



ERTMS/ETCS

FFFIS STM Test cases of Functional identity 007

DMI FUNCTION: SOUNDS

Total: 40 Test cases

REF: SUBSET-074-2-7-e

ISSUE: 3.0.0

DATE: 2014-05-09

Company	Technical Approval	Management approval
ALSTOM		
ANSALDO		
AZD		
BOMBARDIER		
CAF		
SIEMENS		
THALES		



Modification History

Issue Number Date	Section Number	Modification / Description	Author
2.9.1 2013-01-30	All	Created in line with Subset 35 issue 3.0.0 date 2010-02-29, SRS issue 3.3.0 date 2012-03-07 and ETCS DMI specification issue 3.3.0 date 2012-03-01	Bombardier Astrid Geck
2.9.2 2013-08-30	All	Updated according to comments from 2nd internal review and from ERA traceability review	Bombardier Astrid Geck
2.9.3 2013-10-31		Updated according to CR 1158 (considering impact from CR 1173)	Bombardier Astrid Geck
2.9.4 2014-02-28	No change	No change to this part of the Subset	Thomas Mandry (Alstom)
2.9.5 2014-04-24	Front page	Baseline 3 1 st Maintenance pre-release version	Thomas Mandry (Alstom)
3.0.0 2014-05-09	-	Baseline 3 1 st Maintenance release version	Philippe Prieels



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2.5 Sounds

2.5.1 Test Case 7e.1

TEST CASE HEADER	
Test case identification	DMI Function
	7e1.0.1.(7e2.0.1.1.2.0).1.(7e2.0.1.2.1.0).1.(7e2.0.1.3.0.1.0).2
	Sound test for unified DMI, no DMI configuration for other STMs, with 1 sound request at once and 1 segment in sound requests.: A sound with 1 segments of 10000ms duration is first played once, then played continuously for 25 seconds and then stopped.
ERTMS/ETCS on-board requirements tested	SUBSET-035 13.4.1.1, 13.4.1.2, 13.4.1.8, 13.4.5.3, 13.4.5.4
	ERA ERTMS 015560 (DMI Spec) 9.3.6
STM requirements tested	
Packets transmitted via FFFIS STM	STM-15, STM-46
ERTMS/ETCS on-board configuration	For active STM: Unified DMI service: 7a.1. No DMI configuration for any other STM
Comments and constraints	

Starting Conditions	Value	Comments
STM State	DA	
ETCS Mode	SN	
ETCS Level	NTC	
Train State	not relevant	



ETCS Train Data	not relevant	
Active DMI channel Connection	Established	
Other DMI channels Connections	not relevant	
TIU Connection	not relevant	
BIU Connection	not relevant	
JD Connection	not relevant	
TIU Regenerative Brake Command	not relevant	
TIU Magnetic Shoes Brake Command	not relevant	
TIU Eddy Current Brake Command for Emergency Brake	not relevant	
TIU Eddy Current Brake Command for Service Brake	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 Traction Status	not relevant	
TIU Direction Controller Position Status	not relevant	
TIU Cab Status	Cab A or B active	For the test it is not relevant, what cab is active
BIU Emergency Brake Command	not relevant	
BIU Service Brake Command	not relevant	
BIU Emergency Brake Status	not relevant	
BIU Service Brake Status	not relevant	
NTC isolation status	Not isolated for active STM. Not relevant for other STMs	



ERTMS/ETCS on-board Test Case

Step	Description/Comments	Input I/F	Input time	Input Action	Output I/F	Output time limit	Output action
1	STM requests one shot play for sound without sound identifier with 1 segments (256 Hz)	PROF	T0	connection of active DMI channel: Message-S1	DMI		Requested sound is played once.
2	STM requests continuous play for sound with identifier 1 with 1 segments (256 Hz)	PROF	T0+15s	connection of active DMI channel: Message-S2	DMI		Requested sound with identifier 1 is played continuously.
3	STM requests stop sound for sound with identifier 1	PROF	T0+40s	connection of active DMI channel: Message-S3	DMI		Sound is stopped.

Message-S1: STM requests one shot play for sound			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	13	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	57	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	0	
Q_SOUND(1)	2	1	One shot play
N_ITER(1)	5	1	1 segments
M_FREQ(1,1)	8	8	256Hz

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T_SOUND(1,1)	8	100	10000ms
Padding bits	6	000000b	

Message-S2: STM requests continuous play for sound			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	13	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	57	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	1	
Q_SOUND(1)	2	2	Continuous play
N_ITER(1)	5	1	1 segments
M_FREQ(1,1)	8	8	256Hz
T_SOUND(1,1)	8	100	10000ms
Padding bits	6	000000b	

Message-S3: STM requests stop sound for sound			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM

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L_MESSAGE	8	11	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	41	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	1	
Q_SOUND(1)	2	0	Stop sound
N_ITER(1)	5	0	no sound segments
Padding bits	6	000000b	

End Conditions	Value	Comments
STM State	unchanged	
ETCS Mode	unchanged	
ETCS Level	unchanged	
Train State	not relevant	
ETCS Train Data	not relevant	
Active DMI channel Connection	unchanged	
Other DMI channels Connections	not relevant	
TIU Connection	not relevant	
BIU Connection	not relevant	
JD Connection	not relevant	



TIU Regenerative Brake Command	not relevant	
TIU Magnetic Shoes Brake Command	not relevant	
TIU Eddy Current Brake Command for Emergency Brake	not relevant	
TIU Eddy Current Brake Command for Service Brake	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 Traction Status	not relevant	
TIU Direction Controller Position Status	not relevant	
TIU Cab Status	unchanged	
BIU Emergency Brake Command	not relevant	
BIU Service Brake Command	not relevant	
BIU Emergency Brake Status	not relevant	
BIU Service Brake Status	not relevant	
NTC isolation status	unchanged	

2.5.2 Test Case 7e.2

TEST CASE HEADER	
Test case identification	DMI Function
	7e1.0.2.(7e2.0.1.1.2.0).1.(7e2.0.1.2.1.0).1.(7e2.0.1.3.0.1.0).2
	Sound test for unified DMI, DMI configuration for other STMs, with 1 sound request at once and 1 segment in sound requests.:



	A sound with 1 segments of 10000ms duration is first played once, then played continuously for 25 seconds and then stopped. Same test steps and messages as in test case 7e. 1
ERTMS/ETCS on-board requirements tested	SUBSET-035 13.4.1.1, 13.4.1.2, 13.4.1.8, 13.4.5.3, 13.4.5.4
	ERA ERTMS 015560 (DMI Spec) 9.3.6
STM requirements tested	
Packets transmitted via FFFIS STM	STM-15, STM-46
ERTMS/ETCS on-board configuration	For active STM: Unified DMI service: 7a.1. DMI configuration 7a.3, 7a.5, 7a.6, 7a.7, 7a.8 or 7a.9 for at least one other STM
Comments and constraints	Starting and end conditions as for test case 7e.1

2.5.3 Test Case 7e.3

TEST CASE HEADER	
Test case identification	DMI Function
	7e1.0.1.(7e2.0.1.1.1.0).1.(7e2.0.1.2.1.0).1.(7e2.0.1.3.0.1.0).2
	Sound test for unified DMI, no DMI configuration for other STMs, with 1 sound request at once and 3 segments in sound requests.: A sound with 3 segments of 3100ms duration is first played once, then played continuously for 25 seconds and then stopped.
ERTMS/ETCS on-board requirements tested	SUBSET-035 13.4.1.1, 13.4.1.2, 13.4.1.8, 13.4.5.3, 13.4.5.4
	ERA ERTMS 015560 (DMI Spec) 9.3.6
STM requirements tested	
Packets transmitted via FFFIS STM	STM-15, STM-46



ERTMS/ETCS on-board configuration	For active STM: Unified DMI service: 7a.1. No DMI configuration for any other STM
Comments and constraints	Starting and end conditions as for test case 7e.1

ERTMS/ETCS on-board Test Case

Step	Description/Comments	Input I/F	Input time	Input Action	Output I/F	Output time limit	Output action
1	STM requests one shot play for sound with identifier 101 with 3 segments (256, 288, 320 Hz)	PROF	T0	connection of active DMI channel: Message-S1	DMI		Requested sound with identifier 101 is played once.
2	STM requests continuous play for sound with identifier 101 with 3 segments (256, 288, 320 Hz)	PROF	T0+15s	connection of active DMI channel: Message-S2	DMI		Requested sound with identifier 101 is played continuously.
3	STM requests stop sound for sound with identifier 101	PROF	T0+40s	connection of active DMI channel: Message-S3	DMI		Sound is stopped.

Message-S1: STM requests one shot play for sound			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	17	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	89	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	101	

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Q_SOUND(1)	2	1	One shot play
N_ITER(1)	5	3	3 segments
M_FREQ(1,1)	8	8	256Hz
T_SOUND(1,1)	8	31	3100ms
M_FREQ(1,2)	8	9	288Hz
T_SOUND(1,2)	8	31	3100ms
M_FREQ(1,3)	8	10	320Hz
T_SOUND(1,3)	8	31	3100ms
Padding bits	6	000000b	

Message-S2: STM requests continuous play for sound			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	17	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	89	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	101	
Q_SOUND(1)	2	2	Continuous play
N_ITER(1)	5	3	3 segments

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M_FREQ(1,1)	8	8	256Hz
T_SOUND(1,1)	8	31	3100ms
M_FREQ(1,2)	8	9	288Hz
T_SOUND(1,2)	8	31	3100ms
M_FREQ(1,3)	8	10	320Hz
T_SOUND(1,3)	8	31	3100ms
Padding bits	6	000000b	

Message-S3: STM requests stop sound for sound			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	11	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	41	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	101	
Q_SOUND(1)	2	0	Stop sound
N_ITER(1)	5	0	no sound segments
Padding bits	6	000000b	



2.5.4 Test Case 7e.4

TEST CASE HEADER	
Test case identification	DMI Function
	7e1.0.2.(7e2.0.1.1.1.0).1.(7e2.0.1.2.1.0).1.(7e2.0.1.3.0.1.0).2
	Sound test for unified DMI, DMI configuration for other STMs, with 1 sound request at once and 3 segments in sound requests.: A sound with 3 segments of 3100ms duration is first played once, then played continuously for 25 seconds and then stopped. Same test steps and messages as in test case 7e. 3
ERTMS/ETCS on-board requirements tested	SUBSET-035 13.4.1.1, 13.4.1.2, 13.4.1.8, 13.4.5.3, 13.4.5.4
	ERA ERTMS 015560 (DMI Spec) 9.3.6
STM requirements tested	
Packets transmitted via FFFIS STM	STM-15, STM-46
ERTMS/ETCS on-board configuration	For active STM: Unified DMI service: 7a.1.
	DMI configuration 7a.3, 7a.5, 7a.6, 7a.7, 7a.8 or 7a.9 for at least one other STM
Comments and constraints	Starting and end conditions as for test case 7e.1

2.5.5 Test Case 7e.5

TEST CASE HEADER	
Test case identification	DMI Function
	7e1.0.1.(7e2.0.1.1.2.0).1.(7e2.0.1.2.1.0).1.(7e2.0.1.3.0.1.0).2
	Sound test for unified DMI, no DMI configuration for other STMs, with 1 sound request at once and 7 segments in sound requests.: A sound with 7 segments of 1200ms duration is first played once, then played continuously for 25 seconds and then stopped.



ERTMS/ETCS on-board requirements tested	SUBSET-035 13.4.1.1, 13.4.1.2, 13.4.1.8, 13.4.5.3, 13.4.5.4
	ERA ERTMS 015560 (DMI Spec) 9.3.6
STM requirements tested	
Packets transmitted via FFFIS STM	STM-15, STM-46
ERTMS/ETCS on-board configuration	For active STM: Unified DMI service: 7a.1.
	No DMI configuration for any other STM
Comments and constraints	Starting and end conditions as for test case 7e.1

ERTMS/ETCS on-board Test Case

Step	Description/Comments	Input I/F	Input time	Input Action	Output I/F	Output time limit	Output action
1	STM requests one shot play for sound without sound identifier with 7 segments (256, 288, 320, 352, 384, 448, 480 Hz)	PROF	T0	connection of active DMI channel: Message-S1	DMI		Requested sound is played once.
2	STM requests continuous play for sound with identifier 201 with 7 segments (256, 288, 320, 352, 384, 448, 480 Hz)	PROF	T0+15s	connection of active DMI channel: Message-S2	DMI		Requested sound with identifier 201 is played continuously.
3	STM requests stop sound for sound with identifier 201	PROF	T0+40s	connection of active DMI channel: Message-S3	DMI		Sound is stopped.

Message-S1: STM requests one shot play for sound			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	25	Message Length



NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	153	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	0	
Q_SOUND(1)	2	1	One shot play
N_ITER(1)	5	7	7 segments
M_FREQ(1,1)	8	8	256Hz
T_SOUND(1,1)	8	12	1200ms
M_FREQ(1,2)	8	9	288Hz
T_SOUND(1,2)	8	12	1200ms
M_FREQ(1,3)	8	10	320Hz
T_SOUND(1,3)	8	12	1200ms
M_FREQ(1,4)	8	11	352Hz
T_SOUND(1,4)	8	12	1200ms
M_FREQ(1,5)	8	12	384Hz
T_SOUND(1,5)	8	12	1200ms
M_FREQ(1,6)	8	14	448Hz
T_SOUND(1,6)	8	12	1200ms
M_FREQ(1,7)	8	15	480Hz
T_SOUND(1,7)	8	12	1200ms



Padding bits	6	000000b	
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Message-S2: STM requests continuous play for sound			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	25	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	153	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	201	
Q_SOUND(1)	2	2	Continuous play
N_ITER(1)	5	7	7 segments
M_FREQ(1,1)	8	8	256Hz
T_SOUND(1,1)	8	12	1200ms
M_FREQ(1,2)	8	9	288Hz
T_SOUND(1,2)	8	12	1200ms
M_FREQ(1,3)	8	10	320Hz
T_SOUND(1,3)	8	12	1200ms
M_FREQ(1,4)	8	11	352Hz
T_SOUND(1,4)	8	12	1200ms

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M_FREQ(1,5)	8	12	384Hz
T_SOUND(1,5)	8	12	1200ms
M_FREQ(1,6)	8	14	448Hz
T_SOUND(1,6)	8	12	1200ms
M_FREQ(1,7)	8	15	480Hz
T_SOUND(1,7)	8	12	1200ms
Padding bits	6	000000b	

Message-S3: STM requests stop sound for sound			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	11	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	41	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	201	
Q_SOUND(1)	2	0	Stop sound
N_ITER(1)	5	0	no sound segments
Padding bits	6	000000b	



2.5.6 Test Case 7e.6

TEST CASE HEADER	
Test case identification	DMI Function
	7e1.0.2.(7e2.0.1.1.2.0).1.(7e2.0.1.2.1.0).1.(7e2.0.1.3.0.1.0).2
	Sound test for unified DMI, DMI configuration for other STMs, with 1 sound request at once and 7 segments in sound requests.: A sound with 7 segments of 1200ms duration is first played once, then played continuously for 25 seconds and then stopped. Same test steps and messages as in test case 7e. 5
ERTMS/ETCS on-board requirements tested	SUBSET-035 13.4.1.1, 13.4.1.2, 13.4.1.8, 13.4.5.3, 13.4.5.4
	ERA ERTMS 015560 (DMI Spec) 9.3.6
STM requirements tested	
Packets transmitted via FFFIS STM	STM-15, STM-46
ERTMS/ETCS on-board configuration	For active STM: Unified DMI service: 7a.1.
	DMI configuration 7a.3, 7a.5, 7a.6, 7a.7, 7a.8 or 7a.9 for at least one other STM
Comments and constraints	Starting and end conditions as for test case 7e.1

2.5.7 Test Case 7e.7

TEST CASE HEADER	
Test case identification	DMI Function
	7e1.0.1.(7e2.0.1.1.1.0).1.(7e2.0.1.2.1.0).1.(7e2.0.1.3.0.1.0).2
	Sound test for unified DMI, no DMI configuration for other STMs, with 1 sound request at once and 15 segments in sound requests.: A sound with 15 segments of 400ms duration is first played once, then played continuously for 25 seconds and then stopped.



ERTMS/ETCS on-board requirements tested	SUBSET-035 13.4.1.1, 13.4.1.2, 13.4.1.8, 13.4.5.3, 13.4.5.4
	ERA ERTMS 015560 (DMI Spec) 9.3.6
STM requirements tested	
Packets transmitted via FFFIS STM	STM-15, STM-46
ERTMS/ETCS on-board configuration	For active STM: Unified DMI service: 7a.1.
	No DMI configuration for any other STM
Comments and constraints	Starting and end conditions as for test case 7e.1

ERTMS/ETCS on-board Test Case

Step	Description/Comments	Input I/F	Input time	Input Action	Output I/F	Output time limit	Output action
1	STM requests one shot play for sound with identifier 51 with 15 segments (256, 288, 320, 352, 384, 448, 480, 512, 576, 672, 704, 768, 896, 992, 1056 Hz)	PROF	T0	connection of active DMI channel: Message-S1	DMI		Requested sound with identifier 51 is played once.
2	STM requests continuous play for sound with identifier 51 with 15 segments (256, 288, 320, 352, 384, 448, 480, 512, 576, 672, 704, 768, 896, 992, 1056 Hz)	PROF	T0+15s	connection of active DMI channel: Message-S2	DMI		Requested sound with identifier 51 is played continuously.
3	STM requests stop sound for sound with identifier 51	PROF	T0+40s	connection of active DMI channel: Message-S3	DMI		Sound is stopped.

Message-S1: STM requests one shot play for sound			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM

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L_MESSAGE	8	41	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	281	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	51	
Q_SOUND(1)	2	1	One shot play
N_ITER(1)	5	15	15 segments
M_FREQ(1,1)	8	8	256Hz
T_SOUND(1,1)	8	4	400ms
M_FREQ(1,2)	8	9	288Hz
T_SOUND(1,2)	8	4	400ms
M_FREQ(1,3)	8	10	320Hz
T_SOUND(1,3)	8	4	400ms
M_FREQ(1,4)	8	11	352Hz
T_SOUND(1,4)	8	4	400ms
M_FREQ(1,5)	8	12	384Hz
T_SOUND(1,5)	8	4	400ms
M_FREQ(1,6)	8	14	448Hz
T_SOUND(1,6)	8	4	400ms
M_FREQ(1,7)	8	15	480Hz



T_SOUND(1,7)	8	4	400ms
M_FREQ(1,8)	8	16	512Hz
T_SOUND(1,8)	8	4	400ms
M_FREQ(1,9)	8	18	576Hz
T_SOUND(1,9)	8	4	400ms
M_FREQ(1,10)	8	21	672Hz
T_SOUND(1,10)	8	4	400ms
M_FREQ(1,11)	8	22	704Hz
T_SOUND(1,11)	8	4	400ms
M_FREQ(1,12)	8	24	768Hz
T_SOUND(1,12)	8	4	400ms
M_FREQ(1,13)	8	28	896Hz
T_SOUND(1,13)	8	4	400ms
M_FREQ(1,14)	8	31	992Hz
T_SOUND(1,14)	8	4	400ms
M_FREQ(1,15)	8	33	1056Hz
T_SOUND(1,15)	8	4	400ms
Padding bits	6	000000b	

Message-S2: STM requests continuous play for sound			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	41	Message Length



NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	281	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	51	
Q_SOUND(1)	2	2	Continuous play
N_ITER(1)	5	15	15 segments
M_FREQ(1,1)	8	8	256Hz
T_SOUND(1,1)	8	4	400ms
M_FREQ(1,2)	8	9	288Hz
T_SOUND(1,2)	8	4	400ms
M_FREQ(1,3)	8	10	320Hz
T_SOUND(1,3)	8	4	400ms
M_FREQ(1,4)	8	11	352Hz
T_SOUND(1,4)	8	4	400ms
M_FREQ(1,5)	8	12	384Hz
T_SOUND(1,5)	8	4	400ms
M_FREQ(1,6)	8	14	448Hz
T_SOUND(1,6)	8	4	400ms
M_FREQ(1,7)	8	15	480Hz
T_SOUND(1,7)	8	4	400ms



M_FREQ(1,8)	8	16	512Hz
T_SOUND(1,8)	8	4	400ms
M_FREQ(1,9)	8	18	576Hz
T_SOUND(1,9)	8	4	400ms
M_FREQ(1,10)	8	21	672Hz
T_SOUND(1,10)	8	4	400ms
M_FREQ(1,11)	8	22	704Hz
T_SOUND(1,11)	8	4	400ms
M_FREQ(1,12)	8	24	768Hz
T_SOUND(1,12)	8	4	400ms
M_FREQ(1,13)	8	28	896Hz
T_SOUND(1,13)	8	4	400ms
M_FREQ(1,14)	8	31	992Hz
T_SOUND(1,14)	8	4	400ms
M_FREQ(1,15)	8	33	1056Hz
T_SOUND(1,15)	8	4	400ms
Padding bits	6	000000b	

Message-S3: STM requests stop sound for sound			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	11	Message Length
NID_PACKET	8	15	State report from STM (STM-15)

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L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	41	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	51	
Q_SOUND(1)	2	0	Stop sound
N_ITER(1)	5	0	no sound segments
Padding bits	6	000000b	

2.5.8 Test Case 7e.8

TEST CASE HEADER	
Test case identification	DMI Function
	7e1.0.2.(7e2.0.1.1.1.0).1.(7e2.0.1.2.1.0).1.(7e2.0.1.3.0.1.0).2
	Sound test for unified DMI, DMI configuration for other STMs, with 1 sound request at once and 15 segments in sound requests.: A sound with 15 segments of 400ms duration is first played once, then played continuously for 25 seconds and then stopped.
	Same test steps and messages as in test case 7e. 7
ERTMS/ETCS on-board requirements tested	SUBSET-035 13.4.1.1, 13.4.1.2, 13.4.1.8, 13.4.5.3, 13.4.5.4
	ERA ERTMS 015560 (DMI Spec) 9.3.6
STM requirements tested	
Packets transmitted via FFFIS STM	STM-15, STM-46



ERTMS/ETCS on-board configuration	For active STM: Unified DMI service: 7a.1. DMI configuration 7a.3, 7a.5, 7a.6, 7a.7, 7a.8 or 7a.9 for at least one other STM
Comments and constraints	Starting and end conditions as for test case 7e.1

2.5.9 Test Case 7e.9

TEST CASE HEADER	
Test case identification	DMI Function
	7e1.0.1.(7e2.0.1.1.2.0).1.(7e2.0.1.2.1.0).1.(7e2.0.1.3.0.1.0).2
	Sound test for unified DMI, no DMI configuration for other STMs, with 1 sound request at once and 31 segments in sound requests.:
	A sound with 31 segments of 100ms duration is first played once, then played continuously for 25 seconds and then stopped.
ERTMS/ETCS on-board requirements tested	SUBSET-035 13.4.1.1, 13.4.1.2, 13.4.1.8, 13.4.5.3, 13.4.5.4
	ERA ERTMS 015560 (DMI Spec) 9.3.6
STM requirements tested	
Packets transmitted via FFFIS STM	STM-15, STM-46
ERTMS/ETCS on-board configuration	For active STM: Unified DMI service: 7a.1. No DMI configuration for any other STM
Comments and constraints	Starting and end conditions as for test case 7e.1

ERTMS/ETCS on-board Test Case

Step	Description/Comments	Input I/F	Input time	Input Action	Output I/F	Output time limit	Output action
1	STM requests one shot play for	PROF	T0	connection of active DMI channel:	DMI		Requested sound is played once.



	sound without sound identifier with 31 segments (256, 288, 320, 352, 384, 448, 480, 512, 576, 672, 704, 768, 896, 992, 1056, 1120, 1056, 992, 896, 768, 704, 672, 576, 512, 480, 448, 384, 352, 320, 288, 256 Hz)			Message-S1			
2	STM requests continuous play for sound with identifier 151 with 31 segments (256, 288, 320, 352, 384, 448, 480, 512, 576, 672, 704, 768, 896, 992, 1056, 1120, 1056, 992, 896, 768, 704, 672, 576, 512, 480, 448, 384, 352, 320, 288, 256 Hz)	PROF	T0+15s	connection of active DMI channel: Message-S2	DMI		Requested sound with identifier 151 is played continuously.
3	STM requests stop sound for sound with identifier 151	PROF	T0+40s	connection of active DMI channel: Message-S3	DMI		Sound is stopped.

Message-S1: STM requests one shot play for sound			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	73	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	537	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	0	
Q_SOUND(1)	2	1	One shot play

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N_ITER(1)	5	31	31 segments
M_FREQ(1,1)	8	8	256Hz
T_SOUND(1,1)	8	1	100ms
M_FREQ(1,2)	8	9	288Hz
T_SOUND(1,2)	8	1	100ms
M_FREQ(1,3)	8	10	320Hz
T_SOUND(1,3)	8	1	100ms
M_FREQ(1,4)	8	11	352Hz
T_SOUND(1,4)	8	1	100ms
M_FREQ(1,5)	8	12	384Hz
T_SOUND(1,5)	8	1	100ms
M_FREQ(1,6)	8	14	448Hz
T_SOUND(1,6)	8	1	100ms
M_FREQ(1,7)	8	15	480Hz
T_SOUND(1,7)	8	1	100ms
M_FREQ(1,8)	8	16	512Hz
T_SOUND(1,8)	8	1	100ms
M_FREQ(1,9)	8	18	576Hz
T_SOUND(1,9)	8	1	100ms
M_FREQ(1,10)	8	21	672Hz
T_SOUND(1,10)	8	1	100ms
M_FREQ(1,11)	8	22	704Hz
T_SOUND(1,11)	8	1	100ms



M_FREQ(1,12)	8	24	768Hz
T_SOUND(1,12)	8	1	100ms
M_FREQ(1,13)	8	28	896Hz
T_SOUND(1,13)	8	1	100ms
M_FREQ(1,14)	8	31	992Hz
T_SOUND(1,14)	8	1	100ms
M_FREQ(1,15)	8	33	1056Hz
T_SOUND(1,15)	8	1	100ms
M_FREQ(1,16)	8	35	1120Hz
T_SOUND(1,16)	8	1	100ms
M_FREQ(1,17)	8	33	1056Hz
T_SOUND(1,17)	8	1	100ms
M_FREQ(1,18)	8	31	992Hz
T_SOUND(1,18)	8	1	100ms
M_FREQ(1,19)	8	28	896Hz
T_SOUND(1,19)	8	1	100ms
M_FREQ(1,20)	8	24	768Hz
T_SOUND(1,20)	8	1	100ms
M_FREQ(1,21)	8	22	704Hz
T_SOUND(1,21)	8	1	100ms
M_FREQ(1,22)	8	21	672Hz
T_SOUND(1,22)	8	1	100ms
M_FREQ(1,23)	8	18	576Hz



T_SOUND(1,23)	8	1	100ms
M_FREQ(1,24)	8	16	512Hz
T_SOUND(1,24)	8	1	100ms
M_FREQ(1,25)	8	15	480Hz
T_SOUND(1,25)	8	1	100ms
M_FREQ(1,26)	8	14	448Hz
T_SOUND(1,26)	8	1	100ms
M_FREQ(1,27)	8	12	384Hz
T_SOUND(1,27)	8	1	100ms
M_FREQ(1,28)	8	11	352Hz
T_SOUND(1,28)	8	1	100ms
M_FREQ(1,29)	8	10	320Hz
T_SOUND(1,29)	8	1	100ms
M_FREQ(1,30)	8	9	288Hz
T_SOUND(1,30)	8	1	100ms
M_FREQ(1,31)	8	8	256Hz
T_SOUND(1,31)	8	1	100ms
Padding bits	6	000000b	

Message-S2: STM requests continuous play for sound			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	73	Message Length



NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	537	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	151	
Q_SOUND(1)	2	2	Continuous play
N_ITER(1)	5	31	31 segments
M_FREQ(1,1)	8	8	256Hz
T_SOUND(1,1)	8	1	100ms
M_FREQ(1,2)	8	9	288Hz
T_SOUND(1,2)	8	1	100ms
M_FREQ(1,3)	8	10	320Hz
T_SOUND(1,3)	8	1	100ms
M_FREQ(1,4)	8	11	352Hz
T_SOUND(1,4)	8	1	100ms
M_FREQ(1,5)	8	12	384Hz
T_SOUND(1,5)	8	1	100ms
M_FREQ(1,6)	8	14	448Hz
T_SOUND(1,6)	8	1	100ms
M_FREQ(1,7)	8	15	480Hz
T_SOUND(1,7)	8	1	100ms



M_FREQ(1,8)	8	16	512Hz
T_SOUND(1,8)	8	1	100ms
M_FREQ(1,9)	8	18	576Hz
T_SOUND(1,9)	8	1	100ms
M_FREQ(1,10)	8	21	672Hz
T_SOUND(1,10)	8	1	100ms
M_FREQ(1,11)	8	22	704Hz
T_SOUND(1,11)	8	1	100ms
M_FREQ(1,12)	8	24	768Hz
T_SOUND(1,12)	8	1	100ms
M_FREQ(1,13)	8	28	896Hz
T_SOUND(1,13)	8	1	100ms
M_FREQ(1,14)	8	31	992Hz
T_SOUND(1,14)	8	1	100ms
M_FREQ(1,15)	8	33	1056Hz
T_SOUND(1,15)	8	1	100ms
M_FREQ(1,16)	8	35	1120Hz
T_SOUND(1,16)	8	1	100ms
M_FREQ(1,17)	8	33	1056Hz
T_SOUND(1,17)	8	1	100ms
M_FREQ(1,18)	8	31	992Hz
T_SOUND(1,18)	8	1	100ms
M_FREQ(1,19)	8	28	896Hz



T_SOUND(1,19)	8	1	100ms
M_FREQ(1,20)	8	24	768Hz
T_SOUND(1,20)	8	1	100ms
M_FREQ(1,21)	8	22	704Hz
T_SOUND(1,21)	8	1	100ms
M_FREQ(1,22)	8	21	672Hz
T_SOUND(1,22)	8	1	100ms
M_FREQ(1,23)	8	18	576Hz
T_SOUND(1,23)	8	1	100ms
M_FREQ(1,24)	8	16	512Hz
T_SOUND(1,24)	8	1	100ms
M_FREQ(1,25)	8	15	480Hz
T_SOUND(1,25)	8	1	100ms
M_FREQ(1,26)	8	14	448Hz
T_SOUND(1,26)	8	1	100ms
M_FREQ(1,27)	8	12	384Hz
T_SOUND(1,27)	8	1	100ms
M_FREQ(1,28)	8	11	352Hz
T_SOUND(1,28)	8	1	100ms
M_FREQ(1,29)	8	10	320Hz
T_SOUND(1,29)	8	1	100ms
M_FREQ(1,30)	8	9	288Hz
T_SOUND(1,30)	8	1	100ms



M_FREQ(1,31)	8	8	256Hz
T_SOUND(1,31)	8	1	100ms
Padding bits	6	000000b	

Message-S3: STM requests stop sound for sound			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	11	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	41	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	151	
Q_SOUND(1)	2	0	Stop sound
N_ITER(1)	5	0	no sound segments
Padding bits	6	000000b	

2.5.10 Test Case 7e.10

TEST CASE HEADER	
Test case identification	DMI Function

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	7e1.0.2.(7e2.0.1.1.2.0).1.(7e2.0.1.2.1.0).1.(7e2.0.1.3.0.1.0).2
	Sound test for unified DMI, DMI configuration for other STMs, with 1 sound request at once and 31 segments in sound requests.: A sound with 31 segments of 100ms duration is first played once, then played continuously for 25 seconds and then stopped. Same test steps and messages as in test case 7e. 9
ERTMS/ETCS on-board requirements tested	SUBSET-035 13.4.1.1, 13.4.1.2, 13.4.1.8, 13.4.5.3, 13.4.5.4
	ERA ERTMS 015560 (DMI Spec) 9.3.6
STM requirements tested	
Packets transmitted via FFFIS STM	STM-15, STM-46
ERTMS/ETCS on-board configuration	For active STM: Unified DMI service: 7a.1.
	DMI configuration 7a.3, 7a.5, 7a.6, 7a.7, 7a.8 or 7a.9 for at least one other STM
Comments and constraints	Starting and end conditions as for test case 7e.1

2.5.11 Test Case 7e.11

TEST CASE HEADER	
Test case identification	DMI Function
	7e1.0.1.(7e2.0.2.1.1.1.1.0).1.(7e2.0.2.1.1.2.1.0).1.(7e2.0.2.1.1.3.0.1.0).1. (7e2.0.2.2.1.1.1.0).1.(7e2.0.2.3.0.1.1.1.0).1.(7e2.0.2.2.1.2.1.0).1. (7e2.0.2.3.0.1.3.0.1.0).1.(7e2.0.2.2.1.1.1.0).1.(7e2.0.2.3.0.1.2.1.0).1. (7e2.0.2.2.1.3.0.1.0).1.(7e2.0.2.3.0.1.1.1.0).2
	Sound test for unified DMI, no DMI configuration for other STMs, with 2 sound requests at once and 1 segment in sound requests.: Two sounds with 1 segments of 10000ms duration are requested and partly played at the same time. All possible combinations of Q_SOUND are tested.



