Command		not relevant	
BIU Emergency Brake Status		release	
BIU Service Brake Status		release	
STM Version Number	Subset-026	1.0	
	Subset-035	3.0.z	
	Subset-058	3.0.z	
	Subset-056	3.0.z	
	Subset-057	3.0.z	
ETCS Version Number	Subset-026	1.0	
	Subset-035	3.0.z	
	Subset-058	3.0.z	
	Subset-056	3.0.z	
	Subset-057	3.0.z	
Track Adhesion		not relevant	

© This document is the property of
ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

ETCS Test Case

Step	Description/Comments	Input I/F	Input Action	DUT	Output I/F	Output action
-	Initial Condition: Set the National Values for the “Override EoA” procedure to defined values suitable for this Test Case.	BTM	Telegram-B1 (3 – National Values) Telegram-B3	-	-	-
-	Initial Condition: No inhibition the ETCS override.	Prof	DMI Connection: Message-S1 (STM-15 - state report from STM, STM-43 - national ETCS DMI)	-	-	-
1	“Override Request” by the driver at standstill so that the “Override EOA” procedure is activated by the ETCS On-board. Time: T0	DMI	Override button activated by the driver	ETCS	Prof	STM Control Connection: Message-E1 (STM-7 – override status) with an NID_STM of one STM used within this Test Case – transmitted to all STMs used within this Test Case -
2	Time: T0 + 2 s A transition border for a transition to ETCS level 1 is passed at a signal at danger.	BTM	Telegram-B3 (12 – Level 1 MA, 21 – Gradient Profile, 27 - International Static Speed Profile, 41 - Level Transition Order) Telegram-B2	ETCS	DMI	Transition acknowledgement request displayed
	ETCS orders the announced STM to the state DA.	-	-	ETCS	Prof	STM Control Connection: Message-E2 (STM-14 - state order to STM, STM-5 - ETCS status data) with an NID_STM of the STM with the Starting Condition “STM State = DA”
3	Time: T0 + 3 s Driver acknowledges the transition	DMI	Driver acknowledges Transition	ETCS	DMI	Transition acknowledgement request removed
4	Time: T0 + 5 s STM reports state CS in due time.	Prof	close DMI connection (cab A)	-	-	-
		Prof	STM Control Connection: Message-S2 (STM-15 - state report from STM)	-	-	-

© This document is the property of

ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

Step	Description/Comments	Input I/F	Input Action	DUT	Output I/F	Output action
5	Time: T0 + 30 s The “Override EOA” procedure is deactivated when the “max. time for train trip suppression when override EoA function is triggered” (national value) is passed.	-	-	ETCS	Prof	STM Control Connection: Message-E3 (STM-7 – override status) with an NID_STM of one STM used within this Test Case – transmitted to all STMs used within this Test Case -

Telegram-B1: Balise-Information (National Values)			
VARIABLE	Length	VALUE	COMMENTS
Q_UPDOWN	1	1	Uplink
M_VERSION	7	FINITE VALUE	SRS version
Q_MEDIA	1	0	Balise
N_PIG	3	0	1 st Balise
N_TOTAL	3	1	2 Balise in group
M_DUP	2	0	no duplicates
M_MCOUNT	8	255	identical Value for all balises of the group
NID_C	10	FINITE VALUE	ID of country / region
NID_BG	14	FINITE VALUE	ID of Balise Group
Q_LINK	1	1	linked
NID_PACKET	8	3	Packet 3 – National Values
Q_DIR	2	1	nominal direction
L_PACKET	13	COMPUTED	
Q_SCALE	2	1	1 m
D_VALIDNV	15	0	the national values shall be valid direct after reception
N_ITER	5	0	no national area(s)
V_NVSHUNT	7	6	30 km/h (default value)
V_NVSTFF	7	8	40 km/h (default value)
V_NVONSIGHT	7	6	30 km/h (default value)
V_NVUNFIT	7	20	100 km/h (default value)
V_NVREL	7	8	40 km/h (default value)
D_NVROLL	15	2	2 m (default value)
Q_NVSRBKTRG	1	1	yes (default value)