ERTMS/ETCS on-board requirements tested	SUBSET-035 13.4.1.1, 13.4.1.2, 13.4.1.8, 13.4.5.3, 13.4.5.4
	ERA ERTMS 015560 (DMI Spec) 9.3.6
STM requirements tested	
Packets transmitted via FFFIS STM	STM-15, STM-46
ERTMS/ETCS on-board configuration	For active STM: Unified DMI service: 7a.1.
	No DMI configuration for any other STM
Comments and constraints	Starting and end conditions as for test case 7e.1

ERTMS/ETCS on-board Test Case

Step	Description/Comments	Input I/F	Input time	Input Action	Output I/F	Output time limit	Output action
1	STM requests one shot play for sound with identifier 1 with 1 segments (256 Hz) and STM requests one shot play for sound with identifier 2 with 1 segments (128 Hz)	PROF	T0	connection of active DMI channel: Message-S1	DMI		First requested sound with identifier 1 is played once. Second requested sound with identifier 2 is played once
2	STM requests one shot play for sound with identifier 1 with 1 segments (256 Hz) and STM requests continuous play for sound with identifier 2 with 1 segments (128 Hz)	PROF	T0+15s	connection of active DMI channel: Message-S2	DMI		First requested sound with identifier 1 is played once. Second requested sound with identifier 2 is played continuously
3	STM requests one shot play for sound with identifier 1 with 1 segments (256 Hz) and STM requests stop sound for	PROF	T0+40s	connection of active DMI channel: Message-S3	DMI		First requested sound with identifier 1 is played once. Sound with identifier 2 is stopped.



	sound with identifier 2						
4	STM requests continuous play for sound with identifier 1 with 1 segments (256 Hz) and STM requests one shot play for sound with identifier 2 with 1 segments (128 Hz)	PROF	T0+55s	connection of active DMI channel: Message-S4	DMI		First requested sound with identifier 1 is played continuously. Second requested sound with identifier 2 is played once
5	STM requests stop sound for sound with identifier 1 and STM requests one shot play for sound with identifier 2 with 1 segments (128 Hz)	PROF	T0+80s	connection of active DMI channel: Message-S5	DMI		Sound with identifier 1 is stopped. Second requested sound with identifier 2 is played once
6	STM requests continuous play for sound with identifier 1 with 1 segments (256 Hz) and STM requests continuous play for sound with identifier 2 with 1 segments (128 Hz)	PROF	T0+95s	connection of active DMI channel: Message-S6	DMI		First requested sound with identifier 1 is played continuously. Second requested sound with identifier 2 is played continuously
7	STM requests stop sound for sound with identifier 1 and STM requests stop sound for sound with identifier 2	PROF	T0+120s	connection of active DMI channel: Message-S7	DMI		Sound with identifier 1 is stopped. Sound with identifier 2 is stopped.
8	STM requests continuous play for sound with identifier 1 with 1 segments (256 Hz) and STM requests one shot play for sound with identifier 3 with 1 segments (512 Hz)	PROF	T0+135s	connection of active DMI channel: Message-S8	DMI		First requested sound with identifier 1 is played continuously. Second requested sound with identifier 3 is played once
9	STM requests stop sound for sound with identifier 1 and STM requests continuous play	PROF	T0+160s	connection of active DMI channel: Message-S9	DMI		Sound with identifier 1 is stopped. Second requested sound with identifier 3 is played continuously



	for sound with identifier 3 with 1 segments (512 Hz)						
10	STM requests continuous play for sound with identifier 1 with 1 segments (256 Hz) and STM requests stop sound for sound with identifier 3	PROF	T0+185s	connection of active DMI channel: Message-S10	DMI		First requested sound with identifier 1 is played continuously. Sound with identifier 3 is stopped.
11	STM requests stop sound for sound with identifier 1 and STM requests one shot play for sound with identifier 3 with 1 segments (512 Hz)	PROF	T0+210s	connection of active DMI channel: Message-S11	DMI		Sound with identifier 1 is stopped. Second requested sound with identifier 3 is played once

Message-S1: STM requests one shot play for first sound and one shot play for second sound			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	17	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	88	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	1	
Q_SOUND(1)	2	1	One shot play
N_ITER(1)	5	1	1 segments
M_FREQ(1,1)	8	8	256Hz

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T_SOUND(1,1)	8	100	10000ms
NID_SOUND(2)	8	2	
Q_SOUND(2)	2	1	One shot play
N_ITER(2)	5	1	1 segments
M_FREQ(2,1)	8	4	128Hz
T_SOUND(2,1)	8	100	10000ms
Padding bits	7	0000000b	

Message-S2: STM requests one shot play for first sound and continuous play for second sound			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	17	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	88	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	1	
Q_SOUND(1)	2	1	One shot play
N_ITER(1)	5	1	1 segments
M_FREQ(1,1)	8	8	256Hz
T_SOUND(1,1)	8	100	10000ms

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NID_SOUND(2)	8	2	
Q_SOUND(2)	2	2	Continuous play
N_ITER(2)	5	1	1 segments
M_FREQ(2,1)	8	4	128Hz
T_SOUND(2,1)	8	100	10000ms
Padding bits	7	0000000b	

Message-S3: STM requests one shot play for first sound and stop sound for second sound			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	15	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	72	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	1	
Q_SOUND(1)	2	1	One shot play
N_ITER(1)	5	1	1 segments
M_FREQ(1,1)	8	8	256Hz
T_SOUND(1,1)	8	100	10000ms
NID_SOUND(2)	8	2	



Q_SOUND(2)	2	0	Stop sound
N_ITER(2)	5	0	no sound segments
Padding bits	7	0000000b	

Message-S4: STM requests continuous play for first sound and one shot play for second sound			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	17	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	88	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	1	
Q_SOUND(1)	2	2	Continuous play
N_ITER(1)	5	1	1 segments
M_FREQ(1,1)	8	8	256Hz
T_SOUND(1,1)	8	100	10000ms
NID_SOUND(2)	8	2	
Q_SOUND(2)	2	1	One shot play
N_ITER(2)	5	1	1 segments
M_FREQ(2,1)	8	4	128Hz

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T_SOUND(2,1)	8	100	10000ms
Padding bits	7	0000000b	

Message-S5: STM requests stop sound for first sound and one shot play for second sound			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	15	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	72	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	1	
Q_SOUND(1)	2	0	Stop sound
N_ITER(1)	5	0	no sound segments
NID_SOUND(2)	8	2	
Q_SOUND(2)	2	1	One shot play
N_ITER(2)	5	1	1 segments
M_FREQ(2,1)	8	4	128Hz
T_SOUND(2,1)	8	100	10000ms
Padding bits	7	0000000b	



Message-S6: STM requests continuous play for first sound and continuous play for second sound

VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	17	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	88	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	1	
Q_SOUND(1)	2	2	Continuous play
N_ITER(1)	5	1	1 segments
M_FREQ(1,1)	8	8	256Hz
T_SOUND(1,1)	8	100	10000ms
NID_SOUND(2)	8	2	
Q_SOUND(2)	2	2	Continuous play
N_ITER(2)	5	1	1 segments
M_FREQ(2,1)	8	4	128Hz
T_SOUND(2,1)	8	100	10000ms
Padding bits	7	0000000b	

Message-S7: STM requests stop sound for first sound and stop sound for second sound



VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	13	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	56	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	1	
Q_SOUND(1)	2	0	Stop sound
N_ITER(1)	5	0	no sound segments
NID_SOUND(2)	8	2	
Q_SOUND(2)	2	0	Stop sound
N_ITER(2)	5	0	no sound segments
Padding bits	7	0000000b	

Message-S8: STM requests continuous play for first sound and one shot play for second sound

VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	17	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length



NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	88	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	1	
Q_SOUND(1)	2	2	Continuous play
N_ITER(1)	5	1	1 segments
M_FREQ(1,1)	8	8	256Hz
T_SOUND(1,1)	8	100	10000ms
NID_SOUND(2)	8	3	
Q_SOUND(2)	2	1	One shot play
N_ITER(2)	5	1	1 segments
M_FREQ(2,1)	8	16	512Hz
T_SOUND(2,1)	8	100	10000ms
Padding bits	7	0000000b	

Message-S9: STM requests stop sound for first sound and continuous play for second sound			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	15	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA

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NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	72	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	1	
Q_SOUND(1)	2	0	Stop sound
N_ITER(1)	5	0	no sound segments
NID_SOUND(2)	8	3	
Q_SOUND(2)	2	2	Continuous play
N_ITER(2)	5	1	1 segments
M_FREQ(2,1)	8	16	512Hz
T_SOUND(2,1)	8	100	10000ms
Padding bits	7	0000000b	

Message-S10: STM requests continuous play for first sound and stop sound for second sound			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	15	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	72	Packet Length
N_ITER	5	2	



NID_SOUND(1)	8	1	
Q_SOUND(1)	2	2	Continuous play
N_ITER(1)	5	1	1 segments
M_FREQ(1,1)	8	8	256Hz
T_SOUND(1,1)	8	100	10000ms
NID_SOUND(2)	8	3	
Q_SOUND(2)	2	0	Stop sound
N_ITER(2)	5	0	no sound segments
Padding bits	7	0000000b	

Message-S11: STM requests stop sound for first sound and one shot play for second sound			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	15	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	72	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	1	
Q_SOUND(1)	2	0	Stop sound
N_ITER(1)	5	0	no sound segments

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NID_SOUND(2)	8	3	
Q_SOUND(2)	2	1	One shot play
N_ITER(2)	5	1	1 segments
M_FREQ(2,1)	8	16	512Hz
T_SOUND(2,1)	8	100	10000ms
Padding bits	7	0000000b	

2.5.12 Test Case 7e.12

TEST CASE HEADER	
Test case identification	DMI Function
	7e1.0.2.(7e2.0.2.1.1.1.1.0).1.(7e2.0.2.1.1.2.1.0).1.(7e2.0.2.1.1.3.0.1.0).1. (7e2.0.2.2.1.1.1.0).1.(7e2.0.2.3.0.1.1.1.0).1.(7e2.0.2.2.1.2.1.0).1. (7e2.0.2.3.0.1.3.0.1.0).1.(7e2.0.2.2.1.1.1.0).1.(7e2.0.2.3.0.1.2.1.0).1. (7e2.0.2.2.1.3.0.1.0).1.(7e2.0.2.3.0.1.1.1.0).2
	Sound test for unified DMI, DMI configuration for other STMs, with 2 sound requests at once and 1 segment in sound requests.: Two sounds with 1 segments of 10000ms duration are requested and partly played at the same time. All possible combinations of Q_SOUND are tested. Same test steps and messages as in test case 7e. 11
ERTMS/ETCS on-board requirements tested	SUBSET-035 13.4.1.1, 13.4.1.2, 13.4.1.8, 13.4.5.3, 13.4.5.4
	ERA ERTMS 015560 (DMI Spec) 9.3.6
STM requirements tested	
Packets transmitted via FFFIS	STM-15, STM-46



STM	
ERTMS/ETCS on-board configuration	For active STM: Unified DMI service: 7a.1. DMI configuration 7a.3, 7a.5, 7a.6, 7a.7, 7a.8 or 7a.9 for at least one other STM
Comments and constraints	Starting and end conditions as for test case 7e.1

2.5.13 Test Case 7e.13

TEST CASE HEADER	
Test case identification	DMI Function
	7e1.0.1.(7e2.0.2.1.2.1.2.0).1.(7e2.0.2.1.2.2.1.0).1.(7e2.0.2.1.2.3.0.1.0).1. (7e2.0.2.2.1.1.2.0).1.(7e2.0.2.3.0.1.1.2.0).1.(7e2.0.2.2.1.2.1.0).1. (7e2.0.2.3.0.1.3.0.1.0).1.(7e2.0.2.2.1.1.2.0).1.(7e2.0.2.3.0.1.2.1.0).1. (7e2.0.2.2.1.3.0.1.0).1.(7e2.0.2.3.0.1.1.2.0).2
	Sound test for unified DMI, no DMI configuration for other STMs, with 2 sound requests at once and 3 segments in sound requests.: Two sounds with 3 segments of 3100ms duration are requested and partly played at the same time. All possible combinations of Q_SOUND are tested.
ERTMS/ETCS on-board requirements tested	SUBSET-035 13.4.1.1, 13.4.1.2, 13.4.1.8, 13.4.5.3, 13.4.5.4
	ERA ERTMS 015560 (DMI Spec) 9.3.6
STM requirements tested	
Packets transmitted via FFFIS STM	STM-15, STM-46
ERTMS/ETCS on-board configuration	For active STM: Unified DMI service: 7a.1. No DMI configuration for any other STM
Comments and constraints	Starting and end conditions as for test case 7e.1



ERTMS/ETCS on-board Test Case

Step	Description/Comments	Input I/F	Input time	Input Action	Output I/F	Output time limit	Output action
1	STM requests one shot play for sound without sound identifier with 3 segments (256, 288, 320 Hz) and STM requests one shot play for sound without sound identifier with 3 segments (128, 640, 1152 Hz)	PROF	T0	connection of active DMI channel: Message-S1	DMI		First requested sound is played once. Second requested sound is played once
2	STM requests one shot play for sound without sound identifier with 3 segments (256, 288, 320 Hz) and STM requests continuous play for sound with identifier 102 with 3 segments (128, 640, 1152 Hz)	PROF	T0+15s	connection of active DMI channel: Message-S2	DMI		First requested sound is played once. Second requested sound with identifier 102 is played continuously
3	STM requests one shot play for sound without sound identifier with 3 segments (256, 288, 320 Hz) and STM requests stop sound for sound with identifier 102	PROF	T0+40s	connection of active DMI channel: Message-S3	DMI		First requested sound is played once. Sound with identifier 102 is stopped.
4	STM requests continuous play for sound with identifier 101 with 3 segments (256, 288, 320 Hz) and STM requests one shot play for sound without sound identifier with 3 segments (128, 640, 1152 Hz)	PROF	T0+55s	connection of active DMI channel: Message-S4	DMI		First requested sound with identifier 101 is played continuously. Second requested sound is played once
5	STM requests stop sound for sound with identifier 101 and STM requests one shot play for sound without sound identifier with 3	PROF	T0+80s	connection of active DMI channel: Message-S5	DMI		Sound with identifier 101 is stopped. Second requested sound is played once



	segments (128, 640, 1152 Hz)						
6	STM requests continuous play for sound with identifier 101 with 3 segments (256, 288, 320 Hz) and STM requests continuous play for sound with identifier 102 with 3 segments (128, 640, 1152 Hz)	PROF	T0+95s	connection of active DMI channel: Message-S6	DMI		First requested sound with identifier 101 is played continuously. Second requested sound with identifier 102 is played continuously
7	STM requests stop sound for sound with identifier 101 and STM requests stop sound for sound with identifier 102	PROF	T0+120s	connection of active DMI channel: Message-S7	DMI		Sound with identifier 101 is stopped. Sound with identifier 102 is stopped.
8	STM requests continuous play for sound with identifier 101 with 3 segments (256, 288, 320 Hz) and STM requests one shot play for sound without sound identifier with 3 segments (512, 256, 0 Hz)	PROF	T0+135s	connection of active DMI channel: Message-S8	DMI		First requested sound with identifier 101 is played continuously. Second requested sound is played once
9	STM requests stop sound for sound with identifier 101 and STM requests continuous play for sound with identifier 103 with 3 segments (512, 256, 0 Hz)	PROF	T0+160s	connection of active DMI channel: Message-S9	DMI		Sound with identifier 101 is stopped. Second requested sound with identifier 103 is played continuously
10	STM requests continuous play for sound with identifier 101 with 3 segments (256, 288, 320 Hz) and STM requests stop sound for sound with identifier 103	PROF	T0+185s	connection of active DMI channel: Message-S10	DMI		First requested sound with identifier 101 is played continuously. Sound with identifier 103 is stopped.
11	STM requests stop sound for sound with identifier 101 and STM requests one shot play for sound without sound identifier with 3	PROF	T0+210s	connection of active DMI channel: Message-S11	DMI		Sound with identifier 101 is stopped. Second requested sound is played once



segments (512, 256, 0 Hz)						
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Message-S1: STM requests one shot play for first sound and one shot play for second sound			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	25	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	152	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	0	
Q_SOUND(1)	2	1	One shot play
N_ITER(1)	5	3	3 segments
M_FREQ(1,1)	8	8	256Hz
T_SOUND(1,1)	8	31	3100ms
M_FREQ(1,2)	8	9	288Hz
T_SOUND(1,2)	8	31	3100ms
M_FREQ(1,3)	8	10	320Hz
T_SOUND(1,3)	8	31	3100ms
NID_SOUND(2)	8	0	
Q_SOUND(2)	2	1	One shot play
N_ITER(2)	5	3	3 segments

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M_FREQ(2,1)	8	4	128Hz
T_SOUND(2,1)	8	31	3100ms
M_FREQ(2,2)	8	20	640Hz
T_SOUND(2,2)	8	31	3100ms
M_FREQ(2,3)	8	36	1152Hz
T_SOUND(2,3)	8	31	3100ms
Padding bits	7	0000000b	

Message-S2: STM requests one shot play for first sound and continuous play for second sound			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	25	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	152	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	0	
Q_SOUND(1)	2	1	One shot play
N_ITER(1)	5	3	3 segments
M_FREQ(1,1)	8	8	256Hz
T_SOUND(1,1)	8	31	3100ms



M_FREQ(1,2)	8	9	288Hz
T_SOUND(1,2)	8	31	3100ms
M_FREQ(1,3)	8	10	320Hz
T_SOUND(1,3)	8	31	3100ms
NID_SOUND(2)	8	102	
Q_SOUND(2)	2	2	Continuous play
N_ITER(2)	5	3	3 segments
M_FREQ(2,1)	8	4	128Hz
T_SOUND(2,1)	8	31	3100ms
M_FREQ(2,2)	8	20	640Hz
T_SOUND(2,2)	8	31	3100ms
M_FREQ(2,3)	8	36	1152Hz
T_SOUND(2,3)	8	31	3100ms
Padding bits	7	0000000b	

Message-S3: STM requests one shot play for first sound and stop sound for second sound			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	19	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)



L_PACKET	13	104	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	0	
Q_SOUND(1)	2	1	One shot play
N_ITER(1)	5	3	3 segments
M_FREQ(1,1)	8	8	256Hz
T_SOUND(1,1)	8	31	3100ms
M_FREQ(1,2)	8	9	288Hz
T_SOUND(1,2)	8	31	3100ms
M_FREQ(1,3)	8	10	320Hz
T_SOUND(1,3)	8	31	3100ms
NID_SOUND(2)	8	102	
Q_SOUND(2)	2	0	Stop sound
N_ITER(2)	5	0	no sound segments
Padding bits	7	0000000b	

Message-S4: STM requests continuous play for first sound and one shot play for second sound			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	25	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA



NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	152	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	101	
Q_SOUND(1)	2	2	Continuous play
N_ITER(1)	5	3	3 segments
M_FREQ(1,1)	8	8	256Hz
T_SOUND(1,1)	8	31	3100ms
M_FREQ(1,2)	8	9	288Hz
T_SOUND(1,2)	8	31	3100ms
M_FREQ(1,3)	8	10	320Hz
T_SOUND(1,3)	8	31	3100ms
NID_SOUND(2)	8	0	
Q_SOUND(2)	2	1	One shot play
N_ITER(2)	5	3	3 segments
M_FREQ(2,1)	8	4	128Hz
T_SOUND(2,1)	8	31	3100ms
M_FREQ(2,2)	8	20	640Hz
T_SOUND(2,2)	8	31	3100ms
M_FREQ(2,3)	8	36	1152Hz
T_SOUND(2,3)	8	31	3100ms
Padding bits	7	0000000b	



Message-S5: STM requests stop sound for first sound and one shot play for second sound

VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	19	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	104	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	101	
Q_SOUND(1)	2	0	Stop sound
N_ITER(1)	5	0	no sound segments
NID_SOUND(2)	8	0	
Q_SOUND(2)	2	1	One shot play
N_ITER(2)	5	3	3 segments
M_FREQ(2,1)	8	4	128Hz
T_SOUND(2,1)	8	31	3100ms
M_FREQ(2,2)	8	20	640Hz
T_SOUND(2,2)	8	31	3100ms
M_FREQ(2,3)	8	36	1152Hz
T_SOUND(2,3)	8	31	3100ms
Padding bits	7	0000000b	



Message-S6: STM requests continuous play for first sound and continuous play for second sound

VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	25	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	152	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	101	
Q_SOUND(1)	2	2	Continuous play
N_ITER(1)	5	3	3 segments
M_FREQ(1,1)	8	8	256Hz
T_SOUND(1,1)	8	31	3100ms
M_FREQ(1,2)	8	9	288Hz
T_SOUND(1,2)	8	31	3100ms
M_FREQ(1,3)	8	10	320Hz
T_SOUND(1,3)	8	31	3100ms
NID_SOUND(2)	8	102	
Q_SOUND(2)	2	2	Continuous play
N_ITER(2)	5	3	3 segments
M_FREQ(2,1)	8	4	128Hz

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T_SOUND(2,1)	8	31	3100ms
M_FREQ(2,2)	8	20	640Hz
T_SOUND(2,2)	8	31	3100ms
M_FREQ(2,3)	8	36	1152Hz
T_SOUND(2,3)	8	31	3100ms
Padding bits	7	0000000b	

Message-S7: STM requests stop sound for first sound and stop sound for second sound			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	13	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	56	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	101	
Q_SOUND(1)	2	0	Stop sound
N_ITER(1)	5	0	no sound segments
NID_SOUND(2)	8	102	
Q_SOUND(2)	2	0	Stop sound
N_ITER(2)	5	0	no sound segments



Padding bits	7	0000000b	
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Message-S8: STM requests continuous play for first sound and one shot play for second sound			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	25	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	152	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	101	
Q_SOUND(1)	2	2	Continuous play
N_ITER(1)	5	3	3 segments
M_FREQ(1,1)	8	8	256Hz
T_SOUND(1,1)	8	31	3100ms
M_FREQ(1,2)	8	9	288Hz
T_SOUND(1,2)	8	31	3100ms
M_FREQ(1,3)	8	10	320Hz
T_SOUND(1,3)	8	31	3100ms
NID_SOUND(2)	8	0	
Q_SOUND(2)	2	1	One shot play

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N_ITER(2)	5	3	3 segments
M_FREQ(2,1)	8	16	512Hz
T_SOUND(2,1)	8	31	3100ms
M_FREQ(2,2)	8	8	256Hz
T_SOUND(2,2)	8	31	3100ms
M_FREQ(2,3)	8	0	Silence
T_SOUND(2,3)	8	31	3100ms
Padding bits	7	0000000b	

Message-S9: STM requests stop sound for first sound and continuous play for second sound			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	19	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	104	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	101	
Q_SOUND(1)	2	0	Stop sound
N_ITER(1)	5	0	no sound segments
NID_SOUND(2)	8	103	



Q_SOUND(2)	2	2	Continuous play
N_ITER(2)	5	3	3 segments
M_FREQ(2,1)	8	16	512Hz
T_SOUND(2,1)	8	31	3100ms
M_FREQ(2,2)	8	8	256Hz
T_SOUND(2,2)	8	31	3100ms
M_FREQ(2,3)	8	0	Silence
T_SOUND(2,3)	8	31	3100ms
Padding bits	7	0000000b	

Message-S10: STM requests continuous play for first sound and stop sound for second sound			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	19	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	104	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	101	
Q_SOUND(1)	2	2	Continuous play
N_ITER(1)	5	3	3 segments



M_FREQ(1,1)	8	8	256Hz
T_SOUND(1,1)	8	31	3100ms
M_FREQ(1,2)	8	9	288Hz
T_SOUND(1,2)	8	31	3100ms
M_FREQ(1,3)	8	10	320Hz
T_SOUND(1,3)	8	31	3100ms
NID_SOUND(2)	8	103	
Q_SOUND(2)	2	0	Stop sound
N_ITER(2)	5	0	no sound segments
Padding bits	7	0000000b	

Message-S11: STM requests stop sound for first sound and one shot play for second sound			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	19	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	104	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	101	
Q_SOUND(1)	2	0	Stop sound



N_ITER(1)	5	0	no sound segments
NID_SOUND(2)	8	0	
Q_SOUND(2)	2	1	One shot play
N_ITER(2)	5	3	3 segments
M_FREQ(2,1)	8	16	512Hz
T_SOUND(2,1)	8	31	3100ms
M_FREQ(2,2)	8	8	256Hz
T_SOUND(2,2)	8	31	3100ms
M_FREQ(2,3)	8	0	Silence
T_SOUND(2,3)	8	31	3100ms
Padding bits	7	0000000b	

2.5.14 Test Case 7e.14

TEST CASE HEADER	
Test case identification	DMI Function
	7e1.0.2.(7e2.0.2.1.2.1.2.0).1.(7e2.0.2.1.2.2.1.0).1.(7e2.0.2.1.2.3.0.1.0).1. (7e2.0.2.2.1.1.2.0).1.(7e2.0.2.3.0.1.1.2.0).1.(7e2.0.2.2.1.2.1.0).1. (7e2.0.2.3.0.1.3.0.1.0).1.(7e2.0.2.2.1.1.2.0).1.(7e2.0.2.3.0.1.2.1.0).1. (7e2.0.2.2.1.3.0.1.0).1.(7e2.0.2.3.0.1.1.2.0).2
	Sound test for unified DMI, DMI configuration for other STMs, with 2 sound requests at once and 3 segments in sound requests.: Two sounds with 3 segments of 3100ms duration are requested and partly played at the same time. All possible combinations of Q_SOUND are tested.
	Same test steps and messages as in test case 7e. 13



ERTMS/ETCS on-board requirements tested	SUBSET-035 13.4.1.1, 13.4.1.2, 13.4.1.8, 13.4.5.3, 13.4.5.4
	ERA ERTMS 015560 (DMI Spec) 9.3.6
STM requirements tested	
Packets transmitted via FFFIS STM	STM-15, STM-46
ERTMS/ETCS on-board configuration	For active STM: Unified DMI service: 7a.1.
	DMI configuration 7a.3, 7a.5, 7a.6, 7a.7, 7a.8 or 7a.9 for at least one other STM
Comments and constraints	Starting and end conditions as for test case 7e.1

2.5.15 Test Case 7e.15

TEST CASE HEADER	
Test case identification	DMI Function
	7e1.0.1.(7e2.0.2.1.1.1.1.0).1.(7e2.0.2.1.1.2.1.0).1.(7e2.0.2.1.1.3.0.1.0).1. (7e2.0.2.2.1.1.1.0).1.(7e2.0.2.3.0.1.1.1.0).1.(7e2.0.2.2.1.2.1.0).1. (7e2.0.2.3.0.1.3.0.1.0).1.(7e2.0.2.2.1.1.1.0).1.(7e2.0.2.3.0.1.2.1.0).1. (7e2.0.2.2.1.3.0.1.0).1.(7e2.0.2.3.0.1.1.1.0).2
	Sound test for unified DMI, no DMI configuration for other STMs, with 2 sound requests at once and 7 segments in sound requests.:
	Two sounds with 7 segments of 1200ms duration are requested and partly played at the same time. All possible combinations of Q_SOUND are tested.
ERTMS/ETCS on-board requirements tested	SUBSET-035 13.4.1.1, 13.4.1.2, 13.4.1.8, 13.4.5.3, 13.4.5.4
	ERA ERTMS 015560 (DMI Spec) 9.3.6
STM requirements tested	



Packets transmitted via FFFIS STM	STM-15, STM-46
ERTMS/ETCS on-board configuration	For active STM: Unified DMI service: 7a.1. No DMI configuration for any other STM
Comments and constraints	Starting and end conditions as for test case 7e.1

ERTMS/ETCS on-board Test Case

Step	Description/Comments	Input I/F	Input time	Input Action	Output I/F	Output time limit	Output action
1	STM requests one shot play for sound with identifier 201 with 7 segments (256, 288, 320, 352, 384, 448, 480 Hz) and STM requests one shot play for sound with identifier 202 with 7 segments (128, 640, 1152, 1664, 2176, 2688, 3200 Hz)	PROF	T0	connection of active DMI channel: Message-S1	DMI		First requested sound with identifier 201 is played once. Second requested sound with identifier 202 is played once
2	STM requests one shot play for sound with identifier 201 with 7 segments (256, 288, 320, 352, 384, 448, 480 Hz) and STM requests continuous play for sound with identifier 202 with 7 segments (128, 640, 1152, 1664, 2176, 2688, 3200 Hz)	PROF	T0+15s	connection of active DMI channel: Message-S2	DMI		First requested sound with identifier 201 is played once. Second requested sound with identifier 202 is played continuously
3	STM requests one shot play for sound with identifier 201 with 7 segments (256, 288, 320, 352, 384, 448, 480 Hz) and STM requests stop sound for sound with identifier 202	PROF	T0+40s	connection of active DMI channel: Message-S3	DMI		First requested sound with identifier 201 is played once. Sound with identifier 202 is stopped.



4	STM requests continuous play for sound with identifier 201 with 7 segments (256, 288, 320, 352, 384, 448, 480 Hz) and STM requests one shot play for sound with identifier 202 with 7 segments (128, 640, 1152, 1664, 2176, 2688, 3200 Hz)	PROF	T0+55s	connection of active DMI channel: Message-S4	DMI		First requested sound with identifier 201 is played continuously. Second requested sound with identifier 202 is played once
5	STM requests stop sound for sound with identifier 201 and STM requests one shot play for sound with identifier 202 with 7 segments (128, 640, 1152, 1664, 2176, 2688, 3200 Hz)	PROF	T0+80s	connection of active DMI channel: Message-S5	DMI		Sound with identifier 201 is stopped. Second requested sound with identifier 202 is played once
6	STM requests continuous play for sound with identifier 201 with 7 segments (256, 288, 320, 352, 384, 448, 480 Hz) and STM requests continuous play for sound with identifier 202 with 7 segments (128, 640, 1152, 1664, 2176, 2688, 3200 Hz)	PROF	T0+95s	connection of active DMI channel: Message-S6	DMI		First requested sound with identifier 201 is played continuously. Second requested sound with identifier 202 is played continuously
7	STM requests stop sound for sound with identifier 201 and STM requests stop sound for sound with identifier 202	PROF	T0+120s	connection of active DMI channel: Message-S7	DMI		Sound with identifier 201 is stopped. Sound with identifier 202 is stopped.
8	STM requests continuous play for sound with identifier 201 with 7 segments (256, 288, 320, 352, 384, 448, 480 Hz) and STM requests one shot play for sound with identifier 203 with 7	PROF	T0+135s	connection of active DMI channel: Message-S8	DMI		First requested sound with identifier 201 is played continuously. Second requested sound with identifier 203 is played once



	segments (512, 256, 0, 512, 256, 0, 512 Hz)						
9	STM requests stop sound for sound with identifier 201 and STM requests continuous play for sound with identifier 203 with 7 segments (512, 256, 0, 512, 256, 0, 512 Hz)	PROF	T0+160s	connection of active DMI channel: Message-S9	DMI		Sound with identifier 201 is stopped. Second requested sound with identifier 203 is played continuously
10	STM requests continuous play for sound with identifier 201 with 7 segments (256, 288, 320, 352, 384, 448, 480 Hz) and STM requests stop sound for sound with identifier 203	PROF	T0+185s	connection of active DMI channel: Message-S10	DMI		First requested sound with identifier 201 is played continuously. Sound with identifier 203 is stopped.
11	STM requests stop sound for sound with identifier 201 and STM requests one shot play for sound with identifier 203 with 7 segments (512, 256, 0, 512, 256, 0, 512 Hz)	PROF	T0+210s	connection of active DMI channel: Message-S11	DMI		Sound with identifier 201 is stopped. Second requested sound with identifier 203 is played once

Message-S1: STM requests one shot play for first sound and one shot play for second sound			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	41	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)



L_PACKET	13	280	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	201	
Q_SOUND(1)	2	1	One shot play
N_ITER(1)	5	7	7 segments
M_FREQ(1,1)	8	8	256Hz
T_SOUND(1,1)	8	12	1200ms
M_FREQ(1,2)	8	9	288Hz
T_SOUND(1,2)	8	12	1200ms
M_FREQ(1,3)	8	10	320Hz
T_SOUND(1,3)	8	12	1200ms
M_FREQ(1,4)	8	11	352Hz
T_SOUND(1,4)	8	12	1200ms
M_FREQ(1,5)	8	12	384Hz
T_SOUND(1,5)	8	12	1200ms
M_FREQ(1,6)	8	14	448Hz
T_SOUND(1,6)	8	12	1200ms
M_FREQ(1,7)	8	15	480Hz
T_SOUND(1,7)	8	12	1200ms
NID_SOUND(2)	8	202	
Q_SOUND(2)	2	1	One shot play
N_ITER(2)	5	7	7 segments
M_FREQ(2,1)	8	4	128Hz



T_SOUND(2,1)	8	12	1200ms
M_FREQ(2,2)	8	20	640Hz
T_SOUND(2,2)	8	12	1200ms
M_FREQ(2,3)	8	36	1152Hz
T_SOUND(2,3)	8	12	1200ms
M_FREQ(2,4)	8	52	1664Hz
T_SOUND(2,4)	8	12	1200ms
M_FREQ(2,5)	8	68	2176Hz
T_SOUND(2,5)	8	12	1200ms
M_FREQ(2,6)	8	84	2688Hz
T_SOUND(2,6)	8	12	1200ms
M_FREQ(2,7)	8	100	3200Hz
T_SOUND(2,7)	8	12	1200ms
Padding bits	7	0000000b	

Message-S2: STM requests one shot play for first sound and continuous play for second sound			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	41	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)



L_PACKET	13	280	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	201	
Q_SOUND(1)	2	1	One shot play
N_ITER(1)	5	7	7 segments
M_FREQ(1,1)	8	8	256Hz
T_SOUND(1,1)	8	12	1200ms
M_FREQ(1,2)	8	9	288Hz
T_SOUND(1,2)	8	12	1200ms
M_FREQ(1,3)	8	10	320Hz
T_SOUND(1,3)	8	12	1200ms
M_FREQ(1,4)	8	11	352Hz
T_SOUND(1,4)	8	12	1200ms
M_FREQ(1,5)	8	12	384Hz
T_SOUND(1,5)	8	12	1200ms
M_FREQ(1,6)	8	14	448Hz
T_SOUND(1,6)	8	12	1200ms
M_FREQ(1,7)	8	15	480Hz
T_SOUND(1,7)	8	12	1200ms
NID_SOUND(2)	8	202	
Q_SOUND(2)	2	2	Continuous play
N_ITER(2)	5	7	7 segments
M_FREQ(2,1)	8	4	128Hz



T_SOUND(2,1)	8	12	1200ms
M_FREQ(2,2)	8	20	640Hz
T_SOUND(2,2)	8	12	1200ms
M_FREQ(2,3)	8	36	1152Hz
T_SOUND(2,3)	8	12	1200ms
M_FREQ(2,4)	8	52	1664Hz
T_SOUND(2,4)	8	12	1200ms
M_FREQ(2,5)	8	68	2176Hz
T_SOUND(2,5)	8	12	1200ms
M_FREQ(2,6)	8	84	2688Hz
T_SOUND(2,6)	8	12	1200ms
M_FREQ(2,7)	8	100	3200Hz
T_SOUND(2,7)	8	12	1200ms
Padding bits	7	0000000b	

Message-S3: STM requests one shot play for first sound and stop sound for second sound			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	27	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)



L_PACKET	13	168	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	201	
Q_SOUND(1)	2	1	One shot play
N_ITER(1)	5	7	7 segments
M_FREQ(1,1)	8	8	256Hz
T_SOUND(1,1)	8	12	1200ms
M_FREQ(1,2)	8	9	288Hz
T_SOUND(1,2)	8	12	1200ms
M_FREQ(1,3)	8	10	320Hz
T_SOUND(1,3)	8	12	1200ms
M_FREQ(1,4)	8	11	352Hz
T_SOUND(1,4)	8	12	1200ms
M_FREQ(1,5)	8	12	384Hz
T_SOUND(1,5)	8	12	1200ms
M_FREQ(1,6)	8	14	448Hz
T_SOUND(1,6)	8	12	1200ms
M_FREQ(1,7)	8	15	480Hz
T_SOUND(1,7)	8	12	1200ms
NID_SOUND(2)	8	202	
Q_SOUND(2)	2	0	Stop sound
N_ITER(2)	5	0	no sound segments
Padding bits	7	0000000b	



Message-S4: STM requests continuous play for first sound and one shot play for second sound

VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	41	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	280	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	201	
Q_SOUND(1)	2	2	Continuous play
N_ITER(1)	5	7	7 segments
M_FREQ(1,1)	8	8	256Hz
T_SOUND(1,1)	8	12	1200ms
M_FREQ(1,2)	8	9	288Hz
T_SOUND(1,2)	8	12	1200ms
M_FREQ(1,3)	8	10	320Hz
T_SOUND(1,3)	8	12	1200ms
M_FREQ(1,4)	8	11	352Hz
T_SOUND(1,4)	8	12	1200ms
M_FREQ(1,5)	8	12	384Hz
T_SOUND(1,5)	8	12	1200ms

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M_FREQ(1,6)	8	14	448Hz
T_SOUND(1,6)	8	12	1200ms
M_FREQ(1,7)	8	15	480Hz
T_SOUND(1,7)	8	12	1200ms
NID_SOUND(2)	8	202	
Q_SOUND(2)	2	1	One shot play
N_ITER(2)	5	7	7 segments
M_FREQ(2,1)	8	4	128Hz
T_SOUND(2,1)	8	12	1200ms
M_FREQ(2,2)	8	20	640Hz
T_SOUND(2,2)	8	12	1200ms
M_FREQ(2,3)	8	36	1152Hz
T_SOUND(2,3)	8	12	1200ms
M_FREQ(2,4)	8	52	1664Hz
T_SOUND(2,4)	8	12	1200ms
M_FREQ(2,5)	8	68	2176Hz
T_SOUND(2,5)	8	12	1200ms
M_FREQ(2,6)	8	84	2688Hz
T_SOUND(2,6)	8	12	1200ms
M_FREQ(2,7)	8	100	3200Hz
T_SOUND(2,7)	8	12	1200ms
Padding bits	7	0000000b	



Message-S5: STM requests stop sound for first sound and one shot play for second sound

VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	27	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	168	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	201	
Q_SOUND(1)	2	0	Stop sound
N_ITER(1)	5	0	no sound segments
NID_SOUND(2)	8	202	
Q_SOUND(2)	2	1	One shot play
N_ITER(2)	5	7	7 segments
M_FREQ(2,1)	8	4	128Hz
T_SOUND(2,1)	8	12	1200ms
M_FREQ(2,2)	8	20	640Hz
T_SOUND(2,2)	8	12	1200ms
M_FREQ(2,3)	8	36	1152Hz
T_SOUND(2,3)	8	12	1200ms
M_FREQ(2,4)	8	52	1664Hz



T_SOUND(2,4)	8	12	1200ms
M_FREQ(2,5)	8	68	2176Hz
T_SOUND(2,5)	8	12	1200ms
M_FREQ(2,6)	8	84	2688Hz
T_SOUND(2,6)	8	12	1200ms
M_FREQ(2,7)	8	100	3200Hz
T_SOUND(2,7)	8	12	1200ms
Padding bits	7	0000000b	

Message-S6: STM requests continuous play for first sound and continuous play for second sound			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	41	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	280	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	201	
Q_SOUND(1)	2	2	Continuous play
N_ITER(1)	5	7	7 segments
M_FREQ(1,1)	8	8	256Hz



T_SOUND(1,1)	8	12	1200ms
M_FREQ(1,2)	8	9	288Hz
T_SOUND(1,2)	8	12	1200ms
M_FREQ(1,3)	8	10	320Hz
T_SOUND(1,3)	8	12	1200ms
M_FREQ(1,4)	8	11	352Hz
T_SOUND(1,4)	8	12	1200ms
M_FREQ(1,5)	8	12	384Hz
T_SOUND(1,5)	8	12	1200ms
M_FREQ(1,6)	8	14	448Hz
T_SOUND(1,6)	8	12	1200ms
M_FREQ(1,7)	8	15	480Hz
T_SOUND(1,7)	8	12	1200ms
NID_SOUND(2)	8	202	
Q_SOUND(2)	2	2	Continuous play
N_ITER(2)	5	7	7 segments
M_FREQ(2,1)	8	4	128Hz
T_SOUND(2,1)	8	12	1200ms
M_FREQ(2,2)	8	20	640Hz
T_SOUND(2,2)	8	12	1200ms
M_FREQ(2,3)	8	36	1152Hz
T_SOUND(2,3)	8	12	1200ms
M_FREQ(2,4)	8	52	1664Hz



T_SOUND(2,4)	8	12	1200ms
M_FREQ(2,5)	8	68	2176Hz
T_SOUND(2,5)	8	12	1200ms
M_FREQ(2,6)	8	84	2688Hz
T_SOUND(2,6)	8	12	1200ms
M_FREQ(2,7)	8	100	3200Hz
T_SOUND(2,7)	8	12	1200ms
Padding bits	7	0000000b	

Message-S7: STM requests stop sound for first sound and stop sound for second sound			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	13	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	56	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	201	
Q_SOUND(1)	2	0	Stop sound
N_ITER(1)	5	0	no sound segments
NID_SOUND(2)	8	202	



Q_SOUND(2)	2	0	Stop sound
N_ITER(2)	5	0	no sound segments
Padding bits	7	0000000b	

Message-S8: STM requests continuous play for first sound and one shot play for second sound			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	41	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	280	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	201	
Q_SOUND(1)	2	2	Continuous play
N_ITER(1)	5	7	7 segments
M_FREQ(1,1)	8	8	256Hz
T_SOUND(1,1)	8	12	1200ms
M_FREQ(1,2)	8	9	288Hz
T_SOUND(1,2)	8	12	1200ms
M_FREQ(1,3)	8	10	320Hz
T_SOUND(1,3)	8	12	1200ms



M_FREQ(1,4)	8	11	352Hz
T_SOUND(1,4)	8	12	1200ms
M_FREQ(1,5)	8	12	384Hz
T_SOUND(1,5)	8	12	1200ms
M_FREQ(1,6)	8	14	448Hz
T_SOUND(1,6)	8	12	1200ms
M_FREQ(1,7)	8	15	480Hz
T_SOUND(1,7)	8	12	1200ms
NID_SOUND(2)	8	203	
Q_SOUND(2)	2	1	One shot play
N_ITER(2)	5	7	7 segments
M_FREQ(2,1)	8	16	512Hz
T_SOUND(2,1)	8	12	1200ms
M_FREQ(2,2)	8	8	256Hz
T_SOUND(2,2)	8	12	1200ms
M_FREQ(2,3)	8	0	Silence
T_SOUND(2,3)	8	12	1200ms
M_FREQ(2,4)	8	16	512Hz
T_SOUND(2,4)	8	12	1200ms
M_FREQ(2,5)	8	8	256Hz
T_SOUND(2,5)	8	12	1200ms
M_FREQ(2,6)	8	0	Silence
T_SOUND(2,6)	8	12	1200ms



M_FREQ(2,7)	8	16	512Hz
T_SOUND(2,7)	8	12	1200ms
Padding bits	7	0000000b	

Message-S9: STM requests stop sound for first sound and continuous play for second sound			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	27	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	168	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	201	
Q_SOUND(1)	2	0	Stop sound
N_ITER(1)	5	0	no sound segments
NID_SOUND(2)	8	203	
Q_SOUND(2)	2	2	Continuous play
N_ITER(2)	5	7	7 segments
M_FREQ(2,1)	8	16	512Hz
T_SOUND(2,1)	8	12	1200ms
M_FREQ(2,2)	8	8	256Hz

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T_SOUND(2,2)	8	12	1200ms
M_FREQ(2,3)	8	0	Silence
T_SOUND(2,3)	8	12	1200ms
M_FREQ(2,4)	8	16	512Hz
T_SOUND(2,4)	8	12	1200ms
M_FREQ(2,5)	8	8	256Hz
T_SOUND(2,5)	8	12	1200ms
M_FREQ(2,6)	8	0	Silence
T_SOUND(2,6)	8	12	1200ms
M_FREQ(2,7)	8	16	512Hz
T_SOUND(2,7)	8	12	1200ms
Padding bits	7	0000000b	

Message-S10: STM requests continuous play for first sound and stop sound for second sound			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	27	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	168	Packet Length
N_ITER	5	2	



NID_SOUND(1)	8	201	
Q_SOUND(1)	2	2	Continuous play
N_ITER(1)	5	7	7 segments
M_FREQ(1,1)	8	8	256Hz
T_SOUND(1,1)	8	12	1200ms
M_FREQ(1,2)	8	9	288Hz
T_SOUND(1,2)	8	12	1200ms
M_FREQ(1,3)	8	10	320Hz
T_SOUND(1,3)	8	12	1200ms
M_FREQ(1,4)	8	11	352Hz
T_SOUND(1,4)	8	12	1200ms
M_FREQ(1,5)	8	12	384Hz
T_SOUND(1,5)	8	12	1200ms
M_FREQ(1,6)	8	14	448Hz
T_SOUND(1,6)	8	12	1200ms
M_FREQ(1,7)	8	15	480Hz
T_SOUND(1,7)	8	12	1200ms
NID_SOUND(2)	8	203	
Q_SOUND(2)	2	0	Stop sound
N_ITER(2)	5	0	no sound segments
Padding bits	7	0000000b	

Message-S11: STM requests stop sound for first sound and one shot play for second sound



VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	27	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	168	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	201	
Q_SOUND(1)	2	0	Stop sound
N_ITER(1)	5	0	no sound segments
NID_SOUND(2)	8	203	
Q_SOUND(2)	2	1	One shot play
N_ITER(2)	5	7	7 segments
M_FREQ(2,1)	8	16	512Hz
T_SOUND(2,1)	8	12	1200ms
M_FREQ(2,2)	8	8	256Hz
T_SOUND(2,2)	8	12	1200ms
M_FREQ(2,3)	8	0	Silence
T_SOUND(2,3)	8	12	1200ms
M_FREQ(2,4)	8	16	512Hz
T_SOUND(2,4)	8	12	1200ms



M_FREQ(2,5)	8	8	256Hz
T_SOUND(2,5)	8	12	1200ms
M_FREQ(2,6)	8	0	Silence
T_SOUND(2,6)	8	12	1200ms
M_FREQ(2,7)	8	16	512Hz
T_SOUND(2,7)	8	12	1200ms
Padding bits	7	0000000b	

2.5.16 Test Case 7e.16

TEST CASE HEADER	
Test case identification	DMI Function
	7e1.0.2.(7e2.0.2.1.1.1.1.0).1.(7e2.0.2.1.1.2.1.0).1.(7e2.0.2.1.1.3.0.1.0).1. (7e2.0.2.2.1.1.1.0).1.(7e2.0.2.3.0.1.1.1.0).1.(7e2.0.2.2.1.2.1.0).1. (7e2.0.2.3.0.1.3.0.1.0).1.(7e2.0.2.2.1.1.1.0).1.(7e2.0.2.3.0.1.2.1.0).1. (7e2.0.2.2.1.3.0.1.0).1.(7e2.0.2.3.0.1.1.1.0).2
	Sound test for unified DMI, DMI configuration for other STMs, with 2 sound requests at once and 7 segments in sound requests.: Two sounds with 7 segments of 1200ms duration are requested and partly played at the same time. All possible combinations of Q_SOUND are tested.
	Same test steps and messages as in test case 7e. 15
ERTMS/ETCS on-board requirements tested	SUBSET-035 13.4.1.1, 13.4.1.2, 13.4.1.8, 13.4.5.3, 13.4.5.4
	ERA ERTMS 015560 (DMI Spec) 9.3.6
STM requirements tested	



Packets transmitted via FFFIS STM	STM-15, STM-46
ERTMS/ETCS on-board configuration	For active STM: Unified DMI service: 7a.1. DMI configuration 7a.3, 7a.5, 7a.6, 7a.7, 7a.8 or 7a.9 for at least one other STM
Comments and constraints	Starting and end conditions as for test case 7e.1

2.5.17 Test Case 7e.17

TEST CASE HEADER	
Test case identification	DMI Function
	7e1.0.1.(7e2.0.2.1.2.1.2.0).1.(7e2.0.2.1.2.2.1.0).1.(7e2.0.2.1.2.3.0.1.0).1. (7e2.0.2.2.1.1.2.0).1.(7e2.0.2.3.0.1.1.2.0).1.(7e2.0.2.2.1.2.1.0).1. (7e2.0.2.3.0.1.3.0.1.0).1.(7e2.0.2.2.1.1.2.0).1.(7e2.0.2.3.0.1.2.1.0).1. (7e2.0.2.2.1.3.0.1.0).1.(7e2.0.2.3.0.1.1.2.0).2
	Sound test for unified DMI, no DMI configuration for other STMs, with 2 sound requests at once and 15 segments in sound requests.: Two sounds with 15 segments of 400ms duration are requested and partly played at the same time. All possible combinations of Q_SOUND are tested.
ERTMS/ETCS on-board requirements tested	SUBSET-035 13.4.1.1, 13.4.1.2, 13.4.1.8, 13.4.5.3, 13.4.5.4
	ERA ERTMS 015560 (DMI Spec) 9.3.6
STM requirements tested	
Packets transmitted via FFFIS STM	STM-15, STM-46
ERTMS/ETCS on-board configuration	For active STM: Unified DMI service: 7a.1.
	No DMI configuration for any other STM



Comments and constraints	Starting and end conditions as for test case 7e.1
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ERTMS/ETCS on-board Test Case

Step	Description/Comments	Input I/F	Input time	Input Action	Output I/F	Output time limit	Output action
1	STM requests one shot play for sound without sound identifier with 15 segments (256, 288, 320, 352, 384, 448, 480, 512, 576, 672, 704, 768, 896, 992, 1056 Hz) and STM requests one shot play for sound without sound identifier with 15 segments (128, 640, 1152, 1664, 2176, 2688, 3200, 3712, 4224, 4736, 5248, 5760, 6272, 6784, 7296 Hz)	PROF	T0	connection of active DMI channel: Message-S1	DMI		First requested sound is played once. Second requested sound is played once
2	STM requests one shot play for sound without sound identifier with 15 segments (256, 288, 320, 352, 384, 448, 480, 512, 576, 672, 704, 768, 896, 992, 1056 Hz) and STM requests continuous play for sound with identifier 52 with 15 segments (128, 640, 1152, 1664, 2176, 2688, 3200, 3712, 4224, 4736, 5248, 5760, 6272, 6784, 7296 Hz)	PROF	T0+15s	connection of active DMI channel: Message-S2	DMI		First requested sound is played once. Second requested sound with identifier 52 is played continuously
3	STM requests one shot play for sound without sound identifier with 15 segments (256, 288, 320, 352, 384, 448, 480, 512, 576, 672, 704, 768, 896, 992, 1056 Hz) and STM requests stop sound for	PROF	T0+40s	connection of active DMI channel: Message-S3	DMI		First requested sound is played once. Sound with identifier 52 is stopped.



	sound with identifier 52						
4	STM requests continuous play for sound with identifier 51 with 15 segments (256, 288, 320, 352, 384, 448, 480, 512, 576, 672, 704, 768, 896, 992, 1056 Hz) and STM requests one shot play for sound without sound identifier with 15 segments (128, 640, 1152, 1664, 2176, 2688, 3200, 3712, 4224, 4736, 5248, 5760, 6272, 6784, 7296 Hz)	PROF	T0+55s	connection of active DMI channel: Message-S4	DMI		First requested sound with identifier 51 is played continuously. Second requested sound is played once
5	STM requests stop sound for sound with identifier 51 and STM requests one shot play for sound without sound identifier with 15 segments (128, 640, 1152, 1664, 2176, 2688, 3200, 3712, 4224, 4736, 5248, 5760, 6272, 6784, 7296 Hz)	PROF	T0+80s	connection of active DMI channel: Message-S5	DMI		Sound with identifier 51 is stopped. Second requested sound is played once
6	STM requests continuous play for sound with identifier 51 with 15 segments (256, 288, 320, 352, 384, 448, 480, 512, 576, 672, 704, 768, 896, 992, 1056 Hz) and STM requests continuous play for sound with identifier 52 with 15 segments (128, 640, 1152, 1664, 2176, 2688, 3200, 3712, 4224, 4736, 5248, 5760, 6272, 6784, 7296 Hz)	PROF	T0+95s	connection of active DMI channel: Message-S6	DMI		First requested sound with identifier 51 is played continuously. Second requested sound with identifier 52 is played continuously
7	STM requests stop sound for sound with identifier 51	PROF	T0+120s	connection of active DMI channel: Message-S7	DMI		Sound with identifier 51 is stopped. Sound with identifier 52 is stopped.



	and STM requests stop sound for sound with identifier 52						
8	STM requests continuous play for sound with identifier 51 with 15 segments (256, 288, 320, 352, 384, 448, 480, 512, 576, 672, 704, 768, 896, 992, 1056 Hz) and STM requests one shot play for sound without sound identifier with 15 segments (512, 256, 0, 512, 256, 0, 512, 256, 0, 512, 256, 0, 512, 256, 0 Hz)	PROF	T0+135s	connection of active DMI channel: Message-S8	DMI		First requested sound with identifier 51 is played continuously. Second requested sound is played once
9	STM requests stop sound for sound with identifier 51 and STM requests continuous play for sound with identifier 53 with 15 segments (512, 256, 0, 512, 256, 0, 512, 256, 0, 512, 256, 0, 512, 256, 0 Hz)	PROF	T0+160s	connection of active DMI channel: Message-S9	DMI		Sound with identifier 51 is stopped. Second requested sound with identifier 53 is played continuously
10	STM requests continuous play for sound with identifier 51 with 15 segments (256, 288, 320, 352, 384, 448, 480, 512, 576, 672, 704, 768, 896, 992, 1056 Hz) and STM requests stop sound for sound with identifier 53	PROF	T0+185s	connection of active DMI channel: Message-S10	DMI		First requested sound with identifier 51 is played continuously. Sound with identifier 53 is stopped.
11	STM requests stop sound for sound with identifier 51 and STM requests one shot play for sound without sound identifier with 15 segments (512, 256, 0, 512, 256, 0, 512, 256, 0, 512, 256, 0, 512, 256, 0 Hz)	PROF	T0+210s	connection of active DMI channel: Message-S11	DMI		Sound with identifier 51 is stopped. Second requested sound is played once



512, 256, 0 Hz)						
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Message-S1: STM requests one shot play for first sound and one shot play for second sound			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	73	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	536	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	0	
Q_SOUND(1)	2	1	One shot play
N_ITER(1)	5	15	15 segments
M_FREQ(1,1)	8	8	256Hz
T_SOUND(1,1)	8	4	400ms
M_FREQ(1,2)	8	9	288Hz
T_SOUND(1,2)	8	4	400ms
M_FREQ(1,3)	8	10	320Hz
T_SOUND(1,3)	8	4	400ms
M_FREQ(1,4)	8	11	352Hz
T_SOUND(1,4)	8	4	400ms
M_FREQ(1,5)	8	12	384Hz

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T_SOUND(1,5)	8	4	400ms
M_FREQ(1,6)	8	14	448Hz
T_SOUND(1,6)	8	4	400ms
M_FREQ(1,7)	8	15	480Hz
T_SOUND(1,7)	8	4	400ms
M_FREQ(1,8)	8	16	512Hz
T_SOUND(1,8)	8	4	400ms
M_FREQ(1,9)	8	18	576Hz
T_SOUND(1,9)	8	4	400ms
M_FREQ(1,10)	8	21	672Hz
T_SOUND(1,10)	8	4	400ms
M_FREQ(1,11)	8	22	704Hz
T_SOUND(1,11)	8	4	400ms
M_FREQ(1,12)	8	24	768Hz
T_SOUND(1,12)	8	4	400ms
M_FREQ(1,13)	8	28	896Hz
T_SOUND(1,13)	8	4	400ms
M_FREQ(1,14)	8	31	992Hz
T_SOUND(1,14)	8	4	400ms
M_FREQ(1,15)	8	33	1056Hz
T_SOUND(1,15)	8	4	400ms
NID_SOUND(2)	8	0	
Q_SOUND(2)	2	1	One shot play



N_ITER(2)	5	15	15 segments
M_FREQ(2,1)	8	4	128Hz
T_SOUND(2,1)	8	4	400ms
M_FREQ(2,2)	8	20	640Hz
T_SOUND(2,2)	8	4	400ms
M_FREQ(2,3)	8	36	1152Hz
T_SOUND(2,3)	8	4	400ms
M_FREQ(2,4)	8	52	1664Hz
T_SOUND(2,4)	8	4	400ms
M_FREQ(2,5)	8	68	2176Hz
T_SOUND(2,5)	8	4	400ms
M_FREQ(2,6)	8	84	2688Hz
T_SOUND(2,6)	8	4	400ms
M_FREQ(2,7)	8	100	3200Hz
T_SOUND(2,7)	8	4	400ms
M_FREQ(2,8)	8	116	3712Hz
T_SOUND(2,8)	8	4	400ms
M_FREQ(2,9)	8	132	4224Hz
T_SOUND(2,9)	8	4	400ms
M_FREQ(2,10)	8	148	4736Hz
T_SOUND(2,10)	8	4	400ms
M_FREQ(2,11)	8	164	5248Hz
T_SOUND(2,11)	8	4	400ms



M_FREQ(2,12)	8	180	5760Hz
T_SOUND(2,12)	8	4	400ms
M_FREQ(2,13)	8	196	6272Hz
T_SOUND(2,13)	8	4	400ms
M_FREQ(2,14)	8	212	6784Hz
T_SOUND(2,14)	8	4	400ms
M_FREQ(2,15)	8	228	7296Hz
T_SOUND(2,15)	8	4	400ms
Padding bits	7	0000000b	

Message-S2: STM requests one shot play for first sound and continuous play for second sound			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	73	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	536	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	0	
Q_SOUND(1)	2	1	One shot play
N_ITER(1)	5	15	15 segments



M_FREQ(1,1)	8	8	256Hz
T_SOUND(1,1)	8	4	400ms
M_FREQ(1,2)	8	9	288Hz
T_SOUND(1,2)	8	4	400ms
M_FREQ(1,3)	8	10	320Hz
T_SOUND(1,3)	8	4	400ms
M_FREQ(1,4)	8	11	352Hz
T_SOUND(1,4)	8	4	400ms
M_FREQ(1,5)	8	12	384Hz
T_SOUND(1,5)	8	4	400ms
M_FREQ(1,6)	8	14	448Hz
T_SOUND(1,6)	8	4	400ms
M_FREQ(1,7)	8	15	480Hz
T_SOUND(1,7)	8	4	400ms
M_FREQ(1,8)	8	16	512Hz
T_SOUND(1,8)	8	4	400ms
M_FREQ(1,9)	8	18	576Hz
T_SOUND(1,9)	8	4	400ms
M_FREQ(1,10)	8	21	672Hz
T_SOUND(1,10)	8	4	400ms
M_FREQ(1,11)	8	22	704Hz
T_SOUND(1,11)	8	4	400ms
M_FREQ(1,12)	8	24	768Hz



T_SOUND(1,12)	8	4	400ms
M_FREQ(1,13)	8	28	896Hz
T_SOUND(1,13)	8	4	400ms
M_FREQ(1,14)	8	31	992Hz
T_SOUND(1,14)	8	4	400ms
M_FREQ(1,15)	8	33	1056Hz
T_SOUND(1,15)	8	4	400ms
NID_SOUND(2)	8	52	
Q_SOUND(2)	2	2	Continuous play
N_ITER(2)	5	15	15 segments
M_FREQ(2,1)	8	4	128Hz
T_SOUND(2,1)	8	4	400ms
M_FREQ(2,2)	8	20	640Hz
T_SOUND(2,2)	8	4	400ms
M_FREQ(2,3)	8	36	1152Hz
T_SOUND(2,3)	8	4	400ms
M_FREQ(2,4)	8	52	1664Hz
T_SOUND(2,4)	8	4	400ms
M_FREQ(2,5)	8	68	2176Hz
T_SOUND(2,5)	8	4	400ms
M_FREQ(2,6)	8	84	2688Hz
T_SOUND(2,6)	8	4	400ms
M_FREQ(2,7)	8	100	3200Hz



T_SOUND(2,7)	8	4	400ms
M_FREQ(2,8)	8	116	3712Hz
T_SOUND(2,8)	8	4	400ms
M_FREQ(2,9)	8	132	4224Hz
T_SOUND(2,9)	8	4	400ms
M_FREQ(2,10)	8	148	4736Hz
T_SOUND(2,10)	8	4	400ms
M_FREQ(2,11)	8	164	5248Hz
T_SOUND(2,11)	8	4	400ms
M_FREQ(2,12)	8	180	5760Hz
T_SOUND(2,12)	8	4	400ms
M_FREQ(2,13)	8	196	6272Hz
T_SOUND(2,13)	8	4	400ms
M_FREQ(2,14)	8	212	6784Hz
T_SOUND(2,14)	8	4	400ms
M_FREQ(2,15)	8	228	7296Hz
T_SOUND(2,15)	8	4	400ms
Padding bits	7	0000000b	

Message-S3: STM requests one shot play for first sound and stop sound for second sound

VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	43	Message Length

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NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	296	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	0	
Q_SOUND(1)	2	1	One shot play
N_ITER(1)	5	15	15 segments
M_FREQ(1,1)	8	8	256Hz
T_SOUND(1,1)	8	4	400ms
M_FREQ(1,2)	8	9	288Hz
T_SOUND(1,2)	8	4	400ms
M_FREQ(1,3)	8	10	320Hz
T_SOUND(1,3)	8	4	400ms
M_FREQ(1,4)	8	11	352Hz
T_SOUND(1,4)	8	4	400ms
M_FREQ(1,5)	8	12	384Hz
T_SOUND(1,5)	8	4	400ms
M_FREQ(1,6)	8	14	448Hz
T_SOUND(1,6)	8	4	400ms
M_FREQ(1,7)	8	15	480Hz
T_SOUND(1,7)	8	4	400ms



M_FREQ(1,8)	8	16	512Hz
T_SOUND(1,8)	8	4	400ms
M_FREQ(1,9)	8	18	576Hz
T_SOUND(1,9)	8	4	400ms
M_FREQ(1,10)	8	21	672Hz
T_SOUND(1,10)	8	4	400ms
M_FREQ(1,11)	8	22	704Hz
T_SOUND(1,11)	8	4	400ms
M_FREQ(1,12)	8	24	768Hz
T_SOUND(1,12)	8	4	400ms
M_FREQ(1,13)	8	28	896Hz
T_SOUND(1,13)	8	4	400ms
M_FREQ(1,14)	8	31	992Hz
T_SOUND(1,14)	8	4	400ms
M_FREQ(1,15)	8	33	1056Hz
T_SOUND(1,15)	8	4	400ms
NID_SOUND(2)	8	52	
Q_SOUND(2)	2	0	Stop sound
N_ITER(2)	5	0	no sound segments
Padding bits	7	0000000b	

Message-S4: STM requests continuous play for first sound and one shot play for second sound