© This document is the property of

ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

Telegram-B1: Balise-Information (National Values)			
VARIABLE	Length	VALUE	COMMENTS
Q_NVEMRRLS	1	0	release only at standstill possible (default value)
V_NVALLOWOVTRP	7	20	100 km/h
V_NVSUPOVTRP	7	20	100 km/h
D_NVOVTRP	15	2000	2000 m
T_NVOVTRP	8	30	30 s
D_NVPOTRP	15	200	200 m (default value)
M_NVCONTACT	2	10B	no reaction (default value)
T_NVCONTACT	8	255	∞ (default value)
M_NVDERUN	1	1	yes (default value)
D_NVSTFF	15	32767	∞ (default value)
Q_NVDRIVER_ADHES	1	0	not allowed (default value)
NID_PACKET	8	11111111	Packet 255 – End of information

Telegram-B2: Balise-Information			
VARIABLE	Length	VALUE	COMMENTS
Q_UPDOWN	1	1	uplink
M_VERSION	7	FINITE VALUE	SRS version
Q_MEDIA	1	0	Balise
N_PIG	3	1	2 nd Balise
N_TOTAL	3	1	2 Balise in group
M_DUP	2	0	no duplicates
M_MCOUNT	8	255	identical Value for all balises of the group
NID_C	10	FINITE VALUE	ID of country / region
NID_BG	14	FINITE VALUE	ID of Balise Group
Q_LINK	1	1	linked
NID_PACKET	8	11111111	Packet 255 – End of information

Message-S1 (STM-15 - state report from STM, STM-43 - national ETCS DMI): STM → ETCS DMI Function			
VARIABLE	Length	VALUE	COMMENTS
NID_STM	8	FINITE VALUE	any valid value for NID_STM
L_MESSAGE	8	COMPUTED	message length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	COMPUTED	packet length

© This document is the property of
ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

Message-S1 (STM-15 - state report from STM, STM-43 - national ETCS DMI): STM → ETCS DMI Function			
VARIABLE	Length	VALUE	COMMENTS
NID_STMSTATE	4	7	state DA
NID_PACKET	8	43	National ETCS DMI (STM-43)
L_PACKET	13	COMPUTED	packet length
Q_SCALE	2	1	
Q_INDICATE	12	000000000000 B	no inhibition
Q_WARNINGLIMIT	1	0	
Q_INDICATIONLIMIT	1	0	
V_PERMIT	10	100	
V_TARGET	7	0	
V_RELEASE	7	40	
V_INTERV	7	110	
D_TARGET	15	100	
N_ITER	5	0	no customized supervision information
Padding bits	COMPUTED	COMPUTED	

Message-E1 (STM-7 – override status): ETCS STM Control Function → STM			
VARIABLE	Length	VALUE	COMMENTS
NID_STM	8	FINITE VALUE	any valid value for NID_STM (according to the STMs used within this Test Case)
L_MESSAGE	8	COMPUTED	message length
NID_PACKET	8	7	Override status (STM-7)
L_PACKET	13	COMPUTED	packet length
Q_OVREOA_STATUS	1	1	ETCS override status active
Padding bits	COMPUTED	COMPUTED	

Telegram-B3: Balise-Information (L1 MA, Gradient Profile, International Speed Profile, Level Transition Order)			
VARIABLE	Length	VALUE	COMMENTS
Q_UPDOWN	1	1	Uplink
M_VERSION	7	FINITE VALUE	SRS version
Q_MEDIA	1	0	Balise
N_PIG	3	0	1 st Balise
N_TOTAL	3	1	2 Balise in group
M_DUP	2	0	no duplicates

© This document is the property of

ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

Telegram-B3: Balise-Information (L1 MA, Gradient Profile, International Speed Profile, Level Transition Order)			
VARIABLE	Length	VALUE	COMMENTS
M_MCOUNT	8	255	identical Value for all balises of the group
NID_C	10	FINITE VALUE	ID of country / region
NID_BG	14	FINITE VALUE	ID of Balise Group
Q_LINK	1	1	linked
NID_PACKET	8	12	Packet 12 - Level 1 Movement Authority
Q_DIR	2	1	nominal direction
L_PACKET	13	COMPUTED	
Q_SCALE	2	2	10 m
V_MAIN	7	0	0 km/h (signal at danger)
V_LOA	7	0	0 km/h
T_LOA	10	1023	no time out
N_ITER	5	0	only one section
L_ENDSECTION	15	0	0 m
Q_SECTIONTIMER	1	0	
Q_ENDTIMER	1	0	
Q_DANGERPOINT	1	0	
Q_OVERLAP	1	0	
NID_PACKET	8	21	Packet 21 – Gradient Profile
Q_DIR	2	1	nominal direction
L_PACKET	13	COMPUTED	
Q_SCALE	2	2	10 m
D_GRADIENT	15	0	0 m
Q_GDIR	1	0	downhill
G_A	8	0	0‰
N_ITER	5	0	only one gradient
NID_PACKET	8	27	Packet 27 – International Static Speed Profile
Q_DIR	2	1	nominal direction
L_PACKET	13	COMPUTED	
Q_SCALE	2	2	10 m
D_STATIC	15	0	0 m
V_STATIC	7	40	200 km/h
Q_FRONT	1	1	no train length delay
N_ITER	5	0	