VARIABLE	Length	VALUE	COMMENT
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NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	73	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	536	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	51	
Q_SOUND(1)	2	2	Continuous play
N_ITER(1)	5	15	15 segments
M_FREQ(1,1)	8	8	256Hz
T_SOUND(1,1)	8	4	400ms
M_FREQ(1,2)	8	9	288Hz
T_SOUND(1,2)	8	4	400ms
M_FREQ(1,3)	8	10	320Hz
T_SOUND(1,3)	8	4	400ms
M_FREQ(1,4)	8	11	352Hz
T_SOUND(1,4)	8	4	400ms
M_FREQ(1,5)	8	12	384Hz
T_SOUND(1,5)	8	4	400ms
M_FREQ(1,6)	8	14	448Hz
T_SOUND(1,6)	8	4	400ms



M_FREQ(1,7)	8	15	480Hz
T_SOUND(1,7)	8	4	400ms
M_FREQ(1,8)	8	16	512Hz
T_SOUND(1,8)	8	4	400ms
M_FREQ(1,9)	8	18	576Hz
T_SOUND(1,9)	8	4	400ms
M_FREQ(1,10)	8	21	672Hz
T_SOUND(1,10)	8	4	400ms
M_FREQ(1,11)	8	22	704Hz
T_SOUND(1,11)	8	4	400ms
M_FREQ(1,12)	8	24	768Hz
T_SOUND(1,12)	8	4	400ms
M_FREQ(1,13)	8	28	896Hz
T_SOUND(1,13)	8	4	400ms
M_FREQ(1,14)	8	31	992Hz
T_SOUND(1,14)	8	4	400ms
M_FREQ(1,15)	8	33	1056Hz
T_SOUND(1,15)	8	4	400ms
NID_SOUND(2)	8	0	
Q_SOUND(2)	2	1	One shot play
N_ITER(2)	5	15	15 segments
M_FREQ(2,1)	8	4	128Hz
T_SOUND(2,1)	8	4	400ms



M_FREQ(2,2)	8	20	640Hz
T_SOUND(2,2)	8	4	400ms
M_FREQ(2,3)	8	36	1152Hz
T_SOUND(2,3)	8	4	400ms
M_FREQ(2,4)	8	52	1664Hz
T_SOUND(2,4)	8	4	400ms
M_FREQ(2,5)	8	68	2176Hz
T_SOUND(2,5)	8	4	400ms
M_FREQ(2,6)	8	84	2688Hz
T_SOUND(2,6)	8	4	400ms
M_FREQ(2,7)	8	100	3200Hz
T_SOUND(2,7)	8	4	400ms
M_FREQ(2,8)	8	116	3712Hz
T_SOUND(2,8)	8	4	400ms
M_FREQ(2,9)	8	132	4224Hz
T_SOUND(2,9)	8	4	400ms
M_FREQ(2,10)	8	148	4736Hz
T_SOUND(2,10)	8	4	400ms
M_FREQ(2,11)	8	164	5248Hz
T_SOUND(2,11)	8	4	400ms
M_FREQ(2,12)	8	180	5760Hz
T_SOUND(2,12)	8	4	400ms
M_FREQ(2,13)	8	196	6272Hz



T_SOUND(2,13)	8	4	400ms
M_FREQ(2,14)	8	212	6784Hz
T_SOUND(2,14)	8	4	400ms
M_FREQ(2,15)	8	228	7296Hz
T_SOUND(2,15)	8	4	400ms
Padding bits	7	0000000b	

Message-S5: STM requests stop sound for first sound and one shot play for second sound			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	43	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	296	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	51	
Q_SOUND(1)	2	0	Stop sound
N_ITER(1)	5	0	no sound segments
NID_SOUND(2)	8	0	
Q_SOUND(2)	2	1	One shot play
N_ITER(2)	5	15	15 segments



M_FREQ(2,1)	8	4	128Hz
T_SOUND(2,1)	8	4	400ms
M_FREQ(2,2)	8	20	640Hz
T_SOUND(2,2)	8	4	400ms
M_FREQ(2,3)	8	36	1152Hz
T_SOUND(2,3)	8	4	400ms
M_FREQ(2,4)	8	52	1664Hz
T_SOUND(2,4)	8	4	400ms
M_FREQ(2,5)	8	68	2176Hz
T_SOUND(2,5)	8	4	400ms
M_FREQ(2,6)	8	84	2688Hz
T_SOUND(2,6)	8	4	400ms
M_FREQ(2,7)	8	100	3200Hz
T_SOUND(2,7)	8	4	400ms
M_FREQ(2,8)	8	116	3712Hz
T_SOUND(2,8)	8	4	400ms
M_FREQ(2,9)	8	132	4224Hz
T_SOUND(2,9)	8	4	400ms
M_FREQ(2,10)	8	148	4736Hz
T_SOUND(2,10)	8	4	400ms
M_FREQ(2,11)	8	164	5248Hz
T_SOUND(2,11)	8	4	400ms
M_FREQ(2,12)	8	180	5760Hz



T_SOUND(2,12)	8	4	400ms
M_FREQ(2,13)	8	196	6272Hz
T_SOUND(2,13)	8	4	400ms
M_FREQ(2,14)	8	212	6784Hz
T_SOUND(2,14)	8	4	400ms
M_FREQ(2,15)	8	228	7296Hz
T_SOUND(2,15)	8	4	400ms
Padding bits	7	0000000b	

Message-S6: STM requests continuous play for first sound and continuous play for second sound			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	73	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	536	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	51	
Q_SOUND(1)	2	2	Continuous play
N_ITER(1)	5	15	15 segments
M_FREQ(1,1)	8	8	256Hz



T_SOUND(1,1)	8	4	400ms
M_FREQ(1,2)	8	9	288Hz
T_SOUND(1,2)	8	4	400ms
M_FREQ(1,3)	8	10	320Hz
T_SOUND(1,3)	8	4	400ms
M_FREQ(1,4)	8	11	352Hz
T_SOUND(1,4)	8	4	400ms
M_FREQ(1,5)	8	12	384Hz
T_SOUND(1,5)	8	4	400ms
M_FREQ(1,6)	8	14	448Hz
T_SOUND(1,6)	8	4	400ms
M_FREQ(1,7)	8	15	480Hz
T_SOUND(1,7)	8	4	400ms
M_FREQ(1,8)	8	16	512Hz
T_SOUND(1,8)	8	4	400ms
M_FREQ(1,9)	8	18	576Hz
T_SOUND(1,9)	8	4	400ms
M_FREQ(1,10)	8	21	672Hz
T_SOUND(1,10)	8	4	400ms
M_FREQ(1,11)	8	22	704Hz
T_SOUND(1,11)	8	4	400ms
M_FREQ(1,12)	8	24	768Hz
T_SOUND(1,12)	8	4	400ms



M_FREQ(1,13)	8	28	896Hz
T_SOUND(1,13)	8	4	400ms
M_FREQ(1,14)	8	31	992Hz
T_SOUND(1,14)	8	4	400ms
M_FREQ(1,15)	8	33	1056Hz
T_SOUND(1,15)	8	4	400ms
NID_SOUND(2)	8	52	
Q_SOUND(2)	2	2	Continuous play
N_ITER(2)	5	15	15 segments
M_FREQ(2,1)	8	4	128Hz
T_SOUND(2,1)	8	4	400ms
M_FREQ(2,2)	8	20	640Hz
T_SOUND(2,2)	8	4	400ms
M_FREQ(2,3)	8	36	1152Hz
T_SOUND(2,3)	8	4	400ms
M_FREQ(2,4)	8	52	1664Hz
T_SOUND(2,4)	8	4	400ms
M_FREQ(2,5)	8	68	2176Hz
T_SOUND(2,5)	8	4	400ms
M_FREQ(2,6)	8	84	2688Hz
T_SOUND(2,6)	8	4	400ms
M_FREQ(2,7)	8	100	3200Hz
T_SOUND(2,7)	8	4	400ms



M_FREQ(2,8)	8	116	3712Hz
T_SOUND(2,8)	8	4	400ms
M_FREQ(2,9)	8	132	4224Hz
T_SOUND(2,9)	8	4	400ms
M_FREQ(2,10)	8	148	4736Hz
T_SOUND(2,10)	8	4	400ms
M_FREQ(2,11)	8	164	5248Hz
T_SOUND(2,11)	8	4	400ms
M_FREQ(2,12)	8	180	5760Hz
T_SOUND(2,12)	8	4	400ms
M_FREQ(2,13)	8	196	6272Hz
T_SOUND(2,13)	8	4	400ms
M_FREQ(2,14)	8	212	6784Hz
T_SOUND(2,14)	8	4	400ms
M_FREQ(2,15)	8	228	7296Hz
T_SOUND(2,15)	8	4	400ms
Padding bits	7	0000000b	

Message-S7: STM requests stop sound for first sound and stop sound for second sound			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	13	Message Length
NID_PACKET	8	15	State report from STM (STM-15)



L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	56	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	51	
Q_SOUND(1)	2	0	Stop sound
N_ITER(1)	5	0	no sound segments
NID_SOUND(2)	8	52	
Q_SOUND(2)	2	0	Stop sound
N_ITER(2)	5	0	no sound segments
Padding bits	7	0000000b	

Message-S8: STM requests continuous play for first sound and one shot play for second sound			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	73	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	536	Packet Length
N_ITER	5	2	



NID_SOUND(1)	8	51	
Q_SOUND(1)	2	2	Continuous play
N_ITER(1)	5	15	15 segments
M_FREQ(1,1)	8	8	256Hz
T_SOUND(1,1)	8	4	400ms
M_FREQ(1,2)	8	9	288Hz
T_SOUND(1,2)	8	4	400ms
M_FREQ(1,3)	8	10	320Hz
T_SOUND(1,3)	8	4	400ms
M_FREQ(1,4)	8	11	352Hz
T_SOUND(1,4)	8	4	400ms
M_FREQ(1,5)	8	12	384Hz
T_SOUND(1,5)	8	4	400ms
M_FREQ(1,6)	8	14	448Hz
T_SOUND(1,6)	8	4	400ms
M_FREQ(1,7)	8	15	480Hz
T_SOUND(1,7)	8	4	400ms
M_FREQ(1,8)	8	16	512Hz
T_SOUND(1,8)	8	4	400ms
M_FREQ(1,9)	8	18	576Hz
T_SOUND(1,9)	8	4	400ms
M_FREQ(1,10)	8	21	672Hz
T_SOUND(1,10)	8	4	400ms



M_FREQ(1,11)	8	22	704Hz
T_SOUND(1,11)	8	4	400ms
M_FREQ(1,12)	8	24	768Hz
T_SOUND(1,12)	8	4	400ms
M_FREQ(1,13)	8	28	896Hz
T_SOUND(1,13)	8	4	400ms
M_FREQ(1,14)	8	31	992Hz
T_SOUND(1,14)	8	4	400ms
M_FREQ(1,15)	8	33	1056Hz
T_SOUND(1,15)	8	4	400ms
NID_SOUND(2)	8	0	
Q_SOUND(2)	2	1	One shot play
N_ITER(2)	5	15	15 segments
M_FREQ(2,1)	8	16	512Hz
T_SOUND(2,1)	8	4	400ms
M_FREQ(2,2)	8	8	256Hz
T_SOUND(2,2)	8	4	400ms
M_FREQ(2,3)	8	0	Silence
T_SOUND(2,3)	8	4	400ms
M_FREQ(2,4)	8	16	512Hz
T_SOUND(2,4)	8	4	400ms
M_FREQ(2,5)	8	8	256Hz
T_SOUND(2,5)	8	4	400ms



M_FREQ(2,6)	8	0	Silence
T_SOUND(2,6)	8	4	400ms
M_FREQ(2,7)	8	16	512Hz
T_SOUND(2,7)	8	4	400ms
M_FREQ(2,8)	8	8	256Hz
T_SOUND(2,8)	8	4	400ms
M_FREQ(2,9)	8	0	Silence
T_SOUND(2,9)	8	4	400ms
M_FREQ(2,10)	8	16	512Hz
T_SOUND(2,10)	8	4	400ms
M_FREQ(2,11)	8	8	256Hz
T_SOUND(2,11)	8	4	400ms
M_FREQ(2,12)	8	0	Silence
T_SOUND(2,12)	8	4	400ms
M_FREQ(2,13)	8	16	512Hz
T_SOUND(2,13)	8	4	400ms
M_FREQ(2,14)	8	8	256Hz
T_SOUND(2,14)	8	4	400ms
M_FREQ(2,15)	8	0	Silence
T_SOUND(2,15)	8	4	400ms
Padding bits	7	0000000b	

Message-S9: STM requests stop sound for first sound and continuous play for second sound



VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	43	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	296	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	51	
Q_SOUND(1)	2	0	Stop sound
N_ITER(1)	5	0	no sound segments
NID_SOUND(2)	8	53	
Q_SOUND(2)	2	2	Continuous play
N_ITER(2)	5	15	15 segments
M_FREQ(2,1)	8	16	512Hz
T_SOUND(2,1)	8	4	400ms
M_FREQ(2,2)	8	8	256Hz
T_SOUND(2,2)	8	4	400ms
M_FREQ(2,3)	8	0	Silence
T_SOUND(2,3)	8	4	400ms
M_FREQ(2,4)	8	16	512Hz
T_SOUND(2,4)	8	4	400ms



M_FREQ(2,5)	8	8	256Hz
T_SOUND(2,5)	8	4	400ms
M_FREQ(2,6)	8	0	Silence
T_SOUND(2,6)	8	4	400ms
M_FREQ(2,7)	8	16	512Hz
T_SOUND(2,7)	8	4	400ms
M_FREQ(2,8)	8	8	256Hz
T_SOUND(2,8)	8	4	400ms
M_FREQ(2,9)	8	0	Silence
T_SOUND(2,9)	8	4	400ms
M_FREQ(2,10)	8	16	512Hz
T_SOUND(2,10)	8	4	400ms
M_FREQ(2,11)	8	8	256Hz
T_SOUND(2,11)	8	4	400ms
M_FREQ(2,12)	8	0	Silence
T_SOUND(2,12)	8	4	400ms
M_FREQ(2,13)	8	16	512Hz
T_SOUND(2,13)	8	4	400ms
M_FREQ(2,14)	8	8	256Hz
T_SOUND(2,14)	8	4	400ms
M_FREQ(2,15)	8	0	Silence
T_SOUND(2,15)	8	4	400ms
Padding bits	7	0000000b	



Message-S10: STM requests continuous play for first sound and stop sound for second sound

VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	43	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	296	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	51	
Q_SOUND(1)	2	2	Continuous play
N_ITER(1)	5	15	15 segments
M_FREQ(1,1)	8	8	256Hz
T_SOUND(1,1)	8	4	400ms
M_FREQ(1,2)	8	9	288Hz
T_SOUND(1,2)	8	4	400ms
M_FREQ(1,3)	8	10	320Hz
T_SOUND(1,3)	8	4	400ms
M_FREQ(1,4)	8	11	352Hz
T_SOUND(1,4)	8	4	400ms
M_FREQ(1,5)	8	12	384Hz
T_SOUND(1,5)	8	4	400ms

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M_FREQ(1,6)	8	14	448Hz
T_SOUND(1,6)	8	4	400ms
M_FREQ(1,7)	8	15	480Hz
T_SOUND(1,7)	8	4	400ms
M_FREQ(1,8)	8	16	512Hz
T_SOUND(1,8)	8	4	400ms
M_FREQ(1,9)	8	18	576Hz
T_SOUND(1,9)	8	4	400ms
M_FREQ(1,10)	8	21	672Hz
T_SOUND(1,10)	8	4	400ms
M_FREQ(1,11)	8	22	704Hz
T_SOUND(1,11)	8	4	400ms
M_FREQ(1,12)	8	24	768Hz
T_SOUND(1,12)	8	4	400ms
M_FREQ(1,13)	8	28	896Hz
T_SOUND(1,13)	8	4	400ms
M_FREQ(1,14)	8	31	992Hz
T_SOUND(1,14)	8	4	400ms
M_FREQ(1,15)	8	33	1056Hz
T_SOUND(1,15)	8	4	400ms
NID_SOUND(2)	8	53	
Q_SOUND(2)	2	0	Stop sound
N_ITER(2)	5	0	no sound segments



Padding bits	7	0000000b	
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Message-S11: STM requests stop sound for first sound and one shot play for second sound			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	43	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	296	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	51	
Q_SOUND(1)	2	0	Stop sound
N_ITER(1)	5	0	no sound segments
NID_SOUND(2)	8	0	
Q_SOUND(2)	2	1	One shot play
N_ITER(2)	5	15	15 segments
M_FREQ(2,1)	8	16	512Hz
T_SOUND(2,1)	8	4	400ms
M_FREQ(2,2)	8	8	256Hz
T_SOUND(2,2)	8	4	400ms
M_FREQ(2,3)	8	0	Silence

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T_SOUND(2,3)	8	4	400ms
M_FREQ(2,4)	8	16	512Hz
T_SOUND(2,4)	8	4	400ms
M_FREQ(2,5)	8	8	256Hz
T_SOUND(2,5)	8	4	400ms
M_FREQ(2,6)	8	0	Silence
T_SOUND(2,6)	8	4	400ms
M_FREQ(2,7)	8	16	512Hz
T_SOUND(2,7)	8	4	400ms
M_FREQ(2,8)	8	8	256Hz
T_SOUND(2,8)	8	4	400ms
M_FREQ(2,9)	8	0	Silence
T_SOUND(2,9)	8	4	400ms
M_FREQ(2,10)	8	16	512Hz
T_SOUND(2,10)	8	4	400ms
M_FREQ(2,11)	8	8	256Hz
T_SOUND(2,11)	8	4	400ms
M_FREQ(2,12)	8	0	Silence
T_SOUND(2,12)	8	4	400ms
M_FREQ(2,13)	8	16	512Hz
T_SOUND(2,13)	8	4	400ms
M_FREQ(2,14)	8	8	256Hz
T_SOUND(2,14)	8	4	400ms



M_FREQ(2,15)	8	0	Silence
T_SOUND(2,15)	8	4	400ms
Padding bits	7	0000000b	

2.5.18 Test Case 7e.18

TEST CASE HEADER	
Test case identification	DMI Function
	7e1.0.2.(7e2.0.2.1.2.1.2.0).1.(7e2.0.2.1.2.2.1.0).1.(7e2.0.2.1.2.3.0.1.0).1. (7e2.0.2.2.1.1.2.0).1.(7e2.0.2.3.0.1.1.2.0).1.(7e2.0.2.2.1.2.1.0).1. (7e2.0.2.3.0.1.3.0.1.0).1.(7e2.0.2.2.1.1.2.0).1.(7e2.0.2.3.0.1.2.1.0).1. (7e2.0.2.2.1.3.0.1.0).1.(7e2.0.2.3.0.1.1.2.0).2
	Sound test for unified DMI, DMI configuration for other STMs, with 2 sound requests at once and 15 segments in sound requests.: Two sounds with 15 segments of 400ms duration are requested and partly played at the same time. All possible combinations of Q_SOUND are tested.
	Same test steps and messages as in test case 7e. 17
ERTMS/ETCS on-board requirements tested	SUBSET-035 13.4.1.1, 13.4.1.2, 13.4.1.8, 13.4.5.3, 13.4.5.4
	ERA ERTMS 015560 (DMI Spec) 9.3.6
STM requirements tested	
Packets transmitted via FFFIS STM	STM-15, STM-46
ERTMS/ETCS on-board configuration	For active STM: Unified DMI service: 7a.1.
	DMI configuration 7a.3, 7a.5, 7a.6, 7a.7, 7a.8 or 7a.9 for at least one other STM



Comments and constraints	Starting and end conditions as for test case 7e.1
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2.5.19 Test Case 7e.19

TEST CASE HEADER	
Test case identification	DMI Function
	7e1.0.1.(7e2.0.2.1.1.1.1.0).1.(7e2.0.2.1.1.2.1.0).1.(7e2.0.2.1.1.3.0.1.0).1. (7e2.0.2.2.1.1.1.0).1.(7e2.0.2.3.0.1.1.1.0).1.(7e2.0.2.2.1.2.1.0).1. (7e2.0.2.3.0.1.3.0.1.0).1.(7e2.0.2.2.1.1.1.0).1.(7e2.0.2.3.0.1.2.1.0).1. (7e2.0.2.2.1.3.0.1.0).1.(7e2.0.2.3.0.1.1.1.0).2
	Sound test for unified DMI, no DMI configuration for other STMs, with 2 sound requests at once and 31 segments in sound requests.:
	Two sounds with 31 segments of 100ms duration are requested and partly played at the same time. All possible combinations of Q_SOUND are tested.
ERTMS/ETCS on-board requirements tested	SUBSET-035 13.4.1.1, 13.4.1.2, 13.4.1.8, 13.4.5.3, 13.4.5.4
	ERA ERTMS 015560 (DMI Spec) 9.3.6
STM requirements tested	
Packets transmitted via FFFIS STM	STM-15, STM-46
ERTMS/ETCS on-board configuration	For active STM: Unified DMI service: 7a.1. No DMI configuration for any other STM
Comments and constraints	Starting and end conditions as for test case 7e.1

ERTMS/ETCS on-board Test Case

Step	Description/Comments	Input I/F	Input	Input Action	Output	Output	Output action
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			time		I/F	time limit	
1	STM requests one shot play for sound with identifier 151 with 31 segments (256, 288, 320, 352, 384, 448, 480, 512, 576, 672, 704, 768, 896, 992, 1056, 1120, 1056, 992, 896, 768, 704, 672, 576, 512, 480, 448, 384, 352, 320, 288, 256 Hz) and STM requests one shot play for sound with identifier 152 with 31 segments (128, 640, 1152, 1664, 2176, 2688, 3200, 3712, 4224, 4736, 5248, 5760, 6272, 6784, 7296, 8160, 7296, 6784, 6272, 5760, 5248, 4736, 4224, 3712, 3200, 2688, 2176, 1664, 1152, 640, 128 Hz)	PROF	T0	connection of active DMI channel: Message-S1	DMI		First requested sound with identifier 151 is played once. Second requested sound with identifier 152 is played once
2	STM requests one shot play for sound with identifier 151 with 31 segments (256, 288, 320, 352, 384, 448, 480, 512, 576, 672, 704, 768, 896, 992, 1056, 1120, 1056, 992, 896, 768, 704, 672, 576, 512, 480, 448, 384, 352, 320, 288, 256 Hz) and STM requests continuous play for sound with identifier 152 with 31 segments (128, 640, 1152, 1664, 2176, 2688, 3200, 3712, 4224, 4736, 5248, 5760, 6272, 6784, 7296, 8160, 7296, 6784, 6272, 5760, 5248, 4736, 4224, 3712, 3200, 2688, 2176, 1664, 1152, 640, 128 Hz)	PROF	T0+15s	connection of active DMI channel: Message-S2	DMI		First requested sound with identifier 151 is played once. Second requested sound with identifier 152 is played continuously
3	STM requests one shot play for sound with identifier 151 with 31	PROF	T0+40s	connection of active DMI channel: Message-S3	DMI		First requested sound with identifier 151 is played once.



	segments (256, 288, 320, 352, 384, 448, 480, 512, 576, 672, 704, 768, 896, 992, 1056, 1120, 1056, 992, 896, 768, 704, 672, 576, 512, 480, 448, 384, 352, 320, 288, 256 Hz) and STM requests stop sound for sound with identifier 152						Sound with identifier 152 is stopped.
4	STM requests continuous play for sound with identifier 151 with 31 segments (256, 288, 320, 352, 384, 448, 480, 512, 576, 672, 704, 768, 896, 992, 1056, 1120, 1056, 992, 896, 768, 704, 672, 576, 512, 480, 448, 384, 352, 320, 288, 256 Hz) and STM requests one shot play for sound with identifier 152 with 31 segments (128, 640, 1152, 1664, 2176, 2688, 3200, 3712, 4224, 4736, 5248, 5760, 6272, 6784, 7296, 8160, 7296, 6784, 6272, 5760, 5248, 4736, 4224, 3712, 3200, 2688, 2176, 1664, 1152, 640, 128 Hz)	PROF	T0+55s	connection of active DMI channel: Message-S4	DMI		First requested sound with identifier 151 is played continuously. Second requested sound with identifier 152 is played once
5	STM requests stop sound for sound with identifier 151 and STM requests one shot play for sound with identifier 152 with 31 segments (128, 640, 1152, 1664, 2176, 2688, 3200, 3712, 4224, 4736, 5248, 5760, 6272, 6784, 7296, 8160, 7296, 6784, 6272, 5760, 5248, 4736, 4224, 3712, 3200, 2688, 2176, 1664, 1152, 640, 128 Hz)	PROF	T0+80s	connection of active DMI channel: Message-S5	DMI		Sound with identifier 151 is stopped. Second requested sound with identifier 152 is played once



6	STM requests continuous play for sound with identifier 151 with 31 segments (256, 288, 320, 352, 384, 448, 480, 512, 576, 672, 704, 768, 896, 992, 1056, 1120, 1056, 992, 896, 768, 704, 672, 576, 512, 480, 448, 384, 352, 320, 288, 256 Hz) and STM requests continuous play for sound with identifier 152 with 31 segments (128, 640, 1152, 1664, 2176, 2688, 3200, 3712, 4224, 4736, 5248, 5760, 6272, 6784, 7296, 8160, 7296, 6784, 6272, 5760, 5248, 4736, 4224, 3712, 3200, 2688, 2176, 1664, 1152, 640, 128 Hz)	PROF	T0+95s	connection of active DMI channel: Message-S6	DMI		First requested sound with identifier 151 is played continuously. Second requested sound with identifier 152 is played continuously
7	STM requests stop sound for sound with identifier 151 and STM requests stop sound for sound with identifier 152	PROF	T0+120s	connection of active DMI channel: Message-S7	DMI		Sound with identifier 151 is stopped. Sound with identifier 152 is stopped.
8	STM requests continuous play for sound with identifier 151 with 31 segments (256, 288, 320, 352, 384, 448, 480, 512, 576, 672, 704, 768, 896, 992, 1056, 1120, 1056, 992, 896, 768, 704, 672, 576, 512, 480, 448, 384, 352, 320, 288, 256 Hz) and STM requests one shot play for sound with identifier 153 with 31 segments (512, 256, 0, 512, 256, 0, 512, 256, 0, 512, 256, 0, 512, 256, 0, 512, 0, 256, 512, 0, 256, 512, 0, 256, 512, 0, 256, 512, 0, 256, 512, 0, 256, 512 Hz)	PROF	T0+135s	connection of active DMI channel: Message-S8	DMI		First requested sound with identifier 151 is played continuously. Second requested sound with identifier 153 is played once



9	STM requests stop sound for sound with identifier 151 and STM requests continuous play for sound with identifier 153 with 31 segments (512, 256, 0, 512, 256, 0, 512, 256, 0, 512, 256, 0, 512, 256, 0, 512, 0, 256, 512, 0, 256, 512, 0, 256, 512, 0, 256, 512, 0, 256, 512, 0, 256, 512 Hz)	PROF	T0+160s	connection of active DMI channel: Message-S9	DMI		Sound with identifier 151 is stopped. Second requested sound with identifier 153 is played continuously
10	STM requests continuous play for sound with identifier 151 with 31 segments (256, 288, 320, 352, 384, 448, 480, 512, 576, 672, 704, 768, 896, 992, 1056, 1120, 1056, 992, 896, 768, 704, 672, 576, 512, 480, 448, 384, 352, 320, 288, 256 Hz) and STM requests stop sound for sound with identifier 153	PROF	T0+185s	connection of active DMI channel: Message-S10	DMI		First requested sound with identifier 151 is played continuously. Sound with identifier 153 is stopped.
11	STM requests stop sound for sound with identifier 151 and STM requests one shot play for sound with identifier 153 with 31 segments (512, 256, 0, 512, 256, 0, 512, 256, 0, 512, 256, 0, 512, 256, 0, 512, 0, 256, 512, 0, 256, 512, 0, 256, 512, 0, 256, 512, 0, 256, 512, 0, 256, 512 Hz)	PROF	T0+210s	connection of active DMI channel: Message-S11	DMI		Sound with identifier 151 is stopped. Second requested sound with identifier 153 is played once

Message-S1: STM requests one shot play for first sound and one shot play for second sound

VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	137	Message Length



NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	1048	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	151	
Q_SOUND(1)	2	1	One shot play
N_ITER(1)	5	31	31 segments
M_FREQ(1,1)	8	8	256Hz
T_SOUND(1,1)	8	1	100ms
M_FREQ(1,2)	8	9	288Hz
T_SOUND(1,2)	8	1	100ms
M_FREQ(1,3)	8	10	320Hz
T_SOUND(1,3)	8	1	100ms
M_FREQ(1,4)	8	11	352Hz
T_SOUND(1,4)	8	1	100ms
M_FREQ(1,5)	8	12	384Hz
T_SOUND(1,5)	8	1	100ms
M_FREQ(1,6)	8	14	448Hz
T_SOUND(1,6)	8	1	100ms
M_FREQ(1,7)	8	15	480Hz
T_SOUND(1,7)	8	1	100ms



M_FREQ(1,8)	8	16	512Hz
T_SOUND(1,8)	8	1	100ms
M_FREQ(1,9)	8	18	576Hz
T_SOUND(1,9)	8	1	100ms
M_FREQ(1,10)	8	21	672Hz
T_SOUND(1,10)	8	1	100ms
M_FREQ(1,11)	8	22	704Hz
T_SOUND(1,11)	8	1	100ms
M_FREQ(1,12)	8	24	768Hz
T_SOUND(1,12)	8	1	100ms
M_FREQ(1,13)	8	28	896Hz
T_SOUND(1,13)	8	1	100ms
M_FREQ(1,14)	8	31	992Hz
T_SOUND(1,14)	8	1	100ms
M_FREQ(1,15)	8	33	1056Hz
T_SOUND(1,15)	8	1	100ms
M_FREQ(1,16)	8	35	1120Hz
T_SOUND(1,16)	8	1	100ms
M_FREQ(1,17)	8	33	1056Hz
T_SOUND(1,17)	8	1	100ms
M_FREQ(1,18)	8	31	992Hz
T_SOUND(1,18)	8	1	100ms
M_FREQ(1,19)	8	28	896Hz



T_SOUND(1,19)	8	1	100ms
M_FREQ(1,20)	8	24	768Hz
T_SOUND(1,20)	8	1	100ms
M_FREQ(1,21)	8	22	704Hz
T_SOUND(1,21)	8	1	100ms
M_FREQ(1,22)	8	21	672Hz
T_SOUND(1,22)	8	1	100ms
M_FREQ(1,23)	8	18	576Hz
T_SOUND(1,23)	8	1	100ms
M_FREQ(1,24)	8	16	512Hz
T_SOUND(1,24)	8	1	100ms
M_FREQ(1,25)	8	15	480Hz
T_SOUND(1,25)	8	1	100ms
M_FREQ(1,26)	8	14	448Hz
T_SOUND(1,26)	8	1	100ms
M_FREQ(1,27)	8	12	384Hz
T_SOUND(1,27)	8	1	100ms
M_FREQ(1,28)	8	11	352Hz
T_SOUND(1,28)	8	1	100ms
M_FREQ(1,29)	8	10	320Hz
T_SOUND(1,29)	8	1	100ms
M_FREQ(1,30)	8	9	288Hz
T_SOUND(1,30)	8	1	100ms



M_FREQ(1,31)	8	8	256Hz
T_SOUND(1,31)	8	1	100ms
NID_SOUND(2)	8	152	
Q_SOUND(2)	2	1	One shot play
N_ITER(2)	5	31	31 segments
M_FREQ(2,1)	8	4	128Hz
T_SOUND(2,1)	8	1	100ms
M_FREQ(2,2)	8	20	640Hz
T_SOUND(2,2)	8	1	100ms
M_FREQ(2,3)	8	36	1152Hz
T_SOUND(2,3)	8	1	100ms
M_FREQ(2,4)	8	52	1664Hz
T_SOUND(2,4)	8	1	100ms
M_FREQ(2,5)	8	68	2176Hz
T_SOUND(2,5)	8	1	100ms
M_FREQ(2,6)	8	84	2688Hz
T_SOUND(2,6)	8	1	100ms
M_FREQ(2,7)	8	100	3200Hz
T_SOUND(2,7)	8	1	100ms
M_FREQ(2,8)	8	116	3712Hz
T_SOUND(2,8)	8	1	100ms
M_FREQ(2,9)	8	132	4224Hz
T_SOUND(2,9)	8	1	100ms



M_FREQ(2,10)	8	148	4736Hz
T_SOUND(2,10)	8	1	100ms
M_FREQ(2,11)	8	164	5248Hz
T_SOUND(2,11)	8	1	100ms
M_FREQ(2,12)	8	180	5760Hz
T_SOUND(2,12)	8	1	100ms
M_FREQ(2,13)	8	196	6272Hz
T_SOUND(2,13)	8	1	100ms
M_FREQ(2,14)	8	212	6784Hz
T_SOUND(2,14)	8	1	100ms
M_FREQ(2,15)	8	228	7296Hz
T_SOUND(2,15)	8	1	100ms
M_FREQ(2,16)	8	255	8160Hz
T_SOUND(2,16)	8	1	100ms
M_FREQ(2,17)	8	228	7296Hz
T_SOUND(2,17)	8	1	100ms
M_FREQ(2,18)	8	212	6784Hz
T_SOUND(2,18)	8	1	100ms
M_FREQ(2,19)	8	196	6272Hz
T_SOUND(2,19)	8	1	100ms
M_FREQ(2,20)	8	180	5760Hz
T_SOUND(2,20)	8	1	100ms
M_FREQ(2,21)	8	164	5248Hz



T_SOUND(2,21)	8	1	100ms
M_FREQ(2,22)	8	148	4736Hz
T_SOUND(2,22)	8	1	100ms
M_FREQ(2,23)	8	132	4224Hz
T_SOUND(2,23)	8	1	100ms
M_FREQ(2,24)	8	116	3712Hz
T_SOUND(2,24)	8	1	100ms
M_FREQ(2,25)	8	100	3200Hz
T_SOUND(2,25)	8	1	100ms
M_FREQ(2,26)	8	84	2688Hz
T_SOUND(2,26)	8	1	100ms
M_FREQ(2,27)	8	68	2176Hz
T_SOUND(2,27)	8	1	100ms
M_FREQ(2,28)	8	52	1664Hz
T_SOUND(2,28)	8	1	100ms
M_FREQ(2,29)	8	36	1152Hz
T_SOUND(2,29)	8	1	100ms
M_FREQ(2,30)	8	20	640Hz
T_SOUND(2,30)	8	1	100ms
M_FREQ(2,31)	8	4	128Hz
T_SOUND(2,31)	8	1	100ms
Padding bits	7	0000000b	



Message-S2: STM requests one shot play for first sound and continuous play for second sound

VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	137	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	1048	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	151	
Q_SOUND(1)	2	1	One shot play
N_ITER(1)	5	31	31 segments
M_FREQ(1,1)	8	8	256Hz
T_SOUND(1,1)	8	1	100ms
M_FREQ(1,2)	8	9	288Hz
T_SOUND(1,2)	8	1	100ms
M_FREQ(1,3)	8	10	320Hz
T_SOUND(1,3)	8	1	100ms
M_FREQ(1,4)	8	11	352Hz
T_SOUND(1,4)	8	1	100ms
M_FREQ(1,5)	8	12	384Hz
T_SOUND(1,5)	8	1	100ms



M_FREQ(1,6)	8	14	448Hz
T_SOUND(1,6)	8	1	100ms
M_FREQ(1,7)	8	15	480Hz
T_SOUND(1,7)	8	1	100ms
M_FREQ(1,8)	8	16	512Hz
T_SOUND(1,8)	8	1	100ms
M_FREQ(1,9)	8	18	576Hz
T_SOUND(1,9)	8	1	100ms
M_FREQ(1,10)	8	21	672Hz
T_SOUND(1,10)	8	1	100ms
M_FREQ(1,11)	8	22	704Hz
T_SOUND(1,11)	8	1	100ms
M_FREQ(1,12)	8	24	768Hz
T_SOUND(1,12)	8	1	100ms
M_FREQ(1,13)	8	28	896Hz
T_SOUND(1,13)	8	1	100ms
M_FREQ(1,14)	8	31	992Hz
T_SOUND(1,14)	8	1	100ms
M_FREQ(1,15)	8	33	1056Hz
T_SOUND(1,15)	8	1	100ms
M_FREQ(1,16)	8	35	1120Hz
T_SOUND(1,16)	8	1	100ms
M_FREQ(1,17)	8	33	1056Hz



T_SOUND(1,17)	8	1	100ms
M_FREQ(1,18)	8	31	992Hz
T_SOUND(1,18)	8	1	100ms
M_FREQ(1,19)	8	28	896Hz
T_SOUND(1,19)	8	1	100ms
M_FREQ(1,20)	8	24	768Hz
T_SOUND(1,20)	8	1	100ms
M_FREQ(1,21)	8	22	704Hz
T_SOUND(1,21)	8	1	100ms
M_FREQ(1,22)	8	21	672Hz
T_SOUND(1,22)	8	1	100ms
M_FREQ(1,23)	8	18	576Hz
T_SOUND(1,23)	8	1	100ms
M_FREQ(1,24)	8	16	512Hz
T_SOUND(1,24)	8	1	100ms
M_FREQ(1,25)	8	15	480Hz
T_SOUND(1,25)	8	1	100ms
M_FREQ(1,26)	8	14	448Hz
T_SOUND(1,26)	8	1	100ms
M_FREQ(1,27)	8	12	384Hz
T_SOUND(1,27)	8	1	100ms
M_FREQ(1,28)	8	11	352Hz
T_SOUND(1,28)	8	1	100ms



M_FREQ(1,29)	8	10	320Hz
T_SOUND(1,29)	8	1	100ms
M_FREQ(1,30)	8	9	288Hz
T_SOUND(1,30)	8	1	100ms
M_FREQ(1,31)	8	8	256Hz
T_SOUND(1,31)	8	1	100ms
NID_SOUND(2)	8	152	
Q_SOUND(2)	2	2	Continuous play
N_ITER(2)	5	31	31 segments
M_FREQ(2,1)	8	4	128Hz
T_SOUND(2,1)	8	1	100ms
M_FREQ(2,2)	8	20	640Hz
T_SOUND(2,2)	8	1	100ms
M_FREQ(2,3)	8	36	1152Hz
T_SOUND(2,3)	8	1	100ms
M_FREQ(2,4)	8	52	1664Hz
T_SOUND(2,4)	8	1	100ms
M_FREQ(2,5)	8	68	2176Hz
T_SOUND(2,5)	8	1	100ms
M_FREQ(2,6)	8	84	2688Hz
T_SOUND(2,6)	8	1	100ms
M_FREQ(2,7)	8	100	3200Hz
T_SOUND(2,7)	8	1	100ms



M_FREQ(2,8)	8	116	3712Hz
T_SOUND(2,8)	8	1	100ms
M_FREQ(2,9)	8	132	4224Hz
T_SOUND(2,9)	8	1	100ms
M_FREQ(2,10)	8	148	4736Hz
T_SOUND(2,10)	8	1	100ms
M_FREQ(2,11)	8	164	5248Hz
T_SOUND(2,11)	8	1	100ms
M_FREQ(2,12)	8	180	5760Hz
T_SOUND(2,12)	8	1	100ms
M_FREQ(2,13)	8	196	6272Hz
T_SOUND(2,13)	8	1	100ms
M_FREQ(2,14)	8	212	6784Hz
T_SOUND(2,14)	8	1	100ms
M_FREQ(2,15)	8	228	7296Hz
T_SOUND(2,15)	8	1	100ms
M_FREQ(2,16)	8	255	8160Hz
T_SOUND(2,16)	8	1	100ms
M_FREQ(2,17)	8	228	7296Hz
T_SOUND(2,17)	8	1	100ms
M_FREQ(2,18)	8	212	6784Hz
T_SOUND(2,18)	8	1	100ms
M_FREQ(2,19)	8	196	6272Hz



T_SOUND(2,19)	8	1	100ms
M_FREQ(2,20)	8	180	5760Hz
T_SOUND(2,20)	8	1	100ms
M_FREQ(2,21)	8	164	5248Hz
T_SOUND(2,21)	8	1	100ms
M_FREQ(2,22)	8	148	4736Hz
T_SOUND(2,22)	8	1	100ms
M_FREQ(2,23)	8	132	4224Hz
T_SOUND(2,23)	8	1	100ms
M_FREQ(2,24)	8	116	3712Hz
T_SOUND(2,24)	8	1	100ms
M_FREQ(2,25)	8	100	3200Hz
T_SOUND(2,25)	8	1	100ms
M_FREQ(2,26)	8	84	2688Hz
T_SOUND(2,26)	8	1	100ms
M_FREQ(2,27)	8	68	2176Hz
T_SOUND(2,27)	8	1	100ms
M_FREQ(2,28)	8	52	1664Hz
T_SOUND(2,28)	8	1	100ms
M_FREQ(2,29)	8	36	1152Hz
T_SOUND(2,29)	8	1	100ms
M_FREQ(2,30)	8	20	640Hz
T_SOUND(2,30)	8	1	100ms



M_FREQ(2,31)	8	4	128Hz
T_SOUND(2,31)	8	1	100ms
Padding bits	7	0000000b	

Message-S3: STM requests one shot play for first sound and stop sound for second sound			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	75	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	552	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	151	
Q_SOUND(1)	2	1	One shot play
N_ITER(1)	5	31	31 segments
M_FREQ(1,1)	8	8	256Hz
T_SOUND(1,1)	8	1	100ms
M_FREQ(1,2)	8	9	288Hz
T_SOUND(1,2)	8	1	100ms
M_FREQ(1,3)	8	10	320Hz
T_SOUND(1,3)	8	1	100ms

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M_FREQ(1,4)	8	11	352Hz
T_SOUND(1,4)	8	1	100ms
M_FREQ(1,5)	8	12	384Hz
T_SOUND(1,5)	8	1	100ms
M_FREQ(1,6)	8	14	448Hz
T_SOUND(1,6)	8	1	100ms
M_FREQ(1,7)	8	15	480Hz
T_SOUND(1,7)	8	1	100ms
M_FREQ(1,8)	8	16	512Hz
T_SOUND(1,8)	8	1	100ms
M_FREQ(1,9)	8	18	576Hz
T_SOUND(1,9)	8	1	100ms
M_FREQ(1,10)	8	21	672Hz
T_SOUND(1,10)	8	1	100ms
M_FREQ(1,11)	8	22	704Hz
T_SOUND(1,11)	8	1	100ms
M_FREQ(1,12)	8	24	768Hz
T_SOUND(1,12)	8	1	100ms
M_FREQ(1,13)	8	28	896Hz
T_SOUND(1,13)	8	1	100ms
M_FREQ(1,14)	8	31	992Hz
T_SOUND(1,14)	8	1	100ms
M_FREQ(1,15)	8	33	1056Hz



T_SOUND(1,15)	8	1	100ms
M_FREQ(1,16)	8	35	1120Hz
T_SOUND(1,16)	8	1	100ms
M_FREQ(1,17)	8	33	1056Hz
T_SOUND(1,17)	8	1	100ms
M_FREQ(1,18)	8	31	992Hz
T_SOUND(1,18)	8	1	100ms
M_FREQ(1,19)	8	28	896Hz
T_SOUND(1,19)	8	1	100ms
M_FREQ(1,20)	8	24	768Hz
T_SOUND(1,20)	8	1	100ms
M_FREQ(1,21)	8	22	704Hz
T_SOUND(1,21)	8	1	100ms
M_FREQ(1,22)	8	21	672Hz
T_SOUND(1,22)	8	1	100ms
M_FREQ(1,23)	8	18	576Hz
T_SOUND(1,23)	8	1	100ms
M_FREQ(1,24)	8	16	512Hz
T_SOUND(1,24)	8	1	100ms
M_FREQ(1,25)	8	15	480Hz
T_SOUND(1,25)	8	1	100ms
M_FREQ(1,26)	8	14	448Hz
T_SOUND(1,26)	8	1	100ms



M_FREQ(1,27)	8	12	384Hz
T_SOUND(1,27)	8	1	100ms
M_FREQ(1,28)	8	11	352Hz
T_SOUND(1,28)	8	1	100ms
M_FREQ(1,29)	8	10	320Hz
T_SOUND(1,29)	8	1	100ms
M_FREQ(1,30)	8	9	288Hz
T_SOUND(1,30)	8	1	100ms
M_FREQ(1,31)	8	8	256Hz
T_SOUND(1,31)	8	1	100ms
NID_SOUND(2)	8	152	
Q_SOUND(2)	2	0	Stop sound
N_ITER(2)	5	0	no sound segments
Padding bits	7	0000000b	

Message-S4: STM requests continuous play for first sound and one shot play for second sound			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	137	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)



L_PACKET	13	1048	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	151	
Q_SOUND(1)	2	2	Continuous play
N_ITER(1)	5	31	31 segments
M_FREQ(1,1)	8	8	256Hz
T_SOUND(1,1)	8	1	100ms
M_FREQ(1,2)	8	9	288Hz
T_SOUND(1,2)	8	1	100ms
M_FREQ(1,3)	8	10	320Hz
T_SOUND(1,3)	8	1	100ms
M_FREQ(1,4)	8	11	352Hz
T_SOUND(1,4)	8	1	100ms
M_FREQ(1,5)	8	12	384Hz
T_SOUND(1,5)	8	1	100ms
M_FREQ(1,6)	8	14	448Hz
T_SOUND(1,6)	8	1	100ms
M_FREQ(1,7)	8	15	480Hz
T_SOUND(1,7)	8	1	100ms
M_FREQ(1,8)	8	16	512Hz
T_SOUND(1,8)	8	1	100ms
M_FREQ(1,9)	8	18	576Hz
T_SOUND(1,9)	8	1	100ms



M_FREQ(1,10)	8	21	672Hz
T_SOUND(1,10)	8	1	100ms
M_FREQ(1,11)	8	22	704Hz
T_SOUND(1,11)	8	1	100ms
M_FREQ(1,12)	8	24	768Hz
T_SOUND(1,12)	8	1	100ms
M_FREQ(1,13)	8	28	896Hz
T_SOUND(1,13)	8	1	100ms
M_FREQ(1,14)	8	31	992Hz
T_SOUND(1,14)	8	1	100ms
M_FREQ(1,15)	8	33	1056Hz
T_SOUND(1,15)	8	1	100ms
M_FREQ(1,16)	8	35	1120Hz
T_SOUND(1,16)	8	1	100ms
M_FREQ(1,17)	8	33	1056Hz
T_SOUND(1,17)	8	1	100ms
M_FREQ(1,18)	8	31	992Hz
T_SOUND(1,18)	8	1	100ms
M_FREQ(1,19)	8	28	896Hz
T_SOUND(1,19)	8	1	100ms
M_FREQ(1,20)	8	24	768Hz
T_SOUND(1,20)	8	1	100ms
M_FREQ(1,21)	8	22	704Hz



T_SOUND(1,21)	8	1	100ms
M_FREQ(1,22)	8	21	672Hz
T_SOUND(1,22)	8	1	100ms
M_FREQ(1,23)	8	18	576Hz
T_SOUND(1,23)	8	1	100ms
M_FREQ(1,24)	8	16	512Hz
T_SOUND(1,24)	8	1	100ms
M_FREQ(1,25)	8	15	480Hz
T_SOUND(1,25)	8	1	100ms
M_FREQ(1,26)	8	14	448Hz
T_SOUND(1,26)	8	1	100ms
M_FREQ(1,27)	8	12	384Hz
T_SOUND(1,27)	8	1	100ms
M_FREQ(1,28)	8	11	352Hz
T_SOUND(1,28)	8	1	100ms
M_FREQ(1,29)	8	10	320Hz
T_SOUND(1,29)	8	1	100ms
M_FREQ(1,30)	8	9	288Hz
T_SOUND(1,30)	8	1	100ms
M_FREQ(1,31)	8	8	256Hz
T_SOUND(1,31)	8	1	100ms
NID_SOUND(2)	8	152	
Q_SOUND(2)	2	1	One shot play



N_ITER(2)	5	31	31 segments
M_FREQ(2,1)	8	4	128Hz
T_SOUND(2,1)	8	1	100ms
M_FREQ(2,2)	8	20	640Hz
T_SOUND(2,2)	8	1	100ms
M_FREQ(2,3)	8	36	1152Hz
T_SOUND(2,3)	8	1	100ms
M_FREQ(2,4)	8	52	1664Hz
T_SOUND(2,4)	8	1	100ms
M_FREQ(2,5)	8	68	2176Hz
T_SOUND(2,5)	8	1	100ms
M_FREQ(2,6)	8	84	2688Hz
T_SOUND(2,6)	8	1	100ms
M_FREQ(2,7)	8	100	3200Hz
T_SOUND(2,7)	8	1	100ms
M_FREQ(2,8)	8	116	3712Hz
T_SOUND(2,8)	8	1	100ms
M_FREQ(2,9)	8	132	4224Hz
T_SOUND(2,9)	8	1	100ms
M_FREQ(2,10)	8	148	4736Hz
T_SOUND(2,10)	8	1	100ms
M_FREQ(2,11)	8	164	5248Hz
T_SOUND(2,11)	8	1	100ms



M_FREQ(2,12)	8	180	5760Hz
T_SOUND(2,12)	8	1	100ms
M_FREQ(2,13)	8	196	6272Hz
T_SOUND(2,13)	8	1	100ms
M_FREQ(2,14)	8	212	6784Hz
T_SOUND(2,14)	8	1	100ms
M_FREQ(2,15)	8	228	7296Hz
T_SOUND(2,15)	8	1	100ms
M_FREQ(2,16)	8	255	8160Hz
T_SOUND(2,16)	8	1	100ms
M_FREQ(2,17)	8	228	7296Hz
T_SOUND(2,17)	8	1	100ms
M_FREQ(2,18)	8	212	6784Hz
T_SOUND(2,18)	8	1	100ms
M_FREQ(2,19)	8	196	6272Hz
T_SOUND(2,19)	8	1	100ms
M_FREQ(2,20)	8	180	5760Hz
T_SOUND(2,20)	8	1	100ms
M_FREQ(2,21)	8	164	5248Hz
T_SOUND(2,21)	8	1	100ms
M_FREQ(2,22)	8	148	4736Hz
T_SOUND(2,22)	8	1	100ms
M_FREQ(2,23)	8	132	4224Hz



T_SOUND(2,23)	8	1	100ms
M_FREQ(2,24)	8	116	3712Hz
T_SOUND(2,24)	8	1	100ms
M_FREQ(2,25)	8	100	3200Hz
T_SOUND(2,25)	8	1	100ms
M_FREQ(2,26)	8	84	2688Hz
T_SOUND(2,26)	8	1	100ms
M_FREQ(2,27)	8	68	2176Hz
T_SOUND(2,27)	8	1	100ms
M_FREQ(2,28)	8	52	1664Hz
T_SOUND(2,28)	8	1	100ms
M_FREQ(2,29)	8	36	1152Hz
T_SOUND(2,29)	8	1	100ms
M_FREQ(2,30)	8	20	640Hz
T_SOUND(2,30)	8	1	100ms
M_FREQ(2,31)	8	4	128Hz
T_SOUND(2,31)	8	1	100ms
Padding bits	7	0000000b	

Message-S5: STM requests stop sound for first sound and one shot play for second sound

VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	75	Message Length



NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	552	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	151	
Q_SOUND(1)	2	0	Stop sound
N_ITER(1)	5	0	no sound segments
NID_SOUND(2)	8	152	
Q_SOUND(2)	2	1	One shot play
N_ITER(2)	5	31	31 segments
M_FREQ(2,1)	8	4	128Hz
T_SOUND(2,1)	8	1	100ms
M_FREQ(2,2)	8	20	640Hz
T_SOUND(2,2)	8	1	100ms
M_FREQ(2,3)	8	36	1152Hz
T_SOUND(2,3)	8	1	100ms
M_FREQ(2,4)	8	52	1664Hz
T_SOUND(2,4)	8	1	100ms
M_FREQ(2,5)	8	68	2176Hz
T_SOUND(2,5)	8	1	100ms
M_FREQ(2,6)	8	84	2688Hz



T_SOUND(2,6)	8	1	100ms
M_FREQ(2,7)	8	100	3200Hz
T_SOUND(2,7)	8	1	100ms
M_FREQ(2,8)	8	116	3712Hz
T_SOUND(2,8)	8	1	100ms
M_FREQ(2,9)	8	132	4224Hz
T_SOUND(2,9)	8	1	100ms
M_FREQ(2,10)	8	148	4736Hz
T_SOUND(2,10)	8	1	100ms
M_FREQ(2,11)	8	164	5248Hz
T_SOUND(2,11)	8	1	100ms
M_FREQ(2,12)	8	180	5760Hz
T_SOUND(2,12)	8	1	100ms
M_FREQ(2,13)	8	196	6272Hz
T_SOUND(2,13)	8	1	100ms
M_FREQ(2,14)	8	212	6784Hz
T_SOUND(2,14)	8	1	100ms
M_FREQ(2,15)	8	228	7296Hz
T_SOUND(2,15)	8	1	100ms
M_FREQ(2,16)	8	255	8160Hz
T_SOUND(2,16)	8	1	100ms
M_FREQ(2,17)	8	228	7296Hz
T_SOUND(2,17)	8	1	100ms



M_FREQ(2,18)	8	212	6784Hz
T_SOUND(2,18)	8	1	100ms
M_FREQ(2,19)	8	196	6272Hz
T_SOUND(2,19)	8	1	100ms
M_FREQ(2,20)	8	180	5760Hz
T_SOUND(2,20)	8	1	100ms
M_FREQ(2,21)	8	164	5248Hz
T_SOUND(2,21)	8	1	100ms
M_FREQ(2,22)	8	148	4736Hz
T_SOUND(2,22)	8	1	100ms
M_FREQ(2,23)	8	132	4224Hz
T_SOUND(2,23)	8	1	100ms
M_FREQ(2,24)	8	116	3712Hz
T_SOUND(2,24)	8	1	100ms
M_FREQ(2,25)	8	100	3200Hz
T_SOUND(2,25)	8	1	100ms
M_FREQ(2,26)	8	84	2688Hz
T_SOUND(2,26)	8	1	100ms
M_FREQ(2,27)	8	68	2176Hz
T_SOUND(2,27)	8	1	100ms
M_FREQ(2,28)	8	52	1664Hz
T_SOUND(2,28)	8	1	100ms
M_FREQ(2,29)	8	36	1152Hz



T_SOUND(2,29)	8	1	100ms
M_FREQ(2,30)	8	20	640Hz
T_SOUND(2,30)	8	1	100ms
M_FREQ(2,31)	8	4	128Hz
T_SOUND(2,31)	8	1	100ms
Padding bits	7	0000000b	

Message-S6: STM requests continuous play for first sound and continuous play for second sound			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	137	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	1048	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	151	
Q_SOUND(1)	2	2	Continuous play
N_ITER(1)	5	31	31 segments
M_FREQ(1,1)	8	8	256Hz
T_SOUND(1,1)	8	1	100ms
M_FREQ(1,2)	8	9	288Hz



T_SOUND(1,2)	8	1	100ms
M_FREQ(1,3)	8	10	320Hz
T_SOUND(1,3)	8	1	100ms
M_FREQ(1,4)	8	11	352Hz
T_SOUND(1,4)	8	1	100ms
M_FREQ(1,5)	8	12	384Hz
T_SOUND(1,5)	8	1	100ms
M_FREQ(1,6)	8	14	448Hz
T_SOUND(1,6)	8	1	100ms
M_FREQ(1,7)	8	15	480Hz
T_SOUND(1,7)	8	1	100ms
M_FREQ(1,8)	8	16	512Hz
T_SOUND(1,8)	8	1	100ms
M_FREQ(1,9)	8	18	576Hz
T_SOUND(1,9)	8	1	100ms
M_FREQ(1,10)	8	21	672Hz
T_SOUND(1,10)	8	1	100ms
M_FREQ(1,11)	8	22	704Hz
T_SOUND(1,11)	8	1	100ms
M_FREQ(1,12)	8	24	768Hz
T_SOUND(1,12)	8	1	100ms
M_FREQ(1,13)	8	28	896Hz
T_SOUND(1,13)	8	1	100ms



M_FREQ(1,14)	8	31	992Hz
T_SOUND(1,14)	8	1	100ms
M_FREQ(1,15)	8	33	1056Hz
T_SOUND(1,15)	8	1	100ms
M_FREQ(1,16)	8	35	1120Hz
T_SOUND(1,16)	8	1	100ms
M_FREQ(1,17)	8	33	1056Hz
T_SOUND(1,17)	8	1	100ms
M_FREQ(1,18)	8	31	992Hz
T_SOUND(1,18)	8	1	100ms
M_FREQ(1,19)	8	28	896Hz
T_SOUND(1,19)	8	1	100ms
M_FREQ(1,20)	8	24	768Hz
T_SOUND(1,20)	8	1	100ms
M_FREQ(1,21)	8	22	704Hz
T_SOUND(1,21)	8	1	100ms
M_FREQ(1,22)	8	21	672Hz
T_SOUND(1,22)	8	1	100ms
M_FREQ(1,23)	8	18	576Hz
T_SOUND(1,23)	8	1	100ms
M_FREQ(1,24)	8	16	512Hz
T_SOUND(1,24)	8	1	100ms
M_FREQ(1,25)	8	15	480Hz



T_SOUND(1,25)	8	1	100ms
M_FREQ(1,26)	8	14	448Hz
T_SOUND(1,26)	8	1	100ms
M_FREQ(1,27)	8	12	384Hz
T_SOUND(1,27)	8	1	100ms
M_FREQ(1,28)	8	11	352Hz
T_SOUND(1,28)	8	1	100ms
M_FREQ(1,29)	8	10	320Hz
T_SOUND(1,29)	8	1	100ms
M_FREQ(1,30)	8	9	288Hz
T_SOUND(1,30)	8	1	100ms
M_FREQ(1,31)	8	8	256Hz
T_SOUND(1,31)	8	1	100ms
NID_SOUND(2)	8	152	
Q_SOUND(2)	2	2	Continuous play
N_ITER(2)	5	31	31 segments
M_FREQ(2,1)	8	4	128Hz
T_SOUND(2,1)	8	1	100ms
M_FREQ(2,2)	8	20	640Hz
T_SOUND(2,2)	8	1	100ms
M_FREQ(2,3)	8	36	1152Hz
T_SOUND(2,3)	8	1	100ms
M_FREQ(2,4)	8	52	1664Hz



T_SOUND(2,4)	8	1	100ms
M_FREQ(2,5)	8	68	2176Hz
T_SOUND(2,5)	8	1	100ms
M_FREQ(2,6)	8	84	2688Hz
T_SOUND(2,6)	8	1	100ms
M_FREQ(2,7)	8	100	3200Hz
T_SOUND(2,7)	8	1	100ms
M_FREQ(2,8)	8	116	3712Hz
T_SOUND(2,8)	8	1	100ms
M_FREQ(2,9)	8	132	4224Hz
T_SOUND(2,9)	8	1	100ms
M_FREQ(2,10)	8	148	4736Hz
T_SOUND(2,10)	8	1	100ms
M_FREQ(2,11)	8	164	5248Hz
T_SOUND(2,11)	8	1	100ms
M_FREQ(2,12)	8	180	5760Hz
T_SOUND(2,12)	8	1	100ms
M_FREQ(2,13)	8	196	6272Hz
T_SOUND(2,13)	8	1	100ms
M_FREQ(2,14)	8	212	6784Hz
T_SOUND(2,14)	8	1	100ms
M_FREQ(2,15)	8	228	7296Hz
T_SOUND(2,15)	8	1	100ms



M_FREQ(2,16)	8	255	8160Hz
T_SOUND(2,16)	8	1	100ms
M_FREQ(2,17)	8	228	7296Hz
T_SOUND(2,17)	8	1	100ms
M_FREQ(2,18)	8	212	6784Hz
T_SOUND(2,18)	8	1	100ms
M_FREQ(2,19)	8	196	6272Hz
T_SOUND(2,19)	8	1	100ms
M_FREQ(2,20)	8	180	5760Hz
T_SOUND(2,20)	8	1	100ms
M_FREQ(2,21)	8	164	5248Hz
T_SOUND(2,21)	8	1	100ms
M_FREQ(2,22)	8	148	4736Hz
T_SOUND(2,22)	8	1	100ms
M_FREQ(2,23)	8	132	4224Hz
T_SOUND(2,23)	8	1	100ms
M_FREQ(2,24)	8	116	3712Hz
T_SOUND(2,24)	8	1	100ms
M_FREQ(2,25)	8	100	3200Hz
T_SOUND(2,25)	8	1	100ms
M_FREQ(2,26)	8	84	2688Hz
T_SOUND(2,26)	8	1	100ms
M_FREQ(2,27)	8	68	2176Hz



T_SOUND(2,27)	8	1	100ms
M_FREQ(2,28)	8	52	1664Hz
T_SOUND(2,28)	8	1	100ms
M_FREQ(2,29)	8	36	1152Hz
T_SOUND(2,29)	8	1	100ms
M_FREQ(2,30)	8	20	640Hz
T_SOUND(2,30)	8	1	100ms
M_FREQ(2,31)	8	4	128Hz
T_SOUND(2,31)	8	1	100ms
Padding bits	7	0000000b	

Message-S7: STM requests stop sound for first sound and stop sound for second sound			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	13	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	56	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	151	
Q_SOUND(1)	2	0	Stop sound



N_ITER(1)	5	0	no sound segments
NID_SOUND(2)	8	152	
Q_SOUND(2)	2	0	Stop sound
N_ITER(2)	5	0	no sound segments
Padding bits	7	0000000b	

Message-S8: STM requests continuous play for first sound and one shot play for second sound			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	137	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	1048	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	151	
Q_SOUND(1)	2	2	Continuous play
N_ITER(1)	5	31	31 segments
M_FREQ(1,1)	8	8	256Hz
T_SOUND(1,1)	8	1	100ms
M_FREQ(1,2)	8	9	288Hz
T_SOUND(1,2)	8	1	100ms



M_FREQ(1,3)	8	10	320Hz
T_SOUND(1,3)	8	1	100ms
M_FREQ(1,4)	8	11	352Hz
T_SOUND(1,4)	8	1	100ms
M_FREQ(1,5)	8	12	384Hz
T_SOUND(1,5)	8	1	100ms
M_FREQ(1,6)	8	14	448Hz
T_SOUND(1,6)	8	1	100ms
M_FREQ(1,7)	8	15	480Hz
T_SOUND(1,7)	8	1	100ms
M_FREQ(1,8)	8	16	512Hz
T_SOUND(1,8)	8	1	100ms
M_FREQ(1,9)	8	18	576Hz
T_SOUND(1,9)	8	1	100ms
M_FREQ(1,10)	8	21	672Hz
T_SOUND(1,10)	8	1	100ms
M_FREQ(1,11)	8	22	704Hz
T_SOUND(1,11)	8	1	100ms
M_FREQ(1,12)	8	24	768Hz
T_SOUND(1,12)	8	1	100ms
M_FREQ(1,13)	8	28	896Hz
T_SOUND(1,13)	8	1	100ms
M_FREQ(1,14)	8	31	992Hz



T_SOUND(1,14)	8	1	100ms
M_FREQ(1,15)	8	33	1056Hz
T_SOUND(1,15)	8	1	100ms
M_FREQ(1,16)	8	35	1120Hz
T_SOUND(1,16)	8	1	100ms
M_FREQ(1,17)	8	33	1056Hz
T_SOUND(1,17)	8	1	100ms
M_FREQ(1,18)	8	31	992Hz
T_SOUND(1,18)	8	1	100ms
M_FREQ(1,19)	8	28	896Hz
T_SOUND(1,19)	8	1	100ms
M_FREQ(1,20)	8	24	768Hz
T_SOUND(1,20)	8	1	100ms
M_FREQ(1,21)	8	22	704Hz
T_SOUND(1,21)	8	1	100ms
M_FREQ(1,22)	8	21	672Hz
T_SOUND(1,22)	8	1	100ms
M_FREQ(1,23)	8	18	576Hz
T_SOUND(1,23)	8	1	100ms
M_FREQ(1,24)	8	16	512Hz
T_SOUND(1,24)	8	1	100ms
M_FREQ(1,25)	8	15	480Hz
T_SOUND(1,25)	8	1	100ms