© This document is the property of

ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

Telegram-B3: Balise-Information (L1 MA, Gradient Profile, International Speed Profile, Level Transition Order)			
VARIABLE	Length	VALUE	COMMENTS
N_ITER	5	0	
NID_PACKET	8	41	Packet 41 – Level Transition Order
Q_DIR	2	1	nominal direction
L_PACKET	13	COMPUTED	
Q_SCALE	2	1	1 m
D_LEVELTR	15	2000	2000 m
M_LEVELTR	3	2	Level 1
L_ACKLEVELTR	15	0	acknowledgement area starts at the level transition border
N_ITER	5	0	no mixed level area
NID_PACKET	8	11111111	Packet 255 – End of information

Message-E2 (STM-14 - state order to STM, STM-5 - ETCS status data): ETCS STM Control Function → STM			
VARIABLE	Length	VALUE	COMMENTS
NID_STM	8	FINITE VALUE	any valid value for NID_STM (according to the STM with the Starting Condition “STM State = DA” used within this Test Case)
L_MESSAGE	8	COMPUTED	message length
NID_PACKET	8	14	State order to STM (STM-14)
L_PACKET	13	COMPUTED	packet length
NID_STMSTATEORDER	4	4	state CS (unconditional)
NID_PACKET	8	5	ETCS status data (STM-5)
L_PACKET	13	COMPUTED	packet length
M_LEVEL	3	2	Level 1
M_MODE	4	2	SR (Staff Responsible)
Padding bits	COMPUTED	COMPUTED	

Message-S2 (STM-15 - state report from STM): STM → ETCS STM Control Function			
VARIABLE	Length	VALUE	COMMENTS
NID_STM	8	FINITE VALUE	any valid value for NID_STM (according to the STM with the Starting Condition “STM State = DA” used within this Test Case)
L_MESSAGE	8	COMPUTED	message length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	COMPUTED	packet length

© This document is the property of

ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

Message-S2 (STM-15 - state report from STM): STM → ETCS STM Control Function			
VARIABLE	Length	VALUE	COMMENTS
NID_STMSTATE	4	4	state CS
Padding bits	COMPUTED	COMPUTED	

Message-E3 (STM-7 – override status): ETCS STM Control Function → STM			
VARIABLE	Length	VALUE	COMMENTS
NID_STM	8	FINITE VALUE	any valid value for NID_STM (according to the STMs used within this Test Case)
L_MESSAGE	8	COMPUTED	message length
NID_PACKET	8	7	Override status (STM-7)
L_PACKET	13	COMPUTED	packet length
Q_OVREOA_STATUS	1	0	ETCS override status not active
Padding bits	COMPUTED	COMPUTED	

End Conditions	Value	Comments
STM State	CS	valid for all STMs used within this Test Case
ETCS Mode	SR	
ETCS Level	1	
Train State	unchanged	
Train Data	unchanged	
Additional Data	unchanged	
National Values	changed	data for override is changed
STM Control Function Connection	unchanged	
DMI Connection	closed	valid for all STMs used within this Test Case
Odometry Data	unchanged	
Reference Time Data	unchanged	
TIU Connection	unchanged	
BIU Connection	unchanged	
JRU Connection	unchanged	
Other connections	unchanged	
TIU Regenerative Brake Command	unchanged	
TIU Magnetic Shoes Command	unchanged	
TIU Eddy Current Brake Command	unchanged	
TIU Inhibit Passenger Emergency	unchanged	

© This document is the property of

ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

Brake Command		
TIU Pantograph Command	unchanged	
TIU Air Tightness Command	unchanged	
TIU Main Switch / Circuit Breaker Command	unchanged	
TIU Traction Cut Off Command	unchanged	
TIU Sleeping Status	unchanged	
TIU Traction Cut Off Status	unchanged	
TIU Direction Controller Position Status	unchanged	
TIU Cab Status (Desk Status)	unchanged	
BIU Status	unchanged	
BIU Emergency Brake Command	unchanged	
BIU Service Brake Command	unchanged	
BIU Emergency Brake Status	unchanged	
BIU Service Brake Status	unchanged	
STM Version Number	unchanged	
ETCS Version Number	unchanged	
Track Adhesion	unchanged	

Test case 12c.0.3.0.0.0.0.0

TEST CASE HEADER	
Test case Identification	Override Procedure
	<p>Check the transmission of the Override Status to the STMs while the ETCS level is in Level STM and the ETCS Override Status is activated by the ETCS On-board according to the ERTMS / ETCS rules. A transition to another ETCS level STM shall be passed while the ETCS Override Status is active.</p> <p>Note: In this test case, the override procedure is activated at the ETCS according to the ERTMS/ETCS rules.</p>
ETCS Requirements Tested	SUBSET-035 13.3.2.1.1, 13.3.2.1.1.3, 13.3.2.1.3, 13.3.2.1.4
	SUBSET-026 none
STM Requirements Tested	SUBSET-035 none
	SUBSET-026 none
Packets Transmitted via FFFIS STM	Packet STM-5, STM-6, STM-7, STM-14, STM-15
Comments and constraints	<p>The objective of this test is to check</p> <ul style="list-style-type: none"> that the ETCS On-board (STM Control Function) while in Level STM reports the ETCS Override Status to all connected STMs after the ETCS Override Status is activated by the ETCS On-board according to the ERTMS / ETCS rules, and that the ETCS On-board (STM Control Function) reports the deactivation of the ETCS Override Status to all connected STMs whenever the ETCS Override Status is deactivated according to the ERTMS / ETCS rules (see SUBSET-026, ERTMS / ETCS - Class 1 System Requirements Specification). <p>To perform this test case it is necessary to connect up to the maximum number of STMs (see SUBSET-059, Performance Requirements for STMs) – at least 2 STMs -, which shall be of the type “STM National”, to the ETCS On-board.</p>

ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

Starting Conditions	Value	Comments
STM State	DA	all other STMs used within this Test Case shall be in the state CS
ETCS Mode	SN	
ETCS Level	STM	
Train State	moving	train speed shall be 36 km/h
Train Data	valid	
Additional Data	valid	
National Values	valid	
STM Control Function Connection	established	valid for all STMs used within this Test Case
DMI Connection	established	for all other STMs used within this Test Case the DMI connection shall be closed
Odometry Data	transmitted	valid for all STMs used within this Test Case
Reference Time Data	transmitted	valid for all STMs used within this Test Case
TIU Connection	not relevant	valid for all STMs used within this Test Case
BIU Connection	not relevant	valid for all STMs used within this Test Case
JRU Connection	not relevant	valid for all STMs used within this Test Case
Other connections	not relevant	valid for all STMs used within this Test Case
TIU Regenerative Brake Command	not relevant	
TIU Magnetic Shoes Command	not relevant	
TIU Eddy Current Brake Command	not relevant	
TIU Inhibit Passenger Emergency Brake Command	not relevant	
TIU Pantograph Command	not relevant	
TIU Air Tightness Command	not relevant	
TIU Main Switch / Circuit Breaker Command	not relevant	
TIU Traction Cut Off Command	not relevant	
TIU Sleeping Status	not Sleeping	
TIU Traction Cut Off Status	not relevant	
TIU Direction Controller Position Status	not relevant	
TIU Cab Status (Desk Status)	desk A opened	
BIU Status	not relevant	
BIU Emergency Brake Command	not relevant	
BIU Service Brake Command	not relevant	
BIU Emergency Brake Status	release	