M_FREQ(1,26)	8	14	448Hz
T_SOUND(1,26)	8	1	100ms
M_FREQ(1,27)	8	12	384Hz
T_SOUND(1,27)	8	1	100ms
M_FREQ(1,28)	8	11	352Hz
T_SOUND(1,28)	8	1	100ms
M_FREQ(1,29)	8	10	320Hz
T_SOUND(1,29)	8	1	100ms
M_FREQ(1,30)	8	9	288Hz
T_SOUND(1,30)	8	1	100ms
M_FREQ(1,31)	8	8	256Hz
T_SOUND(1,31)	8	1	100ms
NID_SOUND(2)	8	153	
Q_SOUND(2)	2	1	One shot play
N_ITER(2)	5	31	31 segments
M_FREQ(2,1)	8	16	512Hz
T_SOUND(2,1)	8	1	100ms
M_FREQ(2,2)	8	8	256Hz
T_SOUND(2,2)	8	1	100ms
M_FREQ(2,3)	8	0	Silence
T_SOUND(2,3)	8	1	100ms
M_FREQ(2,4)	8	16	512Hz
T_SOUND(2,4)	8	1	100ms



M_FREQ(2,5)	8	8	256Hz
T_SOUND(2,5)	8	1	100ms
M_FREQ(2,6)	8	0	Silence
T_SOUND(2,6)	8	1	100ms
M_FREQ(2,7)	8	16	512Hz
T_SOUND(2,7)	8	1	100ms
M_FREQ(2,8)	8	8	256Hz
T_SOUND(2,8)	8	1	100ms
M_FREQ(2,9)	8	0	Silence
T_SOUND(2,9)	8	1	100ms
M_FREQ(2,10)	8	16	512Hz
T_SOUND(2,10)	8	1	100ms
M_FREQ(2,11)	8	8	256Hz
T_SOUND(2,11)	8	1	100ms
M_FREQ(2,12)	8	0	Silence
T_SOUND(2,12)	8	1	100ms
M_FREQ(2,13)	8	16	512Hz
T_SOUND(2,13)	8	1	100ms
M_FREQ(2,14)	8	8	256Hz
T_SOUND(2,14)	8	1	100ms
M_FREQ(2,15)	8	0	Silence
T_SOUND(2,15)	8	1	100ms
M_FREQ(2,16)	8	16	512Hz



T_SOUND(2,16)	8	1	100ms
M_FREQ(2,17)	8	0	Silence
T_SOUND(2,17)	8	1	100ms
M_FREQ(2,18)	8	8	256Hz
T_SOUND(2,18)	8	1	100ms
M_FREQ(2,19)	8	16	512Hz
T_SOUND(2,19)	8	1	100ms
M_FREQ(2,20)	8	0	Silence
T_SOUND(2,20)	8	1	100ms
M_FREQ(2,21)	8	8	256Hz
T_SOUND(2,21)	8	1	100ms
M_FREQ(2,22)	8	16	512Hz
T_SOUND(2,22)	8	1	100ms
M_FREQ(2,23)	8	0	Silence
T_SOUND(2,23)	8	1	100ms
M_FREQ(2,24)	8	8	256Hz
T_SOUND(2,24)	8	1	100ms
M_FREQ(2,25)	8	16	512Hz
T_SOUND(2,25)	8	1	100ms
M_FREQ(2,26)	8	0	Silence
T_SOUND(2,26)	8	1	100ms
M_FREQ(2,27)	8	8	256Hz
T_SOUND(2,27)	8	1	100ms



M_FREQ(2,28)	8	16	512Hz
T_SOUND(2,28)	8	1	100ms
M_FREQ(2,29)	8	0	Silence
T_SOUND(2,29)	8	1	100ms
M_FREQ(2,30)	8	8	256Hz
T_SOUND(2,30)	8	1	100ms
M_FREQ(2,31)	8	16	512Hz
T_SOUND(2,31)	8	1	100ms
Padding bits	7	0000000b	

Message-S9: STM requests stop sound for first sound and continuous play for second sound			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	75	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	552	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	151	
Q_SOUND(1)	2	0	Stop sound
N_ITER(1)	5	0	no sound segments



NID_SOUND(2)	8	153	
Q_SOUND(2)	2	2	Continuous play
N_ITER(2)	5	31	31 segments
M_FREQ(2,1)	8	16	512Hz
T_SOUND(2,1)	8	1	100ms
M_FREQ(2,2)	8	8	256Hz
T_SOUND(2,2)	8	1	100ms
M_FREQ(2,3)	8	0	Silence
T_SOUND(2,3)	8	1	100ms
M_FREQ(2,4)	8	16	512Hz
T_SOUND(2,4)	8	1	100ms
M_FREQ(2,5)	8	8	256Hz
T_SOUND(2,5)	8	1	100ms
M_FREQ(2,6)	8	0	Silence
T_SOUND(2,6)	8	1	100ms
M_FREQ(2,7)	8	16	512Hz
T_SOUND(2,7)	8	1	100ms
M_FREQ(2,8)	8	8	256Hz
T_SOUND(2,8)	8	1	100ms
M_FREQ(2,9)	8	0	Silence
T_SOUND(2,9)	8	1	100ms
M_FREQ(2,10)	8	16	512Hz
T_SOUND(2,10)	8	1	100ms



M_FREQ(2,11)	8	8	256Hz
T_SOUND(2,11)	8	1	100ms
M_FREQ(2,12)	8	0	Silence
T_SOUND(2,12)	8	1	100ms
M_FREQ(2,13)	8	16	512Hz
T_SOUND(2,13)	8	1	100ms
M_FREQ(2,14)	8	8	256Hz
T_SOUND(2,14)	8	1	100ms
M_FREQ(2,15)	8	0	Silence
T_SOUND(2,15)	8	1	100ms
M_FREQ(2,16)	8	16	512Hz
T_SOUND(2,16)	8	1	100ms
M_FREQ(2,17)	8	0	Silence
T_SOUND(2,17)	8	1	100ms
M_FREQ(2,18)	8	8	256Hz
T_SOUND(2,18)	8	1	100ms
M_FREQ(2,19)	8	16	512Hz
T_SOUND(2,19)	8	1	100ms
M_FREQ(2,20)	8	0	Silence
T_SOUND(2,20)	8	1	100ms
M_FREQ(2,21)	8	8	256Hz
T_SOUND(2,21)	8	1	100ms
M_FREQ(2,22)	8	16	512Hz



T_SOUND(2,22)	8	1	100ms
M_FREQ(2,23)	8	0	Silence
T_SOUND(2,23)	8	1	100ms
M_FREQ(2,24)	8	8	256Hz
T_SOUND(2,24)	8	1	100ms
M_FREQ(2,25)	8	16	512Hz
T_SOUND(2,25)	8	1	100ms
M_FREQ(2,26)	8	0	Silence
T_SOUND(2,26)	8	1	100ms
M_FREQ(2,27)	8	8	256Hz
T_SOUND(2,27)	8	1	100ms
M_FREQ(2,28)	8	16	512Hz
T_SOUND(2,28)	8	1	100ms
M_FREQ(2,29)	8	0	Silence
T_SOUND(2,29)	8	1	100ms
M_FREQ(2,30)	8	8	256Hz
T_SOUND(2,30)	8	1	100ms
M_FREQ(2,31)	8	16	512Hz
T_SOUND(2,31)	8	1	100ms
Padding bits	7	0000000b	

Message-S10: STM requests continuous play for first sound and stop sound for second sound

VARIABLE	Length	VALUE	COMMENT
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NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	75	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	552	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	151	
Q_SOUND(1)	2	2	Continuous play
N_ITER(1)	5	31	31 segments
M_FREQ(1,1)	8	8	256Hz
T_SOUND(1,1)	8	1	100ms
M_FREQ(1,2)	8	9	288Hz
T_SOUND(1,2)	8	1	100ms
M_FREQ(1,3)	8	10	320Hz
T_SOUND(1,3)	8	1	100ms
M_FREQ(1,4)	8	11	352Hz
T_SOUND(1,4)	8	1	100ms
M_FREQ(1,5)	8	12	384Hz
T_SOUND(1,5)	8	1	100ms
M_FREQ(1,6)	8	14	448Hz
T_SOUND(1,6)	8	1	100ms



M_FREQ(1,7)	8	15	480Hz
T_SOUND(1,7)	8	1	100ms
M_FREQ(1,8)	8	16	512Hz
T_SOUND(1,8)	8	1	100ms
M_FREQ(1,9)	8	18	576Hz
T_SOUND(1,9)	8	1	100ms
M_FREQ(1,10)	8	21	672Hz
T_SOUND(1,10)	8	1	100ms
M_FREQ(1,11)	8	22	704Hz
T_SOUND(1,11)	8	1	100ms
M_FREQ(1,12)	8	24	768Hz
T_SOUND(1,12)	8	1	100ms
M_FREQ(1,13)	8	28	896Hz
T_SOUND(1,13)	8	1	100ms
M_FREQ(1,14)	8	31	992Hz
T_SOUND(1,14)	8	1	100ms
M_FREQ(1,15)	8	33	1056Hz
T_SOUND(1,15)	8	1	100ms
M_FREQ(1,16)	8	35	1120Hz
T_SOUND(1,16)	8	1	100ms
M_FREQ(1,17)	8	33	1056Hz
T_SOUND(1,17)	8	1	100ms
M_FREQ(1,18)	8	31	992Hz



T_SOUND(1,18)	8	1	100ms
M_FREQ(1,19)	8	28	896Hz
T_SOUND(1,19)	8	1	100ms
M_FREQ(1,20)	8	24	768Hz
T_SOUND(1,20)	8	1	100ms
M_FREQ(1,21)	8	22	704Hz
T_SOUND(1,21)	8	1	100ms
M_FREQ(1,22)	8	21	672Hz
T_SOUND(1,22)	8	1	100ms
M_FREQ(1,23)	8	18	576Hz
T_SOUND(1,23)	8	1	100ms
M_FREQ(1,24)	8	16	512Hz
T_SOUND(1,24)	8	1	100ms
M_FREQ(1,25)	8	15	480Hz
T_SOUND(1,25)	8	1	100ms
M_FREQ(1,26)	8	14	448Hz
T_SOUND(1,26)	8	1	100ms
M_FREQ(1,27)	8	12	384Hz
T_SOUND(1,27)	8	1	100ms
M_FREQ(1,28)	8	11	352Hz
T_SOUND(1,28)	8	1	100ms
M_FREQ(1,29)	8	10	320Hz
T_SOUND(1,29)	8	1	100ms



M_FREQ(1,30)	8	9	288Hz
T_SOUND(1,30)	8	1	100ms
M_FREQ(1,31)	8	8	256Hz
T_SOUND(1,31)	8	1	100ms
NID_SOUND(2)	8	153	
Q_SOUND(2)	2	0	Stop sound
N_ITER(2)	5	0	no sound segments
Padding bits	7	0000000b	

Message-S11: STM requests stop sound for first sound and one shot play for second sound			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	75	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	552	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	151	
Q_SOUND(1)	2	0	Stop sound
N_ITER(1)	5	0	no sound segments
NID_SOUND(2)	8	153	



Q_SOUND(2)	2	1	One shot play
N_ITER(2)	5	31	31 segments
M_FREQ(2,1)	8	16	512Hz
T_SOUND(2,1)	8	1	100ms
M_FREQ(2,2)	8	8	256Hz
T_SOUND(2,2)	8	1	100ms
M_FREQ(2,3)	8	0	Silence
T_SOUND(2,3)	8	1	100ms
M_FREQ(2,4)	8	16	512Hz
T_SOUND(2,4)	8	1	100ms
M_FREQ(2,5)	8	8	256Hz
T_SOUND(2,5)	8	1	100ms
M_FREQ(2,6)	8	0	Silence
T_SOUND(2,6)	8	1	100ms
M_FREQ(2,7)	8	16	512Hz
T_SOUND(2,7)	8	1	100ms
M_FREQ(2,8)	8	8	256Hz
T_SOUND(2,8)	8	1	100ms
M_FREQ(2,9)	8	0	Silence
T_SOUND(2,9)	8	1	100ms
M_FREQ(2,10)	8	16	512Hz
T_SOUND(2,10)	8	1	100ms
M_FREQ(2,11)	8	8	256Hz



T_SOUND(2,11)	8	1	100ms
M_FREQ(2,12)	8	0	Silence
T_SOUND(2,12)	8	1	100ms
M_FREQ(2,13)	8	16	512Hz
T_SOUND(2,13)	8	1	100ms
M_FREQ(2,14)	8	8	256Hz
T_SOUND(2,14)	8	1	100ms
M_FREQ(2,15)	8	0	Silence
T_SOUND(2,15)	8	1	100ms
M_FREQ(2,16)	8	16	512Hz
T_SOUND(2,16)	8	1	100ms
M_FREQ(2,17)	8	0	Silence
T_SOUND(2,17)	8	1	100ms
M_FREQ(2,18)	8	8	256Hz
T_SOUND(2,18)	8	1	100ms
M_FREQ(2,19)	8	16	512Hz
T_SOUND(2,19)	8	1	100ms
M_FREQ(2,20)	8	0	Silence
T_SOUND(2,20)	8	1	100ms
M_FREQ(2,21)	8	8	256Hz
T_SOUND(2,21)	8	1	100ms
M_FREQ(2,22)	8	16	512Hz
T_SOUND(2,22)	8	1	100ms



M_FREQ(2,23)	8	0	Silence
T_SOUND(2,23)	8	1	100ms
M_FREQ(2,24)	8	8	256Hz
T_SOUND(2,24)	8	1	100ms
M_FREQ(2,25)	8	16	512Hz
T_SOUND(2,25)	8	1	100ms
M_FREQ(2,26)	8	0	Silence
T_SOUND(2,26)	8	1	100ms
M_FREQ(2,27)	8	8	256Hz
T_SOUND(2,27)	8	1	100ms
M_FREQ(2,28)	8	16	512Hz
T_SOUND(2,28)	8	1	100ms
M_FREQ(2,29)	8	0	Silence
T_SOUND(2,29)	8	1	100ms
M_FREQ(2,30)	8	8	256Hz
T_SOUND(2,30)	8	1	100ms
M_FREQ(2,31)	8	16	512Hz
T_SOUND(2,31)	8	1	100ms
Padding bits	7	0000000b	

2.5.20 Test Case 7e.20

TEST CASE HEADER

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Test case identification	DMI Function
	7e1.0.2.(7e2.0.2.1.1.1.1.0).1.(7e2.0.2.1.1.2.1.0).1.(7e2.0.2.1.1.3.0.1.0).1. (7e2.0.2.2.1.1.1.0).1.(7e2.0.2.3.0.1.1.1.0).1.(7e2.0.2.2.1.2.1.0).1. (7e2.0.2.3.0.1.3.0.1.0).1.(7e2.0.2.2.1.1.1.0).1.(7e2.0.2.3.0.1.2.1.0).1. (7e2.0.2.2.1.3.0.1.0).1.(7e2.0.2.3.0.1.1.1.0).2
	Sound test for unified DMI, DMI configuration for other STMs, with 2 sound requests at once and 31 segments in sound requests.: Two sounds with 31 segments of 100ms duration are requested and partly played at the same time. All possible combinations of Q_SOUND are tested. Same test steps and messages as in test case 7e. 19
ERTMS/ETCS on-board requirements tested	SUBSET-035 13.4.1.1, 13.4.1.2, 13.4.1.8, 13.4.5.3, 13.4.5.4
	ERA ERTMS 015560 (DMI Spec) 9.3.6
STM requirements tested	
Packets transmitted via FFFIS STM	STM-15, STM-46
ERTMS/ETCS on-board configuration	For active STM: Unified DMI service: 7a.1.
	DMI configuration 7a.3, 7a.5, 7a.6, 7a.7, 7a.8 or 7a.9 for at least one other STM
Comments and constraints	Starting and end conditions as for test case 7e.1

2.5.21 Test Case 7e.21

TEST CASE HEADER	
Test case identification	DMI Function
	7e1.0.3.(7e3.0.1.1.0.0).1.(7e3.0.1.2.0.0).1.(7e3.0.1.3.0.0.0).1. (7e3.0.1.1.0.0).1.(7e3.0.1.2.0.0).1.(7e3.0.1.3.0.0.0).2



	<p>Sound test for customisable DMI service for configurations with two simple sounds, no DMI configuration for other STMs, with 1 sound request at once.:</p> <p>Each sound is first played once, then played continuously for 10 seconds and then stopped.</p>
ERTMS/ETCS on-board requirements tested	SUBSET-035 13.4.1.1, 13.4.1.2, 13.4.1.7, 13.4.1.8, 13.4.5.2, 13.4.5.3, 13.4.5.4
	ERA ERTMS 015560 (DMI Spec) 9.3.6
STM requirements tested	
Packets transmitted via FFFIS STM	STM-15, STM-46
ERTMS/ETCS on-board configuration	<p>For active STM: customisable DMI service: 7a.3, 7a.5, 7a.6, 7a.7 (one configuration shall be chosen for test).</p> <p>No DMI configuration for any other STM</p>
Comments and constraints	

Starting Conditions	Value	Comments
STM State	DA	
ETCS Mode	SN	
ETCS Level	NTC	
Train State	not relevant	
ETCS Train Data	not relevant	
Active DMI channel Connection	Established	
Other DMI channels Connections	not relevant	
TIU Connection	not relevant	
BIU Connection	not relevant	
JD Connection	not relevant	
TIU Regenerative Brake Command	not relevant	



TIU Magnetic Shoes Brake Command	not relevant	
TIU Eddy Current Brake Command for Emergency Brake	not relevant	
TIU Eddy Current Brake Command for Service Brake	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 Traction Status	not relevant	
TIU Direction Controller Position Status	not relevant	
TIU Cab Status	Cab A or B active	For the test it is not relevant, what cab is active
BIU Emergency Brake Command	not relevant	
BIU Service Brake Command	not relevant	
BIU Emergency Brake Status	not relevant	
BIU Service Brake Status	not relevant	
NTC isolation status	Not isolated for active STM. Not relevant for other STMs	

ERTMS/ETCS on-board Test Case

Step	Description/Comments	Input I/F	Input time	Input Action	Output I/F	Output time limit	Output action
1	STM requests one shot play for sound with identifier 1	PROF	T0	connection of active DMI channel: Message-S1	DMI		Requested sound with identifier 1 (S1_toofast.wav) is played once.
2	STM requests continuous play for sound with identifier 1	PROF	T0+5s	connection of active DMI channel: Message-S2	DMI		Requested sound with identifier 1 (S1_toofast.wav) is played continuously.



3	STM requests stop sound for sound with identifier 1	PROF	T0+15s	connection of active DMI channel: Message-S3	DMI		Sound is stopped.
4	STM requests one shot play for sound with identifier 2	PROF	T0+20s	connection of active DMI channel: Message-S4	DMI		Requested sound with identifier 2 (S2_warning.wav) is played once.
5	STM requests continuous play for sound with identifier 2	PROF	T0+25s	connection of active DMI channel: Message-S5	DMI		Requested sound with identifier 2 (S2_warning.wav) is played continuously.
6	STM requests stop sound for sound with identifier 2	PROF	T0+35s	connection of active DMI channel: Message-S6	DMI		Sound is stopped.

Message-S1: STM requests one shot play for sound with identifier 1			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	11	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	41	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	1	
Q_SOUND(1)	2	1	One shot play
N_ITER(1)	5	0	no sound segments
Padding bits	6	000000b	



Message-S2: STM requests continuous play for sound with identifier 1			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	11	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	41	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	1	
Q_SOUND(1)	2	2	Continuous play
N_ITER(1)	5	0	no sound segments
Padding bits	6	000000b	

Message-S3: STM requests stop sound for sound with identifier 1			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	11	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)

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L_PACKET	13	41	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	1	
Q_SOUND(1)	2	0	Stop sound
N_ITER(1)	5	0	no sound segments
Padding bits	6	000000b	

Message-S4: STM requests one shot play for sound with identifier 2			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	11	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	41	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	2	
Q_SOUND(1)	2	1	One shot play
N_ITER(1)	5	0	no sound segments
Padding bits	6	000000b	

Message-S5: STM requests continuous play for sound with identifier 2
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VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	11	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	41	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	2	
Q_SOUND(1)	2	2	Continuous play
N_ITER(1)	5	0	no sound segments
Padding bits	6	000000b	

Message-S6: STM requests stop sound for sound with identifier 2			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	11	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	41	Packet Length

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N_ITER	5	1	
NID_SOUND(1)	8	2	
Q_SOUND(1)	2	0	Stop sound
N_ITER(1)	5	0	no sound segments
Padding bits	6	000000b	

End Conditions	Value	Comments
STM State	unchanged	
ETCS Mode	unchanged	
ETCS Level	unchanged	
Train State	not relevant	
ETCS Train Data	not relevant	
Active DMI channel Connection	unchanged	
Other DMI channels Connections	not relevant	
TIU Connection	not relevant	
BIU Connection	not relevant	
JD Connection	not relevant	
TIU Regenerative Brake Command	not relevant	
TIU Magnetic Shoes Brake Command	not relevant	
TIU Eddy Current Brake Command for Emergency Brake	not relevant	
TIU Eddy Current Brake Command for Service Brake	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 Traction Status	not relevant	
TIU Direction Controller Position Status	not relevant	
TIU Cab Status	unchanged	
BIU Emergency Brake Command	not relevant	
BIU Service Brake Command	not relevant	
BIU Emergency Brake Status	not relevant	
BIU Service Brake Status	not relevant	
NTC isolation status	unchanged	

2.5.22 Test Case 7e.22

TEST CASE HEADER	
Test case identification	DMI Function
	7e1.0.4.(7e3.0.1.1.0.0).1.(7e3.0.1.2.0.0).1.(7e3.0.1.3.0.0.0).1. (7e3.0.1.1.0.0).1.(7e3.0.1.2.0.0).1.(7e3.0.1.3.0.0.0).2
	Sound test for customisable DMI service for configurations with two simple sounds, DMI configuration for other STMs, with 1 sound request at once.: Each sound is first played once, then played continuously for 10 seconds and then stopped. Same test steps and messages as in test case 7e.21
ERTMS/ETCS on-board requirements tested	SUBSET-035 13.4.1.1, 13.4.1.2, 13.4.1.7, 13.4.1.8, 13.4.5.2, 13.4.5.3, 13.4.5.4
	ERA ERTMS 015560 (DMI Spec) 9.3.6

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STM requirements tested	
Packets transmitted via FFFIS STM	STM-15, STM-46
ERTMS/ETCS on-board configuration	For active STM: customisable DMI service: 7a.3, 7a.5, 7a.6, 7a.7 (one configuration shall be chosen for test). DMI configuration 7a.3, 7a.5, 7a.6, 7a.7, 7a.8 or 7a.9 for at least one other STM
Comments and constraints	Starting and end conditions as for test case 7e.21

2.5.23 Test Case 7e.23

TEST CASE HEADER	
Test case identification	DMI Function
	7e1.0.3.(7e3.0.2.1.0.1.0.0).1.(7e3.0.2.1.0.2.0.0).1.(7e3.0.2.1.0.3.0.0.0).1. (7e3.0.2.2.0.1.0.0).1.(7e3.0.2.3.0.0.1.0.0).1.(7e3.0.2.2.0.2.0.0).1. (7e3.0.2.3.0.0.3.0.0.0).1.(7e3.0.1.2.0.0).1.(7e3.0.2.2.0.3.0.0.0).1. (7e3.0.2.3.0.0.2.0.0).1.(7e3.0.1.3.0.0.0).2
	Sound test for customisable DMI service for configurations with two simple sounds, no DMI configuration for other STMs, with 2 sound requests at once.: Requests for both sounds are made with all possible combinations of Q_SOUND.
ERTMS/ETCS on-board requirements tested	SUBSET-035 13.4.1.1, 13.4.1.2, 13.4.1.7, 13.4.1.8, 13.4.5.2, 13.4.5.3, 13.4.5.4
	ERA ERTMS 015560 (DMI Spec) 9.3.6
STM requirements tested	
Packets transmitted via FFFIS STM	STM-15, STM-46
ERTMS/ETCS on-board configuration	For active STM: customisable DMI service: 7a.3, 7a.5, 7a.6, 7a.7 (one configuration shall be chosen for test).



	No DMI configuration for any other STM
Comments and constraints	Starting and end conditions as for test case 7e.21

ERTMS/ETCS on-board Test Case

Step	Description/Comments	Input I/F	Input time	Input Action	Output I/F	Output time limit	Output action
1	STM requests one shot play for sound with identifier 1 and STM requests one shot play for sound with identifier 2	PROF	T0	connection of active DMI channel: Message-S1	DMI		First requested sound with identifier 1 (S1_toofast.wav) is played once. Second requested sound with identifier 2 (S2_warning.wav) is played once
2	STM requests one shot play for sound with identifier 1 and STM requests continuous play for sound with identifier 2	PROF	T0+5s	connection of active DMI channel: Message-S2	DMI		First requested sound with identifier 1 (S1_toofast.wav) is played once. Second requested sound with identifier 2 (S2_warning.wav) is played continuously
3	STM requests one shot play for sound with identifier 1 and STM requests stop sound for sound with identifier 2	PROF	T0+15s	connection of active DMI channel: Message-S3	DMI		First requested sound with identifier 1 (S1_toofast.wav) is played once. Sound with identifier 2 is stopped.
4	STM requests continuous play for sound with identifier 1 and STM requests one shot play for sound with identifier 2	PROF	T0+20s	connection of active DMI channel: Message-S4	DMI		First requested sound with identifier 1 (S1_toofast.wav) is played continuously. Second requested sound with identifier 2 (S2_warning.wav) is played once
5	STM requests stop sound for sound with identifier 1 and STM requests one shot play for sound with identifier 2	PROF	T0+30s	connection of active DMI channel: Message-S5	DMI		Sound with identifier 1 is stopped. Second requested sound with identifier 2 (S2_warning.wav) is played once



6	STM requests continuous play for sound with identifier 1 and STM requests continuous play for sound with identifier 2	PROF	T0+35s	connection of active DMI channel: Message-S6	DMI		First requested sound with identifier 1 (S1_toofast.wav) is played continuously. Second requested sound with identifier 2 (S2_warning.wav) is played continuously
7	STM requests stop sound for sound with identifier 1 and STM requests stop sound for sound with identifier 2	PROF	T0+45s	connection of active DMI channel: Message-S7	DMI		Sound with identifier 1 is stopped. Sound with identifier 2 is stopped.
8	STM requests continuous play for sound with identifier 2	PROF	T0+50s	connection of active DMI channel: Message-S8	DMI		Sound with identifier 2 (S2_warning.wav) is played continuously
9	STM requests continuous play for sound with identifier 1 and STM requests stop sound for sound with identifier 2	PROF	T0+60s	connection of active DMI channel: Message-S9	DMI		First requested sound with identifier 1 (S1_toofast.wav) is played continuously. Sound with identifier 2 is stopped.
10	STM requests stop sound for sound with identifier 1 and STM requests continuous play for sound with identifier 2	PROF	T0+70s	connection of active DMI channel: Message-S10	DMI		Sound with identifier 1 is stopped. Second requested sound with identifier 2 (S2_warning.wav) is played continuously
11	STM requests stop sound for sound with identifier 2	PROF	T0+80s	connection of active DMI channel: Message-S11	DMI		Sound with identifier 2 is stopped.