© This document is the property of

ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

Starting Conditions		Value	Comments
BIU Service Brake Status		release	
STM Version Number	Subset-026	1.0	
	Subset-035	3.0.z	
	Subset-058	3.0.z	
	Subset-056	3.0.z	
	Subset-057	3.0.z	
ETCS Version Number	Subset-026	1.0	
	Subset-035	3.0.z	
	Subset-058	3.0.z	
	Subset-056	3.0.z	
	Subset-057	3.0.z	
Track Adhesion		not relevant	

ETCS Test Case

Step	Description/Comments	Input I/F	Input Action	DUT	Output I/F	Output action
-	Initial Condition: Set the National Values for the “Override EoA” procedure to defined values suitable for this Test Case.	BTM	Telegram-B1 (3 – National Values) Telegram-B2	-	-	-
-	Initial Condition: No inhibition the ETCS override.	Prof	DMI Connection: Message-S1 (STM-15 - state report from STM, STM-43 - national ETCS DMI)	-	-	-
1	“Override Request” by the driver so that the “Override EOA” procedure is activated by the ETCS On-board. Time: T0	DMI	Override button activated by the driver	ETCS	Prof	STM Control Connection: Message-E1 (STM-7 – override status) with an NID_STM of one STM used within this Test Case – transmitted to all STMs used within this Test Case -
2	Time: T0 + 10 s A transition border for a transition to ETCS level STM is passed.	BTM	Telegram-B3 (41 - Level Transition Order) Telegram-B2	ETCS	DMI	Transition acknowledgement request displayed

Step	Description/Comments	Input I/F	Input Action	DUT	Output I/F	Output action
	ETCS orders the currently active STM to the state CS.	-	-	ETCS	Prof	STM Control Connection: Message-E2 (STM-14 - state order to STM, STM-5 - ETCS status data) with the NID_STM of the STM with the Starting Condition "STM State = DA"
3	Time: T0 + 11 s Driver acknowledges the transition	DMI	Driver acknowledges Transition	ETCS	DMI	Transition acknowledgement request removed
4	The STM closes the connection to the ETCS DMI function	Prof	close DMI connection (cab A)	-	-	-
5	Time: T0 + 14 s STM reports state CS in due time.	Prof	STM Control Connection: Message-S2 (STM-15 - state report from STM)	-	-	-
	ETCS orders the announced STM to the state DA.	-	-	ETCS	Prof	STM Control Connection: Message-E3 (STM-14 - state order to STM) with the NID_STM of the STM announced in Telegram-B3
6	STM reports state DA in due time.	Prof	STM Control Connection: Message-S3 (STM-15 - state report from STM)	-	-	-
7	Time: T0 + 60 s The "Override EOA" procedure is deactivated when the "max. time for train trip suppression when override EoA function is triggered" (national value) is passed.	-	-	ETCS	Prof	STM Control Connection: Message-E4 (STM-7 – override status) with an NID_STM of one STM used within this Test Case – transmitted to all STMs used within this Test Case -

Telegram-B1: Balise-Information (National Values)			
VARIABLE	Length	VALUE	COMMENTS
Q_UPDOWN	1	1	Uplink
M_VERSION	7	FINITE VALUE	SRS version
Q_MEDIA	1	0	Balise
N_PIG	3	0	1 st Balise

ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

Telegram-B1: Balise-Information (National Values)			
VARIABLE	Length	VALUE	COMMENTS
N_TOTAL	3	1	2 Balise in group
M_DUP	2	0	no duplicates
M_MCOUNT	8	255	identical Value for all balises of the group
NID_C	10	FINITE VALUE	ID of country / region
NID_BG	14	FINITE VALUE	ID of Balise Group
Q_LINK	1	1	linked
NID_PACKET	8	3	Packet 3 – National Values
Q_DIR	2	1	nominal direction
L_PACKET	13	COMPUTED	
Q_SCALE	2	1	1 m
D_VALIDNV	15	0	the national values shall be valid direct after reception
N_ITER	5	0	no national area(s)
V_NVSHUNT	7	6	30 km/h (default value)
V_NVSTFF	7	8	40 km/h (default value)
V_NVONSIGHT	7	6	30 km/h (default value)
V_NVUNFIT	7	20	100 km/h (default value)
V_NVREL	7	8	40 km/h (default value)
D_NVROLL	15	2	2 m (default value)
Q_NVSRBKTRG	1	1	yes (default value)
Q_NVEMRRLS	1	0	release only at standstill possible (default value)
V_NVALLOWOVTRP	7	20	100 km/h
V_NVSUPOVTRP	7	20	100 km/h
D_NVOVTRP	15	2000	2000 m
T_NVOVTRP	8	60	60 s
D_NVPOTRP	15	200	200 m (default value)
M_NVCONTACT	2	10B	no reaction (default value)
T_NVCONTACT	8	255	∞ (default value)
M_NVDERUN	1	1	yes (default value)
D_NVSTFF	15	32767	∞ (default value)
Q_NVDRIVER_ADHES	1	0	not allowed (default value)
NID_PACKET	8	11111111	Packet 255 – End of information

© This document is the property of
ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

Telegram-B2: Balise-Information			
VARIABLE	Length	VALUE	COMMENTS
Q_UPDOWN	1	1	uplink
M_VERSION	7	FINITE VALUE	SRS version
Q_MEDIA	1	0	Balise
N_PIG	3	1	2 nd Balise
N_TOTAL	3	1	2 Balise in group
M_DUP	2	0	no duplicates
M_MCOUNT	8	255	identical Value for all balises of the group
NID_C	10	FINITE VALUE	ID of country / region
NID_BG	14	FINITE VALUE	ID of Balise Group
Q_LINK	1	1	linked
NID_PACKET	8	11111111	Packet 255 – End of information

Message-S1 (STM-15 - state report from STM, STM-43 - national ETCS DMI): STM → ETCS DMI Function			
VARIABLE	Length	VALUE	COMMENTS
NID_STM	8	FINITE VALUE	Any valid value for NID_STM
L_MESSAGE	8	COMPUTED	message length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	COMPUTED	packet length
NID_STMSTATE	4	7	state DA
NID_PACKET	8	43	National ETCS DMI (STM-43)
L_PACKET	13	COMPUTED	packet length
Q_SCALE	2	1	
Q_INDICATE	12	000000000000 B	no inhibition
Q_WARNINGLIMIT	1	0	
Q_INDICATIONLIMIT	1	0	
V_PERMIT	10	100	
V_TARGET	7	0	
V_RELEASE	7	40	
V_INTERV	7	110	
D_TARGET	15	100	
N_ITER	5	0	no customized supervision information
Padding bits	COMPUTED	COMPUTED	

© This document is the property of

ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

Message-E1 (STM-7 – override status): ETCS STM Control Function → STM			
VARIABLE	Length	VALUE	COMMENTS
NID_STM	8	FINITE VALUE	any valid value for NID_STM (according to the STMs used within this Test Case)
L_MESSAGE	8	COMPUTED	message length
NID_PACKET	8	7	Override status (STM-7)
L_PACKET	13	COMPUTED	packet length
Q_OVROEA_STATUS	1	1	ETCS override status active
Padding bits	COMPUTED	COMPUTED	

Telegram-B3: Balise-Information (Level Transition Order)			
VARIABLE	Length	VALUE	COMMENTS
Q_UPDOWN	1	1	Uplink
M_VERSION	7	FINITE VALUE	SRS version
Q_MEDIA	1	0	Balise
N_PIG	3	0	1 st Balise
N_TOTAL	3	1	2 Balise in group
M_DUP	2	0	no duplicates
M_MCOUNT	8	255	identical Value for all balises of the group
NID_C	10	FINITE VALUE	ID of country / region
NID_BG	14	FINITE VALUE	ID of Balise Group
Q_LINK	1	1	linked
NID_PACKET	8	41	Packet 41 – Level Transition Order
Q_DIR	2	1	nominal direction
L_PACKET	13	COMPUTED	
Q_SCALE	2	1	1 m
D_LEVELTR	15	32767	now (the level transition is performed upon receipt of the order)
M_LEVELTR	3	1	Level STM
NID_STM	8	FINITE VALUE	any valid value for NID_STM (according to the STM announced in Telegram-B3)
L_ACKLEVELTR	15	0	acknowledgement area starts at the level transition border
N_ITER	5	0	no mixed level area
NID_PACKET	8	11111111	Packet 255 – End of information