Message-S1: STM requests one shot play for sound with id 1 and one shot play for sound with id 2

VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	13	Message Length
NID_PACKET	8	15	State report from STM (STM-15)



L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	56	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	1	
Q_SOUND(1)	2	1	One shot play
N_ITER(1)	5	0	no sound segments
NID_SOUND(2)	8	2	
Q_SOUND(2)	2	1	One shot play
N_ITER(2)	5	0	no sound segments
Padding bits	7	0000000b	

Message-S2: STM requests one shot play for sound with id 1 and continuous play for sound with id 2			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	13	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	56	Packet Length
N_ITER	5	2	

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NID_SOUND(1)	8	1	
Q_SOUND(1)	2	1	One shot play
N_ITER(1)	5	0	no sound segments
NID_SOUND(2)	8	2	
Q_SOUND(2)	2	2	Continuous play
N_ITER(2)	5	0	no sound segments
Padding bits	7	0000000b	

Message-S3: STM requests one shot play for sound with id 1 and stop sound for sound with id 2			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	13	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	56	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	1	
Q_SOUND(1)	2	1	One shot play
N_ITER(1)	5	0	no sound segments
NID_SOUND(2)	8	2	
Q_SOUND(2)	2	0	Stop sound



N_ITER(2)	5	0	no sound segments
Padding bits	7	0000000b	

Message-S4: STM requests continuous play for sound with id 1 and one shot play for sound with id 2			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	13	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	56	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	1	
Q_SOUND(1)	2	2	Continuous play
N_ITER(1)	5	0	no sound segments
NID_SOUND(2)	8	2	
Q_SOUND(2)	2	1	One shot play
N_ITER(2)	5	0	no sound segments
Padding bits	7	0000000b	

Message-S5: STM requests stop sound for sound with id 1 and one shot play for sound with id 2			
VARIABLE	Length	VALUE	COMMENT

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NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	13	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	56	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	1	
Q_SOUND(1)	2	0	Stop sound
N_ITER(1)	5	0	no sound segments
NID_SOUND(2)	8	2	
Q_SOUND(2)	2	1	One shot play
N_ITER(2)	5	0	no sound segments
Padding bits	7	0000000b	

Message-S6: STM requests continuous play for sound with id 1 and continuous play for sound with id 2			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	13	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA

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NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	56	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	1	
Q_SOUND(1)	2	2	Continuous play
N_ITER(1)	5	0	no sound segments
NID_SOUND(2)	8	2	
Q_SOUND(2)	2	2	Continuous play
N_ITER(2)	5	0	no sound segments
Padding bits	7	0000000b	

Message-S7: STM requests stop sound for sound with id 1 and stop sound for sound with id 2

VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	13	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	56	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	1	
Q_SOUND(1)	2	0	Stop sound



N_ITER(1)	5	0	no sound segments
NID_SOUND(2)	8	2	
Q_SOUND(2)	2	0	Stop sound
N_ITER(2)	5	0	no sound segments
Padding bits	7	0000000b	

Message-S8: STM requests continuous play for sound with identifier 2			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	11	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	41	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	2	
Q_SOUND(1)	2	2	Continuous play
N_ITER(1)	5	0	no sound segments
Padding bits	6	000000b	

Message-S9: STM requests continuous play for sound with id 1 and stop sound for sound with id 2			
VARIABLE	Length	VALUE	COMMENT

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NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	13	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	56	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	1	
Q_SOUND(1)	2	2	Continuous play
N_ITER(1)	5	0	no sound segments
NID_SOUND(2)	8	2	
Q_SOUND(2)	2	0	Stop sound
N_ITER(2)	5	0	no sound segments
Padding bits	7	0000000b	

Message-S10: STM requests stop sound for sound with id 1 and continuous play for sound with id 2			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	13	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA

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NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	56	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	1	
Q_SOUND(1)	2	0	Stop sound
N_ITER(1)	5	0	no sound segments
NID_SOUND(2)	8	2	
Q_SOUND(2)	2	2	Continuous play
N_ITER(2)	5	0	no sound segments
Padding bits	7	0000000b	

Message-S11: STM requests stop sound for sound with identifier 2			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	11	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	41	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	2	
Q_SOUND(1)	2	0	Stop sound



N_ITER(1)	5	0	no sound segments
Padding bits	6	000000b	

2.5.24 Test Case 7e.24

TEST CASE HEADER	
Test case identification	DMI Function
	7e1.0.4.(7e3.0.2.1.0.1.0.0).1.(7e3.0.2.1.0.2.0.0).1.(7e3.0.2.1.0.3.0.0.0).1. (7e3.0.2.2.0.1.0.0).1.(7e3.0.2.3.0.0.1.0.0).1.(7e3.0.2.2.0.2.0.0).1. (7e3.0.2.3.0.0.3.0.0.0).1.(7e3.0.1.2.0.0).1.(7e3.0.2.2.0.3.0.0.0).1. (7e3.0.2.3.0.0.2.0.0).1.(7e3.0.1.3.0.0.0).2
	Sound test for customisable DMI service for configurations with two simple sounds, DMI configuration for other STMs, with 2 sound requests at once.: Requests for both sounds are made with all possible combinations of Q_SOUND. Same test steps and messages as in test case 7e.23
ERTMS/ETCS on-board requirements tested	SUBSET-035 13.4.1.1, 13.4.1.2, 13.4.1.7, 13.4.1.8, 13.4.5.2, 13.4.5.3, 13.4.5.4
	ERA ERTMS 015560 (DMI Spec) 9.3.6
STM requirements tested	
Packets transmitted via FFFIS STM	STM-15, STM-46
ERTMS/ETCS on-board configuration	For active STM: customisable DMI service: 7a.3, 7a.5, 7a.6, 7a.7 (one configuration shall be chosen for test). DMI configuration 7a.3, 7a.5, 7a.6, 7a.7, 7a.8 or 7a.9 for at least one other STM
Comments and constraints	Starting and end conditions as for test case 7e.21



2.5.25 Test Case 7e.25

TEST CASE HEADER	
Test case identification	DMI Function
	7e1.0.3.((7e3.0.1.1.0.0).1.(7e3.0.1.2.0.0).1.(7e3.0.1.3.0.0.0).1.)* (7e3.0.1.1.0.0).1.(7e3.0.1.2.0.0).1.(7e3.0.1.3.0.0.0).2
	Sound test for customisable DMI service for configuration 7a.8, no DMI configuration for other STMs, with 1 sound request at once.: Each sound is first played once, then played continuously for 10 seconds and then stopped.
ERTMS/ETCS on-board requirements tested	SUBSET-035 13.4.1.1, 13.4.1.2, 13.4.1.7, 13.4.1.8, 13.4.5.2, 13.4.5.3, 13.4.5.4
	ERA ERTMS 015560 (DMI Spec) 9.3.6
STM requirements tested	
Packets transmitted via FFFIS STM	STM-15, STM-46
ERTMS/ETCS on-board configuration	For active STM: customisable DMI service: 7a.8
	No DMI configuration for any other STM
Comments and constraints	

Starting Conditions	Value	Comments
STM State	DA	
ETCS Mode	SN	
ETCS Level	NTC	
Train State	not relevant	
ETCS Train Data	not relevant	
Active DMI channel Connection	Established	

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Other DMI channels Connections	not relevant	
TIU Connection	not relevant	
BIU Connection	not relevant	
JD Connection	not relevant	
TIU Regenerative Brake Command	not relevant	
TIU Magnetic Shoes Brake Command	not relevant	
TIU Eddy Current Brake Command for Emergency Brake	not relevant	
TIU Eddy Current Brake Command for Service Brake	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 Traction Status	not relevant	
TIU Direction Controller Position Status	not relevant	
TIU Cab Status	Cab A or B active	For the test it is not relevant, what cab is active
BIU Emergency Brake Command	not relevant	
BIU Service Brake Command	not relevant	
BIU Emergency Brake Status	not relevant	
BIU Service Brake Status	not relevant	
NTC isolation status	Not isolated for active STM. Not relevant for other STMs	

ERTMS/ETCS on-board Test Case



Step	Description/Comments	Input I/F	Input time	Input Action	Output I/F	Output time limit	Output action
1	STM requests one shot play for sound with identifier 1	PROF	T0	connection of active DMI channel: Message-S1	DMI		Requested sound with identifier 1 (Antennafailure.wav) is played once.
2	STM requests continuous play for sound with identifier 1	PROF	T0+5s	connection of active DMI channel: Message-S2	DMI		Requested sound with identifier 1 (Antennafailure.wav) is played continuously.
3	STM requests stop sound for sound with identifier 1	PROF	T0+15s	connection of active DMI channel: Message-S3	DMI		Sound is stopped.
4	STM requests one shot play for sound with identifier 2	PROF	T0+20s	connection of active DMI channel: Message-S4	DMI		Requested sound with identifier 2 (Odometerfailure.wav) is played once.
5	STM requests continuous play for sound with identifier 2	PROF	T0+25s	connection of active DMI channel: Message-S5	DMI		Requested sound with identifier 2 (Odometerfailure.wav) is played continuously.
6	STM requests stop sound for sound with identifier 2	PROF	T0+35s	connection of active DMI channel: Message-S6	DMI		Sound is stopped.
7	STM requests one shot play for sound with identifier 3	PROF	T0+40s	connection of active DMI channel: Message-S7	DMI		Requested sound with identifier 3 (Pressuresensorfailure.wav) is played once.
8	STM requests continuous play for sound with identifier 3	PROF	T0+45s	connection of active DMI channel: Message-S8	DMI		Requested sound with identifier 3 (Pressuresensorfailure.wav) is played continuously.
9	STM requests stop sound for sound with identifier 3	PROF	T0+55s	connection of active DMI channel: Message-S9	DMI		Sound is stopped.
10	STM requests one shot play for sound with identifier 4	PROF	T0+60s	connection of active DMI channel: Message-S10	DMI		Requested sound with identifier 4 (SBfailure.wav) is played once.
11	STM requests continuous play for sound with identifier 4	PROF	T0+65s	connection of active DMI channel: Message-S11	DMI		Requested sound with identifier 4 (SBfailure.wav) is played continuously.



12	STM requests stop sound for sound with identifier 4	PROF	T0+75s	connection of active DMI channel: Message-S12	DMI		Sound is stopped.
13	STM requests one shot play for sound with identifier 5	PROF	T0+80s	connection of active DMI channel: Message-S13	DMI		Requested sound with identifier 5 (EBfailure.wav) is played once.
14	STM requests continuous play for sound with identifier 5	PROF	T0+85s	connection of active DMI channel: Message-S14	DMI		Requested sound with identifier 5 (EBfailure.wav) is played continuously.
15	STM requests stop sound for sound with identifier 5	PROF	T0+95s	connection of active DMI channel: Message-S15	DMI		Sound is stopped.

Message-S1: STM requests one shot play for sound with identifier 1			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	11	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	41	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	1	
Q_SOUND(1)	2	1	One shot play
N_ITER(1)	5	0	no sound segments
Padding bits	6	000000b	



Message-S2: STM requests continuous play for sound with identifier 1			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	11	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	41	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	1	
Q_SOUND(1)	2	2	Continuous play
N_ITER(1)	5	0	no sound segments
Padding bits	6	000000b	

Message-S3: STM requests stop sound for sound with identifier 1			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	11	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)

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L_PACKET	13	41	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	1	
Q_SOUND(1)	2	0	Stop sound
N_ITER(1)	5	0	no sound segments
Padding bits	6	000000b	

Message-S4: STM requests one shot play for sound with identifier 2			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	11	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	41	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	2	
Q_SOUND(1)	2	1	One shot play
N_ITER(1)	5	0	no sound segments
Padding bits	6	000000b	

Message-S5: STM requests continuous play for sound with identifier 2
--

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VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	11	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	41	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	2	
Q_SOUND(1)	2	2	Continuous play
N_ITER(1)	5	0	no sound segments
Padding bits	6	000000b	

Message-S6: STM requests stop sound for sound with identifier 2			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	11	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	41	Packet Length

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N_ITER	5	1	
NID_SOUND(1)	8	2	
Q_SOUND(1)	2	0	Stop sound
N_ITER(1)	5	0	no sound segments
Padding bits	6	000000b	

Message-S7: STM requests one shot play for sound with identifier 3			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	11	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	41	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	3	
Q_SOUND(1)	2	1	One shot play
N_ITER(1)	5	0	no sound segments
Padding bits	6	000000b	

Message-S8: STM requests continuous play for sound with identifier 3			
VARIABLE	Length	VALUE	COMMENT

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NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	11	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	41	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	3	
Q_SOUND(1)	2	2	Continuous play
N_ITER(1)	5	0	no sound segments
Padding bits	6	000000b	

Message-S9: STM requests stop sound for sound with identifier 3			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	11	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	41	Packet Length
N_ITER	5	1	



NID_SOUND(1)	8	3	
Q_SOUND(1)	2	0	Stop sound
N_ITER(1)	5	0	no sound segments
Padding bits	6	000000b	

Message-S10: STM requests one shot play for sound with identifier 4			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	11	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	41	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	4	
Q_SOUND(1)	2	1	One shot play
N_ITER(1)	5	0	no sound segments
Padding bits	6	000000b	

Message-S11: STM requests continuous play for sound with identifier 4			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM

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L_MESSAGE	8	11	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	41	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	4	
Q_SOUND(1)	2	2	Continuous play
N_ITER(1)	5	0	no sound segments
Padding bits	6	000000b	

Message-S12: STM requests stop sound for sound with identifier 4			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	11	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	41	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	4	



Q_SOUND(1)	2	0	Stop sound
N_ITER(1)	5	0	no sound segments
Padding bits	6	000000b	

Message-S13: STM requests one shot play for sound with identifier 5			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	11	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	41	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	5	
Q_SOUND(1)	2	1	One shot play
N_ITER(1)	5	0	no sound segments
Padding bits	6	000000b	

Message-S14: STM requests continuous play for sound with identifier 5			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	11	Message Length

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NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	41	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	5	
Q_SOUND(1)	2	2	Continuous play
N_ITER(1)	5	0	no sound segments
Padding bits	6	000000b	

Message-S15: STM requests stop sound for sound with identifier 5			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	11	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	41	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	5	
Q_SOUND(1)	2	0	Stop sound



N_ITER(1)	5	0	no sound segments
Padding bits	6	000000b	

End Conditions	Value	Comments
STM State	unchanged	
ETCS Mode	unchanged	
ETCS Level	unchanged	
Train State	not relevant	
ETCS Train Data	not relevant	
Active DMI channel Connection	unchanged	
Other DMI channels Connections	not relevant	
TIU Connection	not relevant	
BIU Connection	not relevant	
JD Connection	not relevant	
TIU Regenerative Brake Command	not relevant	
TIU Magnetic Shoes Brake Command	not relevant	
TIU Eddy Current Brake Command for Emergency Brake	not relevant	
TIU Eddy Current Brake Command for Service Brake	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 Traction Status	not relevant	
TIU Direction Controller Position Status	not relevant	
TIU Cab Status	unchanged	
BIU Emergency Brake Command	not relevant	
BIU Service Brake Command	not relevant	
BIU Emergency Brake Status	not relevant	
BIU Service Brake Status	not relevant	
NTC isolation status	unchanged	

2.5.26 Test Case 7e.26

TEST CASE HEADER	
Test case identification	DMI Function
	7e1.0.4.((7e3.0.1.1.0.0).1.(7e3.0.1.2.0.0).1.(7e3.0.1.3.0.0.0).1.)* (7e3.0.1.1.0.0).1.(7e3.0.1.2.0.0).1.(7e3.0.1.3.0.0.0).2
	Sound test for customisable DMI service for configuration 7a.8, DMI configuration for other STMs, with 1 sound request at once.: Each sound is first played once, then played continuously for 10 seconds and then stopped. Same test steps and messages as in test case 7e.25
ERTMS/ETCS on-board requirements tested	SUBSET-035 13.4.1.1, 13.4.1.2, 13.4.1.7, 13.4.1.8, 13.4.5.2, 13.4.5.3, 13.4.5.4
	ERA ERTMS 015560 (DMI Spec) 9.3.6
STM requirements tested	
Packets transmitted via FFFIS STM	STM-15, STM-46
ERTMS/ETCS on-board	For active STM: customisable DMI service: 7a.8

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configuration	DMI configuration 7a.3, 7a.5, 7a.6, 7a.7, 7a.8 or 7a.9 for at least one other STM
Comments and constraints	Starting and end conditions as for test case 7e.25

2.5.27 Test Case 7e.27

TEST CASE HEADER	
Test case identification	DMI Function
	<p>7e1.0.3.(7e3.0.2.1.0.1.0.0).1.(7e3.0.2.1.0.2.0.0).1.(7e3.0.2.1.0.3.0.0.0).1. (7e3.0.2.2.0.1.0.0).1.(7e3.0.2.3.0.0.1.0.0).1.(7e3.0.2.2.0.2.0.0).1. (7e3.0.2.3.0.0.3.0.0.0).1.(7e3.0.2.2.0.1.0.0).1.(7e3.0.2.3.0.0.2.0.0).1. (7e3.0.2.2.0.3.0.0.0).1.(7e3.0.2.3.0.0.1.0.0).1. (7e3.0.2.1.0.1.0.0).1.(7e3.0.2.1.0.2.0.0).1.(7e3.0.2.1.0.3.0.0.0).1. (7e3.0.2.2.0.1.0.0).1.(7e3.0.2.3.0.0.1.0.0).1.(7e3.0.2.2.0.2.0.0).1. (7e3.0.2.3.0.0.3.0.0.0).1.(7e3.0.2.2.0.1.0.0).1.(7e3.0.2.3.0.0.2.0.0).1. (7e3.0.2.2.0.3.0.0.0).1.(7e3.0.2.3.0.0.1.0.0).2</p>
	<p>Sound test for customisable DMI service for configuration 7a.8, no DMI configuration for other STMs, with 2 sound requests at once.: Requests for two sounds are made with all possible combinations of Q_SOUND and using all sounds.</p>
ERTMS/ETCS on-board requirements tested	SUBSET-035 13.4.1.1, 13.4.1.2, 13.4.1.7, 13.4.1.8, 13.4.5.2, 13.4.5.3, 13.4.5.4
	ERA ERTMS 015560 (DMI Spec) 9.3.6
STM requirements tested	
Packets transmitted via FFFIS STM	STM-15, STM-46
ERTMS/ETCS on-board configuration	For active STM: customisable DMI service: 7a.8



	No DMI configuration for any other STM
Comments and constraints	Starting and end conditions as for test case 7e.25

ERTMS/ETCS on-board Test Case

Step	Description/Comments	Input I/F	Input time	Input Action	Output I/F	Output time limit	Output action
1	STM requests one shot play for sound with identifier 1 and STM requests one shot play for sound with identifier 2	PROF	T0	connection of active DMI channel: Message-S1	DMI		First requested sound with identifier 1 (Antennafailure.wav) is played once. Second requested sound with identifier 2 (Odometerfailure.wav) is played once
2	STM requests one shot play for sound with identifier 1 and STM requests continuous play for sound with identifier 2	PROF	T0+5s	connection of active DMI channel: Message-S2	DMI		First requested sound with identifier 1 (Antennafailure.wav) is played once. Second requested sound with identifier 2 (Odometerfailure.wav) is played continuously
3	STM requests one shot play for sound with identifier 1 and STM requests stop sound for sound with identifier 2	PROF	T0+15s	connection of active DMI channel: Message-S3	DMI		First requested sound with identifier 1 (Antennafailure.wav) is played once. Sound with identifier 2 is stopped.
4	STM requests continuous play for sound with identifier 1 and STM requests one shot play for sound with identifier 2	PROF	T0+20s	connection of active DMI channel: Message-S4	DMI		First requested sound with identifier 1 (Antennafailure.wav) is played continuously. Second requested sound with identifier 2 (Odometerfailure.wav) is played once
5	STM requests stop sound for sound with identifier 1	PROF	T0+30s	connection of active DMI channel: Message-S5	DMI		Sound with identifier 1 is stopped. Second requested sound with



	and STM requests one shot play for sound with identifier 2						identifier 2 (Odometerfailure.wav) is played once
6	STM requests continuous play for sound with identifier 1 and STM requests continuous play for sound with identifier 2	PROF	T0+35s	connection of active DMI channel: Message-S6	DMI		First requested sound with identifier 1 (Antennafailure.wav) is played continuously. Second requested sound with identifier 2 (Odometerfailure.wav) is played continuously
7	STM requests stop sound for sound with identifier 1 and STM requests stop sound for sound with identifier 2	PROF	T0+45s	connection of active DMI channel: Message-S7	DMI		Sound with identifier 1 is stopped. Sound with identifier 2 is stopped.
8	STM requests continuous play for sound with identifier 1 and STM requests one shot play for sound with identifier 3	PROF	T0+50s	connection of active DMI channel: Message-S8	DMI		First requested sound with identifier 1 (Antennafailure.wav) is played continuously. Second requested sound with identifier 3 (Pressuresensorfailure.wav) is played once
9	STM requests stop sound for sound with identifier 1 and STM requests continuous play for sound with identifier 3	PROF	T0+60s	connection of active DMI channel: Message-S9	DMI		Sound with identifier 1 is stopped. Second requested sound with identifier 3 (Pressuresensorfailure.wav) is played continuously
10	STM requests continuous play for sound with identifier 1 and STM requests stop sound for sound with identifier 3	PROF	T0+70s	connection of active DMI channel: Message-S10	DMI		First requested sound with identifier 1 (Antennafailure.wav) is played continuously. Sound with identifier 3 is stopped.
11	STM requests stop sound for sound with identifier 1	PROF	T0+80s	connection of active DMI channel: Message-S11	DMI		Sound with identifier 1 is stopped. Second requested sound with

	and STM requests one shot play for sound with identifier 3						identifier 3 (Pressuresensorfailure.wav) is played once
12	STM requests one shot play for sound with identifier 3 and STM requests one shot play for sound with identifier 4	PROF	T0+85s	connection of active DMI channel: Message-S12	DMI		First requested sound with identifier 3 (Pressuresensorfailure.wav) is played once. Second requested sound with identifier 4 (SBfailure.wav) is played once
13	STM requests one shot play for sound with identifier 3 and STM requests continuous play for sound with identifier 4	PROF	T0+90s	connection of active DMI channel: Message-S13	DMI		First requested sound with identifier 3 (Pressuresensorfailure.wav) is played once. Second requested sound with identifier 4 (SBfailure.wav) is played continuously
14	STM requests one shot play for sound with identifier 3 and STM requests stop sound for sound with identifier 4	PROF	T0+100s	connection of active DMI channel: Message-S14	DMI		First requested sound with identifier 3 (Pressuresensorfailure.wav) is played once. Sound with identifier 4 is stopped.
15	STM requests continuous play for sound with identifier 3 and STM requests one shot play for sound with identifier 4	PROF	T0+105s	connection of active DMI channel: Message-S15	DMI		First requested sound with identifier 3 (Pressuresensorfailure.wav) is played continuously. Second requested sound with identifier 4 (SBfailure.wav) is played once
16	STM requests stop sound for sound with identifier 3 and STM requests one shot play for sound with identifier 4	PROF	T0+115s	connection of active DMI channel: Message-S16	DMI		Sound with identifier 3 is stopped. Second requested sound with identifier 4 (SBfailure.wav) is played once
17	STM requests continuous play for sound with identifier 3	PROF	T0+120s	connection of active DMI channel: Message-S17	DMI		First requested sound with identifier 3 (Pressuresensorfailure.wav) is



	and STM requests continuous play for sound with identifier 4						played continuously. Second requested sound with identifier 4 (SBfailure.wav) is played continuously
18	STM requests stop sound for sound with identifier 3 and STM requests stop sound for sound with identifier 4	PROF	T0+130s	connection of active DMI channel: Message-S18	DMI		Sound with identifier 3 is stopped. Sound with identifier 4 is stopped.
19	STM requests continuous play for sound with identifier 3 and STM requests one shot play for sound with identifier 5	PROF	T0+135s	connection of active DMI channel: Message-S19	DMI		First requested sound with identifier 3 (Pressuresensorfailure.wav) is played continuously. Second requested sound with identifier 5 (EBfailure.wav) is played once
20	STM requests stop sound for sound with identifier 3 and STM requests continuous play for sound with identifier 5	PROF	T0+145s	connection of active DMI channel: Message-S20	DMI		Sound with identifier 3 is stopped. Second requested sound with identifier 5 (EBfailure.wav) is played continuously
21	STM requests continuous play for sound with identifier 3 and STM requests stop sound for sound with identifier 5	PROF	T0+155s	connection of active DMI channel: Message-S21	DMI		First requested sound with identifier 3 (Pressuresensorfailure.wav) is played continuously. Sound with identifier 5 is stopped.
22	STM requests stop sound for sound with identifier 3 and STM requests one shot play for sound with identifier 5	PROF	T0+165s	connection of active DMI channel: Message-S22	DMI		Sound with identifier 3 is stopped. Second requested sound with identifier 5 (EBfailure.wav) is played once

Message-S1: STM requests one shot play for sound with id 1 and one shot play for sound with id 2

VARIABLE	Length	VALUE	COMMENT
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NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	13	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	56	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	1	
Q_SOUND(1)	2	1	One shot play
N_ITER(1)	5	0	no sound segments
NID_SOUND(2)	8	2	
Q_SOUND(2)	2	1	One shot play
N_ITER(2)	5	0	no sound segments
Padding bits	7	0000000b	

Message-S2: STM requests one shot play for sound with id 1 and continuous play for sound with id 2			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	13	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA

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NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	56	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	1	
Q_SOUND(1)	2	1	One shot play
N_ITER(1)	5	0	no sound segments
NID_SOUND(2)	8	2	
Q_SOUND(2)	2	2	Continuous play
N_ITER(2)	5	0	no sound segments
Padding bits	7	0000000b	

Message-S3: STM requests one shot play for sound with id 1 and stop sound for sound with id 2			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	13	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	56	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	1	
Q_SOUND(1)	2	1	One shot play



N_ITER(1)	5	0	no sound segments
NID_SOUND(2)	8	2	
Q_SOUND(2)	2	0	Stop sound
N_ITER(2)	5	0	no sound segments
Padding bits	7	0000000b	

Message-S4: STM requests continuous play for sound with id 1 and one shot play for sound with id 2			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	13	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	56	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	1	
Q_SOUND(1)	2	2	Continuous play
N_ITER(1)	5	0	no sound segments
NID_SOUND(2)	8	2	
Q_SOUND(2)	2	1	One shot play
N_ITER(2)	5	0	no sound segments
Padding bits	7	0000000b	



Message-S5: STM requests stop sound for sound with id 1 and one shot play for sound with id 2

VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	13	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	56	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	1	
Q_SOUND(1)	2	0	Stop sound
N_ITER(1)	5	0	no sound segments
NID_SOUND(2)	8	2	
Q_SOUND(2)	2	1	One shot play
N_ITER(2)	5	0	no sound segments
Padding bits	7	0000000b	

Message-S6: STM requests continuous play for sound with id 1 and continuous play for sound with id 2

VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	13	Message Length

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NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	56	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	1	
Q_SOUND(1)	2	2	Continuous play
N_ITER(1)	5	0	no sound segments
NID_SOUND(2)	8	2	
Q_SOUND(2)	2	2	Continuous play
N_ITER(2)	5	0	no sound segments
Padding bits	7	0000000b	

Message-S7: STM requests stop sound for sound with id 1 and stop sound for sound with id 2			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	13	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	56	Packet Length



N_ITER	5	2	
NID_SOUND(1)	8	1	
Q_SOUND(1)	2	0	Stop sound
N_ITER(1)	5	0	no sound segments
NID_SOUND(2)	8	2	
Q_SOUND(2)	2	0	Stop sound
N_ITER(2)	5	0	no sound segments
Padding bits	7	0000000b	

Message-S8: STM requests continuous play for sound with id 1 and one shot play for sound with id 3			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	13	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	56	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	1	
Q_SOUND(1)	2	2	Continuous play
N_ITER(1)	5	0	no sound segments
NID_SOUND(2)	8	3	



Q_SOUND(2)	2	1	One shot play
N_ITER(2)	5	0	no sound segments
Padding bits	7	0000000b	

Message-S9: STM requests stop sound for sound with id 1 and continuous play for sound with id 3			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	13	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	56	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	1	
Q_SOUND(1)	2	0	Stop sound
N_ITER(1)	5	0	no sound segments
NID_SOUND(2)	8	3	
Q_SOUND(2)	2	2	Continuous play
N_ITER(2)	5	0	no sound segments
Padding bits	7	0000000b	

Message-S10: STM requests continuous play for sound with id 1 and stop sound for sound with id 3
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VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	13	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	56	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	1	
Q_SOUND(1)	2	2	Continuous play
N_ITER(1)	5	0	no sound segments
NID_SOUND(2)	8	3	
Q_SOUND(2)	2	0	Stop sound
N_ITER(2)	5	0	no sound segments
Padding bits	7	0000000b	

Message-S11: STM requests stop sound for sound with id 1 and one shot play for sound with id 3			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	13	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length



NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	56	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	1	
Q_SOUND(1)	2	0	Stop sound
N_ITER(1)	5	0	no sound segments
NID_SOUND(2)	8	3	
Q_SOUND(2)	2	1	One shot play
N_ITER(2)	5	0	no sound segments
Padding bits	7	0000000b	

Message-S12: STM requests one shot play for sound with id 3 and one shot play for sound with id 4			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	13	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	56	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	3	



Q_SOUND(1)	2	1	One shot play
N_ITER(1)	5	0	no sound segments
NID_SOUND(2)	8	4	
Q_SOUND(2)	2	1	One shot play
N_ITER(2)	5	0	no sound segments
Padding bits	7	0000000b	

Message-S13: STM requests one shot play for sound with id 3 and continuous play for sound with id 4			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	13	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	56	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	3	
Q_SOUND(1)	2	1	One shot play
N_ITER(1)	5	0	no sound segments
NID_SOUND(2)	8	4	
Q_SOUND(2)	2	2	Continuous play
N_ITER(2)	5	0	no sound segments



Padding bits	7	0000000b	
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Message-S14: STM requests one shot play for sound with id 3 and stop sound for sound with id 4			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	13	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	56	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	3	
Q_SOUND(1)	2	1	One shot play
N_ITER(1)	5	0	no sound segments
NID_SOUND(2)	8	4	
Q_SOUND(2)	2	0	Stop sound
N_ITER(2)	5	0	no sound segments
Padding bits	7	0000000b	

Message-S15: STM requests continuous play for sound with id 3 and one shot play for sound with id 4			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM

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L_MESSAGE	8	13	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	56	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	3	
Q_SOUND(1)	2	2	Continuous play
N_ITER(1)	5	0	no sound segments
NID_SOUND(2)	8	4	
Q_SOUND(2)	2	1	One shot play
N_ITER(2)	5	0	no sound segments
Padding bits	7	0000000b	

Message-S16: STM requests stop sound for sound with id 3 and one shot play for sound with id 4			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	13	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)

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L_PACKET	13	56	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	3	
Q_SOUND(1)	2	0	Stop sound
N_ITER(1)	5	0	no sound segments
NID_SOUND(2)	8	4	
Q_SOUND(2)	2	1	One shot play
N_ITER(2)	5	0	no sound segments
Padding bits	7	0000000b	

Message-S17: STM requests continuous play for sound with id 3 and continuous play for sound with id 4			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	13	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	56	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	3	
Q_SOUND(1)	2	2	Continuous play
N_ITER(1)	5	0	no sound segments

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NID_SOUND(2)	8	4	
Q_SOUND(2)	2	2	Continuous play
N_ITER(2)	5	0	no sound segments
Padding bits	7	0000000b	

Message-S18: STM requests stop sound for sound with id 3 and stop sound for sound with id 4			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	13	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	56	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	3	
Q_SOUND(1)	2	0	Stop sound
N_ITER(1)	5	0	no sound segments
NID_SOUND(2)	8	4	
Q_SOUND(2)	2	0	Stop sound
N_ITER(2)	5	0	no sound segments
Padding bits	7	0000000b	



Message-S19: STM requests continuous play for sound with id 3 and one shot play for sound with id 5

VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	13	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	56	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	3	
Q_SOUND(1)	2	2	Continuous play
N_ITER(1)	5	0	no sound segments
NID_SOUND(2)	8	5	
Q_SOUND(2)	2	1	One shot play
N_ITER(2)	5	0	no sound segments
Padding bits	7	0000000b	

Message-S20: STM requests stop sound for sound with id 3 and continuous play for sound with id 5

VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	13	Message Length
NID_PACKET	8	15	State report from STM (STM-15)



L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	56	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	3	
Q_SOUND(1)	2	0	Stop sound
N_ITER(1)	5	0	no sound segments
NID_SOUND(2)	8	5	
Q_SOUND(2)	2	2	Continuous play
N_ITER(2)	5	0	no sound segments
Padding bits	7	0000000b	

Message-S21: STM requests continuous play for sound with id 3 and stop sound for sound with id 5			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	13	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	56	Packet Length
N_ITER	5	2	

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NID_SOUND(1)	8	3	
Q_SOUND(1)	2	2	Continuous play
N_ITER(1)	5	0	no sound segments
NID_SOUND(2)	8	5	
Q_SOUND(2)	2	0	Stop sound
N_ITER(2)	5	0	no sound segments
Padding bits	7	0000000b	

Message-S22: STM requests stop sound for sound with id 3 and one shot play for sound with id 5			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	13	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	56	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	3	
Q_SOUND(1)	2	0	Stop sound
N_ITER(1)	5	0	no sound segments
NID_SOUND(2)	8	5	
Q_SOUND(2)	2	1	One shot play



N_ITER(2)	5	0	no sound segments
Padding bits	7	0000000b	

2.5.28 Test Case 7e.28

TEST CASE HEADER	
Test case identification	DMI Function
	<p>7e1.0.4.(7e3.0.2.1.0.1.0.0).1.(7e3.0.2.1.0.2.0.0).1.(7e3.0.2.1.0.3.0.0.0).1. (7e3.0.2.2.0.1.0.0).1.(7e3.0.2.3.0.0.1.0.0).1.(7e3.0.2.2.0.2.0.0).1. (7e3.0.2.3.0.0.3.0.0.0).1.(7e3.0.2.2.0.1.0.0).1.(7e3.0.2.3.0.0.2.0.0).1. (7e3.0.2.2.0.3.0.0.0).1.(7e3.0.2.3.0.0.1.0.0).1. (7e3.0.2.1.0.1.0.0).1.(7e3.0.2.1.0.2.0.0).1.(7e3.0.2.1.0.3.0.0.0).1. (7e3.0.2.2.0.1.0.0).1.(7e3.0.2.3.0.0.1.0.0).1.(7e3.0.2.2.0.2.0.0).1. (7e3.0.2.3.0.0.3.0.0.0).1.(7e3.0.2.2.0.1.0.0).1.(7e3.0.2.3.0.0.2.0.0).1. (7e3.0.2.2.0.3.0.0.0).1.(7e3.0.2.3.0.0.1.0.0).2</p> <p>Sound test for customisable DMI service for configuration 7a.8, DMI configuration for other STMs, with 2 sound requests at once.: Requests for two sounds are made with all possible combinations of Q_SOUND and using all sounds. Same test steps and messages as in test case 7e.27</p>
ERTMS/ETCS on-board requirements tested	SUBSET-035 13.4.1.1, 13.4.1.2, 13.4.1.7, 13.4.1.8, 13.4.5.2, 13.4.5.3, 13.4.5.4
	ERA ERTMS 015560 (DMI Spec) 9.3.6
STM requirements tested	
Packets transmitted via FFFIS STM	STM-15, STM-46



ERTMS/ETCS on-board configuration	For active STM: customisable DMI service: 7a.8 DMI configuration 7a.3, 7a.5, 7a.6, 7a.7, 7a.8 or 7a.9 for at least one other STM
Comments and constraints	Starting and end conditions as for test case 7e.25

2.5.29 Test Case 7e.29

TEST CASE HEADER	
Test case identification	DMI Function
	7e1.0.3.(((7e3.0.1.1.0.0).1.)* (7e3.0.1.1.0.0).1.(7e3.0.1.2.0.0).1.(7e3.0.1.3.0.0.0).1.)* (7e3.0.1.1.0.0).2
	Sound test for customisable DMI service for configuration 7a.9, no DMI configuration for other STMs, with 1 sound request at once.:
	Each sound is played once, selected sounds are also played continuously for 10 seconds and then stopped.
ERTMS/ETCS on-board requirements tested	SUBSET-035 13.4.1.1, 13.4.1.2, 13.4.1.7, 13.4.1.8, 13.4.5.2, 13.4.5.3, 13.4.5.4
	ERA ERTMS 015560 (DMI Spec) 9.3.6
STM requirements tested	
Packets transmitted via FFFIS STM	STM-15, STM-46
ERTMS/ETCS on-board configuration	For active STM: customisable DMI service: 7a.9 No DMI configuration for any other STM
Comments and constraints	

Starting Conditions	Value	Comments
STM State	DA	
ETCS Mode	SN	



ETCS Level	NTC	
Train State	not relevant	
ETCS Train Data	not relevant	
Active DMI channel Connection	Established	
Other DMI channels Connections	not relevant	
TIU Connection	not relevant	
BIU Connection	not relevant	
JD Connection	not relevant	
TIU Regenerative Brake Command	not relevant	
TIU Magnetic Shoes Brake Command	not relevant	
TIU Eddy Current Brake Command for Emergency Brake	not relevant	
TIU Eddy Current Brake Command for Service Brake	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 Traction Status	not relevant	
TIU Direction Controller Position Status	not relevant	
TIU Cab Status	Cab A or B active	For the test it is not relevant, what cab is active
BIU Emergency Brake Command	not relevant	
BIU Service Brake Command	not relevant	
BIU Emergency Brake Status	not relevant	
BIU Service Brake Status	not relevant	



NTC isolation status	Not isolated for active STM. Not relevant for other STMs	
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ERTMS/ETCS on-board Test Case

Step	Description/Comments	Input I/F	Input time	Input Action	Output I/F	Output time limit	Output action
1	STM requests one shot play for sound with identifier 1	PROF	T0	connection of active DMI channel: Message-S1-1	DMI		Requested sound with identifier 1 (S1_toofast.wav) is played once.
2	STM requests one shot play for sound with identifier 2	PROF	T0+5s	connection of active DMI channel: Message-S2-1	DMI		Requested sound with identifier 2 (S2_warning.wav) is played once.
3	STM requests one shot play for sound with identifier 3	PROF	T0+10s	connection of active DMI channel: Message-S3-1	DMI		Requested sound with identifier 3 (Antennafailure.wav) is played once.
4	STM requests one shot play for sound with identifier 4	PROF	T0+15s	connection of active DMI channel: Message-S4-1	DMI		Requested sound with identifier 4 (Odometerfailure.wav) is played once.
5	STM requests one shot play for sound with identifier 5	PROF	T0+20s	connection of active DMI channel: Message-S5-1	DMI		Requested sound with identifier 5 (Pressuresensorfailure.wav) is played once.
6	STM requests one shot play for sound with identifier 6	PROF	T0+25s	connection of active DMI channel: Message-S6-1	DMI		Requested sound with identifier 6 (SBfailure.wav) is played once.
7	STM requests one shot play for sound with identifier 7	PROF	T0+30s	connection of active DMI channel: Message-S7-1	DMI		Requested sound with identifier 7 (EBfailure.wav) is played once.
8	STM requests one shot play for sound with identifier 8	PROF	T0+35s	connection of active DMI channel: Message-S8-1	DMI		Requested sound with identifier 8 (Ringing.wav) is played once.
9	STM requests continuous play for sound with identifier 8	PROF	T0+40s	connection of active DMI channel: Message-S8-2	DMI		Requested sound with identifier 8 (Ringing.wav) is played continuously.
10	STM requests stop sound for sound with identifier 8	PROF	T0+50s	connection of active DMI channel: Message-S8-3	DMI		Sound is stopped.