Message-E2 (STM-14 - state order to STM, STM-5 - ETCS status data): ETCS STM Control Function → STM			
VARIABLE	Length	VALUE	COMMENTS
NID_STM	8	FINITE VALUE	any valid value for NID_STM (according to the STM with the Starting Condition "STM State = DA" used within this Test Case)
L_MESSAGE	8	COMPUTED	message length
NID_PACKET	8	14	State order to STM (STM-14)
L_PACKET	13	COMPUTED	packet length
NID_STMSTATEORDER	4	5	state CS (conditional)
NID_PACKET	8	5	ETCS status data (STM-5)
L_PACKET	13	COMPUTED	packet length
M_LEVEL	3	1	Level STM
NID_STM	8	FINITE VALUE	any valid value for NID_STM (according to the STM announced in Telegram-B3)
M_MODE	4	13	SN (STM National)
Padding bits	COMPUTED	COMPUTED	

Message-S2 (STM-15 - state report from STM): STM → ETCS STM Control Function			
VARIABLE	Length	VALUE	COMMENTS
NID_STM	8	FINITE VALUE	any valid value for NID_STM (according to the STM with the Starting Condition "STM State = DA" used within this Test Case)
L_MESSAGE	8	COMPUTED	message length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	COMPUTED	packet length
NID_STMSTATE	4	4	state CS
Padding bits	COMPUTED	COMPUTED	

Message-E3 (STM-14 - state order to STM): ETCS STM Control Function → STM			
VARIABLE	Length	VALUE	COMMENTS
NID_STM	8	FINITE VALUE	any valid value for NID_STM (according to the STM announced in Telegram-B3)
L_MESSAGE	8	COMPUTED	message length
NID_PACKET	8	14	State order to STM (STM-14)
L_PACKET	13	COMPUTED	packet length
NID_STMSTATEORDER	4	7	state DA
Padding bits	COMPUTED	COMPUTED	

Message-S3 (STM-15 - state report from STM): STM → ETCS STM Control Function

VARIABLE	Length	VALUE	COMMENTS
NID_STM	8	FINITE VALUE	any valid value for NID_STM (according to the STM announced in Telegram-B3)
L_MESSAGE	8	COMPUTED	message length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	COMPUTED	packet length
NID_STMSTATE	4	7	state DA
Padding bits	COMPUTED	COMPUTED	

Message-E4 (STM-7 – override status): ETCS STM Control Function → STM

VARIABLE	Length	VALUE	COMMENTS
NID_STM	8	FINITE VALUE	any valid value for NID_STM (according to the STMs used within this Test Case)
L_MESSAGE	8	COMPUTED	message length
NID_PACKET	8	7	Override status (STM-7)
L_PACKET	13	COMPUTED	packet length
Q_OVREOA_STATUS	1	0	ETCS override status not active
Padding bits	COMPUTED	COMPUTED	

End Conditions	Value	Comments
STM State	CS	valid for all STMs used within this Test Case except for one
ETCS Mode	SN	
ETCS Level	STM	
Train State	Unchanged	
Train Data	Unchanged	
Additional Data	Unchanged	
National Values	changed	data for override is changed
STM Control Function Connection	unchanged	
DMI Connection	closed	valid for all STMs used within this Test Case except for one
Odometry Data	unchanged	
Reference Time Data	unchanged	
TIU Connection	unchanged	
BIU Connection	unchanged	
JRU Connection	unchanged	
Other connections	unchanged	

© This document is the property of

ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

ALCATEL * ALSTOM * ANSALDO SIGNAL * BOMBARDIER * INVENSYS RAIL * SIEMENS

TIU Regenerative Brake Command	unchanged	
TIU Magnetic Shoes Command	unchanged	
TIU Eddy Current Brake Command	unchanged	
TIU Inhibit Passenger Emergency Brake Command	unchanged	
TIU Pantograph Command	unchanged	
TIU Air Tightness Command	unchanged	
TIU Main Switch / Circuit Breaker Command	unchanged	
TIU Traction Cut Off Command	unchanged	
TIU Sleeping Status	unchanged	
TIU Traction Cut Off Status	unchanged	
TIU Direction Controller Position Status	unchanged	
TIU Cab Status (Desk Status)	unchanged	
BIU Status	unchanged	
BIU Emergency Brake Command	unchanged	
BIU Service Brake Command	unchanged	
BIU Emergency Brake Status	unchanged	
BIU Service Brake Status	unchanged	
STM Version Number	unchanged	
ETCS Version Number	unchanged	
Track Adhesion	unchanged	