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11	STM requests one shot play for sound with identifier 9	PROF	T0+55s	connection of active DMI channel: Message-S9-1	DMI		Requested sound with identifier 9 (Single1.wav) is played once.
12	STM requests one shot play for sound with identifier 10	PROF	T0+60s	connection of active DMI channel: Message-S10-1	DMI		Requested sound with identifier 10 (Single2.wav) is played once.
13	STM requests one shot play for sound with identifier 11	PROF	T0+65s	connection of active DMI channel: Message-S11-1	DMI		Requested sound with identifier 11 (Single3.wav) is played once.
14	STM requests one shot play for sound with identifier 12	PROF	T0+70s	connection of active DMI channel: Message-S12-1	DMI		Requested sound with identifier 12 (Single4.wav) is played once.
15	STM requests one shot play for sound with identifier 13	PROF	T0+75s	connection of active DMI channel: Message-S13-1	DMI		Requested sound with identifier 13 (Single5.wav) is played once.
16	STM requests one shot play for sound with identifier 14	PROF	T0+80s	connection of active DMI channel: Message-S14-1	DMI		Requested sound with identifier 14 (Single6.wav) is played once.
17	STM requests continuous play for sound with identifier 14	PROF	T0+85s	connection of active DMI channel: Message-S14-2	DMI		Requested sound with identifier 14 (Single6.wav) is played continuously.
18	STM requests stop sound for sound with identifier 14	PROF	T0+95s	connection of active DMI channel: Message-S14-3	DMI		Sound is stopped.
19	STM requests one shot play for sound with identifier 15	PROF	T0+100s	connection of active DMI channel: Message-S15-1	DMI		Requested sound with identifier 15 (Single7.wav) is played once.
20	STM requests one shot play for sound with identifier 16	PROF	T0+105s	connection of active DMI channel: Message-S16-1	DMI		Requested sound with identifier 16 (Single8.wav) is played once.
21	STM requests one shot play for sound with identifier 17	PROF	T0+110s	connection of active DMI channel: Message-S17-1	DMI		Requested sound with identifier 17 (Double1.wav) is played once.
22	STM requests one shot play for sound with identifier 18	PROF	T0+115s	connection of active DMI channel: Message-S18-1	DMI		Requested sound with identifier 18 (Double2.wav) is played once.
23	STM requests one shot play for sound with identifier 19	PROF	T0+120s	connection of active DMI channel: Message-S19-1	DMI		Requested sound with identifier 19 (Double3.wav) is played once.
24	STM requests one shot play for sound with identifier 20	PROF	T0+125s	connection of active DMI channel: Message-S20-1	DMI		Requested sound with identifier 20 (Double4.wav) is played once.



25	STM requests one shot play for sound with identifier 21	PROF	T0+130s	connection of active DMI channel: Message-S21-1	DMI		Requested sound with identifier 21 (Double5.wav) is played once.
26	STM requests one shot play for sound with identifier 22	PROF	T0+135s	connection of active DMI channel: Message-S22-1	DMI		Requested sound with identifier 22 (Double6.wav) is played once.
27	STM requests continuous play for sound with identifier 22	PROF	T0+140s	connection of active DMI channel: Message-S22-2	DMI		Requested sound with identifier 22 (Double6.wav) is played continuously.
28	STM requests stop sound for sound with identifier 22	PROF	T0+150s	connection of active DMI channel: Message-S22-3	DMI		Sound is stopped.
29	STM requests one shot play for sound with identifier 23	PROF	T0+155s	connection of active DMI channel: Message-S23-1	DMI		Requested sound with identifier 23 (Double7.wav) is played once.
30	STM requests one shot play for sound with identifier 24	PROF	T0+160s	connection of active DMI channel: Message-S24-1	DMI		Requested sound with identifier 24 (Double8.wav) is played once.
31	STM requests one shot play for sound with identifier 25	PROF	T0+165s	connection of active DMI channel: Message-S25-1	DMI		Requested sound with identifier 25 (Triple1.wav) is played once.
32	STM requests one shot play for sound with identifier 26	PROF	T0+170s	connection of active DMI channel: Message-S26-1	DMI		Requested sound with identifier 26 (Triple2.wav) is played once.
33	STM requests one shot play for sound with identifier 27	PROF	T0+175s	connection of active DMI channel: Message-S27-1	DMI		Requested sound with identifier 27 (Triple3.wav) is played once.
34	STM requests one shot play for sound with identifier 28	PROF	T0+180s	connection of active DMI channel: Message-S28-1	DMI		Requested sound with identifier 28 (Triple4.wav) is played once.
35	STM requests one shot play for sound with identifier 29	PROF	T0+185s	connection of active DMI channel: Message-S29-1	DMI		Requested sound with identifier 29 (Triple5.wav) is played once.
36	STM requests one shot play for sound with identifier 30	PROF	T0+190s	connection of active DMI channel: Message-S30-1	DMI		Requested sound with identifier 30 (Triple6.wav) is played once.
37	STM requests continuous play for sound with identifier 30	PROF	T0+195s	connection of active DMI channel: Message-S30-2	DMI		Requested sound with identifier 30 (Triple6.wav) is played continuously.
38	STM requests stop sound for sound	PROF	T0+205s	connection of active DMI channel:	DMI		Sound is stopped.



	with identifier 30			Message-S30-3			
39	STM requests one shot play for sound with identifier 31	PROF	T0+210s	connection of active DMI channel: Message-S31-1	DMI		Requested sound with identifier 31 (Triple7.wav) is played once.
40	STM requests one shot play for sound with identifier 32	PROF	T0+215s	connection of active DMI channel: Message-S32-1	DMI		Requested sound with identifier 32 (Triple8.wav) is played once.
41	STM requests one shot play for sound with identifier 33	PROF	T0+220s	connection of active DMI channel: Message-S33-1	DMI		Requested sound with identifier 33 (Greatbritain.wav) is played once.
42	STM requests one shot play for sound with identifier 34	PROF	T0+286s	connection of active DMI channel: Message-S34-1	DMI		Requested sound with identifier 34 (France.wav) is played once.
43	STM requests one shot play for sound with identifier 35	PROF	T0+368s	connection of active DMI channel: Message-S35-1	DMI		Requested sound with identifier 35 (Germany.wav) is played once.
44	STM requests continuous play for sound with identifier 35	PROF	T0+445s	connection of active DMI channel: Message-S35-2	DMI		Requested sound with identifier 35 (Germany.wav) is played continuously.
45	STM requests stop sound for sound with identifier 35	PROF	T0+455s	connection of active DMI channel: Message-S35-3	DMI		Sound is stopped.
46	STM requests one shot play for sound with identifier 36	PROF	T0+460s	connection of active DMI channel: Message-S36-1	DMI		Requested sound with identifier 36 (Belgium.wav) is played once.
47	STM requests one shot play for sound with identifier 37	PROF	T0+526s	connection of active DMI channel: Message-S37-1	DMI		Requested sound with identifier 37 (Sweden.wav) is played once.
48	STM requests one shot play for sound with identifier 38	PROF	T0+616s	connection of active DMI channel: Message-S38-1	DMI		Requested sound with identifier 38 (Italy.wav) is played once.
49	STM requests one shot play for sound with identifier 39	PROF	T0+717s	connection of active DMI channel: Message-S39-1	DMI		Requested sound with identifier 39 (Spain.wav) is played once.
50	STM requests one shot play for sound with identifier 40	PROF	T0+782s	connection of active DMI channel: Message-S40-1	DMI		Requested sound with identifier 40 (CzechRep.wav) is played once.
51	STM requests one shot play for sound with identifier 41	PROF	T0+849s	connection of active DMI channel: Message-S41-1	DMI		Requested sound with identifier 41 (Message41.wav) is played once.
52	STM requests one shot play for	PROF	T0+854s	connection of active DMI channel:	DMI		Requested sound with identifier 42



	sound with identifier 42			Message-S42-1			(Message42.wav) is played once.
53	STM requests one shot play for sound with identifier 43	PROF	T0+859s	connection of active DMI channel: Message-S43-1	DMI		Requested sound with identifier 43 (Message43.wav) is played once.
54	STM requests one shot play for sound with identifier 44	PROF	T0+864s	connection of active DMI channel: Message-S44-1	DMI		Requested sound with identifier 44 (Message44.wav) is played once.
55	STM requests one shot play for sound with identifier 45	PROF	T0+869s	connection of active DMI channel: Message-S45-1	DMI		Requested sound with identifier 45 (Message45.wav) is played once.
56	STM requests one shot play for sound with identifier 46	PROF	T0+874s	connection of active DMI channel: Message-S46-1	DMI		Requested sound with identifier 46 (Message46.wav) is played once.
57	STM requests one shot play for sound with identifier 47	PROF	T0+879s	connection of active DMI channel: Message-S47-1	DMI		Requested sound with identifier 47 (Message47.wav) is played once.
58	STM requests one shot play for sound with identifier 48	PROF	T0+884s	connection of active DMI channel: Message-S48-1	DMI		Requested sound with identifier 48 (Message48.wav) is played once.
59	STM requests one shot play for sound with identifier 49	PROF	T0+889s	connection of active DMI channel: Message-S49-1	DMI		Requested sound with identifier 49 (Message49.wav) is played once.
60	STM requests one shot play for sound with identifier 50	PROF	T0+894s	connection of active DMI channel: Message-S50-1	DMI		Requested sound with identifier 50 (Message50.wav) is played once.
61	STM requests one shot play for sound with identifier 51	PROF	T0+899s	connection of active DMI channel: Message-S51-1	DMI		Requested sound with identifier 51 (Message51.wav) is played once.
62	STM requests one shot play for sound with identifier 52	PROF	T0+904s	connection of active DMI channel: Message-S52-1	DMI		Requested sound with identifier 52 (Message52.wav) is played once.
63	STM requests one shot play for sound with identifier 53	PROF	T0+909s	connection of active DMI channel: Message-S53-1	DMI		Requested sound with identifier 53 (Message53.wav) is played once.
64	STM requests one shot play for sound with identifier 54	PROF	T0+914s	connection of active DMI channel: Message-S54-1	DMI		Requested sound with identifier 54 (Message54.wav) is played once.
65	STM requests one shot play for sound with identifier 55	PROF	T0+919s	connection of active DMI channel: Message-S55-1	DMI		Requested sound with identifier 55 (Message55.wav) is played once.
66	STM requests one shot play for sound with identifier 56	PROF	T0+924s	connection of active DMI channel: Message-S56-1	DMI		Requested sound with identifier 56 (Message56.wav) is played once.



67	STM requests one shot play for sound with identifier 57	PROF	T0+929s	connection of active DMI channel: Message-S57-1	DMI		Requested sound with identifier 57 (Message57.wav) is played once.
68	STM requests one shot play for sound with identifier 58	PROF	T0+934s	connection of active DMI channel: Message-S58-1	DMI		Requested sound with identifier 58 (Message58.wav) is played once.
69	STM requests one shot play for sound with identifier 59	PROF	T0+939s	connection of active DMI channel: Message-S59-1	DMI		Requested sound with identifier 59 (Message59.wav) is played once.
70	STM requests one shot play for sound with identifier 60	PROF	T0+944s	connection of active DMI channel: Message-S60-1	DMI		Requested sound with identifier 60 (Message60.wav) is played once.
71	STM requests one shot play for sound with identifier 61	PROF	T0+949s	connection of active DMI channel: Message-S61-1	DMI		Requested sound with identifier 61 (Message61.wav) is played once.
72	STM requests one shot play for sound with identifier 62	PROF	T0+954s	connection of active DMI channel: Message-S62-1	DMI		Requested sound with identifier 62 (Message62.wav) is played once.
73	STM requests one shot play for sound with identifier 63	PROF	T0+959s	connection of active DMI channel: Message-S63-1	DMI		Requested sound with identifier 63 (Message63.wav) is played once.
74	STM requests one shot play for sound with identifier 64	PROF	T0+964s	connection of active DMI channel: Message-S64-1	DMI		Requested sound with identifier 64 (Message64.wav) is played once.
75	STM requests one shot play for sound with identifier 65	PROF	T0+969s	connection of active DMI channel: Message-S65-1	DMI		Requested sound with identifier 65 (Message65.wav) is played once.
76	STM requests one shot play for sound with identifier 66	PROF	T0+974s	connection of active DMI channel: Message-S66-1	DMI		Requested sound with identifier 66 (Message66.wav) is played once.
77	STM requests one shot play for sound with identifier 67	PROF	T0+979s	connection of active DMI channel: Message-S67-1	DMI		Requested sound with identifier 67 (Message67.wav) is played once.
78	STM requests one shot play for sound with identifier 68	PROF	T0+984s	connection of active DMI channel: Message-S68-1	DMI		Requested sound with identifier 68 (Message68.wav) is played once.
79	STM requests one shot play for sound with identifier 69	PROF	T0+989s	connection of active DMI channel: Message-S69-1	DMI		Requested sound with identifier 69 (Message69.wav) is played once.
80	STM requests one shot play for sound with identifier 70	PROF	T0+994s	connection of active DMI channel: Message-S70-1	DMI		Requested sound with identifier 70 (Message70.wav) is played once.



81	STM requests one shot play for sound with identifier 71	PROF	T0+999s	connection of active DMI channel: Message-S71-1	DMI		Requested sound with identifier 71 (Message71.wav) is played once.
82	STM requests one shot play for sound with identifier 72	PROF	T0+1004s	connection of active DMI channel: Message-S72-1	DMI		Requested sound with identifier 72 (Message72.wav) is played once.
83	STM requests one shot play for sound with identifier 73	PROF	T0+1009s	connection of active DMI channel: Message-S73-1	DMI		Requested sound with identifier 73 (Message73.wav) is played once.
84	STM requests one shot play for sound with identifier 74	PROF	T0+1014s	connection of active DMI channel: Message-S74-1	DMI		Requested sound with identifier 74 (Message74.wav) is played once.
85	STM requests one shot play for sound with identifier 75	PROF	T0+1019s	connection of active DMI channel: Message-S75-1	DMI		Requested sound with identifier 75 (Message75.wav) is played once.
86	STM requests one shot play for sound with identifier 76	PROF	T0+1024s	connection of active DMI channel: Message-S76-1	DMI		Requested sound with identifier 76 (Message76.wav) is played once.
87	STM requests one shot play for sound with identifier 77	PROF	T0+1029s	connection of active DMI channel: Message-S77-1	DMI		Requested sound with identifier 77 (Message77.wav) is played once.
88	STM requests continuous play for sound with identifier 77	PROF	T0+1034s	connection of active DMI channel: Message-S77-2	DMI		Requested sound with identifier 77 (Message77.wav) is played continuously.
89	STM requests stop sound for sound with identifier 77	PROF	T0+1044s	connection of active DMI channel: Message-S77-3	DMI		Sound is stopped.
90	STM requests one shot play for sound with identifier 78	PROF	T0+1049s	connection of active DMI channel: Message-S78-1	DMI		Requested sound with identifier 78 (Message78.wav) is played once.
91	STM requests one shot play for sound with identifier 79	PROF	T0+1054s	connection of active DMI channel: Message-S79-1	DMI		Requested sound with identifier 79 (Message79.wav) is played once.
92	STM requests one shot play for sound with identifier 80	PROF	T0+1059s	connection of active DMI channel: Message-S80-1	DMI		Requested sound with identifier 80 (Message80.wav) is played once.
93	STM requests one shot play for sound with identifier 81	PROF	T0+1064s	connection of active DMI channel: Message-S81-1	DMI		Requested sound with identifier 81 (Message81.wav) is played once.
94	STM requests one shot play for sound with identifier 82	PROF	T0+1069s	connection of active DMI channel: Message-S82-1	DMI		Requested sound with identifier 82 (Message82.wav) is played once.



95	STM requests one shot play for sound with identifier 83	PROF	T0+1074s	connection of active DMI channel: Message-S83-1	DMI		Requested sound with identifier 83 (Message83.wav) is played once.
96	STM requests one shot play for sound with identifier 84	PROF	T0+1079s	connection of active DMI channel: Message-S84-1	DMI		Requested sound with identifier 84 (Message84.wav) is played once.
97	STM requests one shot play for sound with identifier 85	PROF	T0+1084s	connection of active DMI channel: Message-S85-1	DMI		Requested sound with identifier 85 (Message85.wav) is played once.
98	STM requests one shot play for sound with identifier 86	PROF	T0+1089s	connection of active DMI channel: Message-S86-1	DMI		Requested sound with identifier 86 (Message86.wav) is played once.
99	STM requests one shot play for sound with identifier 87	PROF	T0+1094s	connection of active DMI channel: Message-S87-1	DMI		Requested sound with identifier 87 (Message87.wav) is played once.
100	STM requests one shot play for sound with identifier 88	PROF	T0+1099s	connection of active DMI channel: Message-S88-1	DMI		Requested sound with identifier 88 (Message88.wav) is played once.
101	STM requests one shot play for sound with identifier 89	PROF	T0+1104s	connection of active DMI channel: Message-S89-1	DMI		Requested sound with identifier 89 (Message89.wav) is played once.
102	STM requests one shot play for sound with identifier 90	PROF	T0+1109s	connection of active DMI channel: Message-S90-1	DMI		Requested sound with identifier 90 (Message90.wav) is played once.
103	STM requests one shot play for sound with identifier 91	PROF	T0+1114s	connection of active DMI channel: Message-S91-1	DMI		Requested sound with identifier 91 (Message91.wav) is played once.
104	STM requests one shot play for sound with identifier 92	PROF	T0+1119s	connection of active DMI channel: Message-S92-1	DMI		Requested sound with identifier 92 (Message92.wav) is played once.
105	STM requests one shot play for sound with identifier 93	PROF	T0+1124s	connection of active DMI channel: Message-S93-1	DMI		Requested sound with identifier 93 (Message93.wav) is played once.
106	STM requests one shot play for sound with identifier 94	PROF	T0+1129s	connection of active DMI channel: Message-S94-1	DMI		Requested sound with identifier 94 (Message94.wav) is played once.
107	STM requests one shot play for sound with identifier 95	PROF	T0+1134s	connection of active DMI channel: Message-S95-1	DMI		Requested sound with identifier 95 (Message95.wav) is played once.
108	STM requests one shot play for sound with identifier 96	PROF	T0+1139s	connection of active DMI channel: Message-S96-1	DMI		Requested sound with identifier 96 (Message96.wav) is played once.



109	STM requests one shot play for sound with identifier 97	PROF	T0+1144s	connection of active DMI channel: Message-S97-1	DMI		Requested sound with identifier 97 (Message97.wav) is played once.
110	STM requests one shot play for sound with identifier 98	PROF	T0+1149s	connection of active DMI channel: Message-S98-1	DMI		Requested sound with identifier 98 (Message98.wav) is played once.
111	STM requests one shot play for sound with identifier 99	PROF	T0+1154s	connection of active DMI channel: Message-S99-1	DMI		Requested sound with identifier 99 (Message99.wav) is played once.
112	STM requests one shot play for sound with identifier 100	PROF	T0+1159s	connection of active DMI channel: Message-S100-1	DMI		Requested sound with identifier 100 (Message100.wav) is played once.
113	STM requests one shot play for sound with identifier 101	PROF	T0+1164s	connection of active DMI channel: Message-S101-1	DMI		Requested sound with identifier 101 (Message101.wav) is played once.
114	STM requests one shot play for sound with identifier 102	PROF	T0+1169s	connection of active DMI channel: Message-S102-1	DMI		Requested sound with identifier 102 (Message102.wav) is played once.
115	STM requests one shot play for sound with identifier 103	PROF	T0+1174s	connection of active DMI channel: Message-S103-1	DMI		Requested sound with identifier 103 (Message103.wav) is played once.
116	STM requests one shot play for sound with identifier 104	PROF	T0+1179s	connection of active DMI channel: Message-S104-1	DMI		Requested sound with identifier 104 (Message104.wav) is played once.
117	STM requests one shot play for sound with identifier 105	PROF	T0+1184s	connection of active DMI channel: Message-S105-1	DMI		Requested sound with identifier 105 (Message105.wav) is played once.
118	STM requests one shot play for sound with identifier 106	PROF	T0+1189s	connection of active DMI channel: Message-S106-1	DMI		Requested sound with identifier 106 (Message106.wav) is played once.
119	STM requests one shot play for sound with identifier 107	PROF	T0+1194s	connection of active DMI channel: Message-S107-1	DMI		Requested sound with identifier 107 (Message107.wav) is played once.
120	STM requests one shot play for sound with identifier 108	PROF	T0+1199s	connection of active DMI channel: Message-S108-1	DMI		Requested sound with identifier 108 (Message108.wav) is played once.
121	STM requests one shot play for sound with identifier 109	PROF	T0+1204s	connection of active DMI channel: Message-S109-1	DMI		Requested sound with identifier 109 (Message109.wav) is played once.
122	STM requests one shot play for sound with identifier 110	PROF	T0+1209s	connection of active DMI channel: Message-S110-1	DMI		Requested sound with identifier 110 (Message110.wav) is played once.



123	STM requests one shot play for sound with identifier 111	PROF	T0+1214s	connection of active DMI channel: Message-S111-1	DMI		Requested sound with identifier 111 (Message111.wav) is played once.
124	STM requests one shot play for sound with identifier 112	PROF	T0+1219s	connection of active DMI channel: Message-S112-1	DMI		Requested sound with identifier 112 (Message112.wav) is played once.
125	STM requests one shot play for sound with identifier 113	PROF	T0+1224s	connection of active DMI channel: Message-S113-1	DMI		Requested sound with identifier 113 (Message113.wav) is played once.
126	STM requests one shot play for sound with identifier 114	PROF	T0+1229s	connection of active DMI channel: Message-S114-1	DMI		Requested sound with identifier 114 (Message114.wav) is played once.
127	STM requests one shot play for sound with identifier 115	PROF	T0+1234s	connection of active DMI channel: Message-S115-1	DMI		Requested sound with identifier 115 (Message115.wav) is played once.
128	STM requests one shot play for sound with identifier 116	PROF	T0+1239s	connection of active DMI channel: Message-S116-1	DMI		Requested sound with identifier 116 (Message116.wav) is played once.
129	STM requests one shot play for sound with identifier 117	PROF	T0+1244s	connection of active DMI channel: Message-S117-1	DMI		Requested sound with identifier 117 (Message117.wav) is played once.
130	STM requests one shot play for sound with identifier 118	PROF	T0+1249s	connection of active DMI channel: Message-S118-1	DMI		Requested sound with identifier 118 (Message118.wav) is played once.
131	STM requests one shot play for sound with identifier 119	PROF	T0+1254s	connection of active DMI channel: Message-S119-1	DMI		Requested sound with identifier 119 (Message119.wav) is played once.
132	STM requests one shot play for sound with identifier 120	PROF	T0+1259s	connection of active DMI channel: Message-S120-1	DMI		Requested sound with identifier 120 (Message120.wav) is played once.
133	STM requests one shot play for sound with identifier 121	PROF	T0+1264s	connection of active DMI channel: Message-S121-1	DMI		Requested sound with identifier 121 (Message121.wav) is played once.
134	STM requests one shot play for sound with identifier 122	PROF	T0+1269s	connection of active DMI channel: Message-S122-1	DMI		Requested sound with identifier 122 (Message122.wav) is played once.
135	STM requests one shot play for sound with identifier 123	PROF	T0+1274s	connection of active DMI channel: Message-S123-1	DMI		Requested sound with identifier 123 (Message123.wav) is played once.
136	STM requests one shot play for sound with identifier 124	PROF	T0+1279s	connection of active DMI channel: Message-S124-1	DMI		Requested sound with identifier 124 (Message124.wav) is played once.



137	STM requests one shot play for sound with identifier 125	PROF	T0+1284s	connection of active DMI channel: Message-S125-1	DMI		Requested sound with identifier 125 (Message125.wav) is played once.
138	STM requests one shot play for sound with identifier 126	PROF	T0+1289s	connection of active DMI channel: Message-S126-1	DMI		Requested sound with identifier 126 (Message126.wav) is played once.
139	STM requests one shot play for sound with identifier 127	PROF	T0+1294s	connection of active DMI channel: Message-S127-1	DMI		Requested sound with identifier 127 (Message127.wav) is played once.
140	STM requests one shot play for sound with identifier 128	PROF	T0+1299s	connection of active DMI channel: Message-S128-1	DMI		Requested sound with identifier 128 (Message128.wav) is played once.
141	STM requests one shot play for sound with identifier 129	PROF	T0+1304s	connection of active DMI channel: Message-S129-1	DMI		Requested sound with identifier 129 (Message129.wav) is played once.
142	STM requests one shot play for sound with identifier 130	PROF	T0+1309s	connection of active DMI channel: Message-S130-1	DMI		Requested sound with identifier 130 (Message130.wav) is played once.
143	STM requests one shot play for sound with identifier 131	PROF	T0+1314s	connection of active DMI channel: Message-S131-1	DMI		Requested sound with identifier 131 (Message131.wav) is played once.
144	STM requests one shot play for sound with identifier 132	PROF	T0+1319s	connection of active DMI channel: Message-S132-1	DMI		Requested sound with identifier 132 (Message132.wav) is played once.
145	STM requests one shot play for sound with identifier 133	PROF	T0+1324s	connection of active DMI channel: Message-S133-1	DMI		Requested sound with identifier 133 (Message133.wav) is played once.
146	STM requests one shot play for sound with identifier 134	PROF	T0+1329s	connection of active DMI channel: Message-S134-1	DMI		Requested sound with identifier 134 (Message134.wav) is played once.
147	STM requests one shot play for sound with identifier 135	PROF	T0+1334s	connection of active DMI channel: Message-S135-1	DMI		Requested sound with identifier 135 (Message135.wav) is played once.
148	STM requests one shot play for sound with identifier 136	PROF	T0+1339s	connection of active DMI channel: Message-S136-1	DMI		Requested sound with identifier 136 (Message136.wav) is played once.
149	STM requests one shot play for sound with identifier 137	PROF	T0+1344s	connection of active DMI channel: Message-S137-1	DMI		Requested sound with identifier 137 (Message137.wav) is played once.
150	STM requests one shot play for sound with identifier 138	PROF	T0+1349s	connection of active DMI channel: Message-S138-1	DMI		Requested sound with identifier 138 (Message138.wav) is played once.



151	STM requests one shot play for sound with identifier 139	PROF	T0+1354s	connection of active DMI channel: Message-S139-1	DMI		Requested sound with identifier 139 (Message139.wav) is played once.
152	STM requests one shot play for sound with identifier 140	PROF	T0+1359s	connection of active DMI channel: Message-S140-1	DMI		Requested sound with identifier 140 (Message140.wav) is played once.
153	STM requests one shot play for sound with identifier 141	PROF	T0+1364s	connection of active DMI channel: Message-S141-1	DMI		Requested sound with identifier 141 (Message141.wav) is played once.
154	STM requests one shot play for sound with identifier 142	PROF	T0+1369s	connection of active DMI channel: Message-S142-1	DMI		Requested sound with identifier 142 (Message142.wav) is played once.
155	STM requests one shot play for sound with identifier 143	PROF	T0+1374s	connection of active DMI channel: Message-S143-1	DMI		Requested sound with identifier 143 (Message143.wav) is played once.
156	STM requests one shot play for sound with identifier 144	PROF	T0+1379s	connection of active DMI channel: Message-S144-1	DMI		Requested sound with identifier 144 (Message144.wav) is played once.
157	STM requests one shot play for sound with identifier 145	PROF	T0+1384s	connection of active DMI channel: Message-S145-1	DMI		Requested sound with identifier 145 (Message145.wav) is played once.
158	STM requests one shot play for sound with identifier 146	PROF	T0+1389s	connection of active DMI channel: Message-S146-1	DMI		Requested sound with identifier 146 (Message146.wav) is played once.
159	STM requests one shot play for sound with identifier 147	PROF	T0+1394s	connection of active DMI channel: Message-S147-1	DMI		Requested sound with identifier 147 (Message147.wav) is played once.
160	STM requests one shot play for sound with identifier 148	PROF	T0+1399s	connection of active DMI channel: Message-S148-1	DMI		Requested sound with identifier 148 (Message148.wav) is played once.
161	STM requests one shot play for sound with identifier 149	PROF	T0+1404s	connection of active DMI channel: Message-S149-1	DMI		Requested sound with identifier 149 (Message149.wav) is played once.
162	STM requests one shot play for sound with identifier 150	PROF	T0+1409s	connection of active DMI channel: Message-S150-1	DMI		Requested sound with identifier 150 (Message150.wav) is played once.
163	STM requests one shot play for sound with identifier 151	PROF	T0+1414s	connection of active DMI channel: Message-S151-1	DMI		Requested sound with identifier 151 (Message151.wav) is played once.
164	STM requests one shot play for sound with identifier 152	PROF	T0+1419s	connection of active DMI channel: Message-S152-1	DMI		Requested sound with identifier 152 (Message152.wav) is played once.



165	STM requests one shot play for sound with identifier 153	PROF	T0+1424s	connection of active DMI channel: Message-S153-1	DMI		Requested sound with identifier 153 (Message153.wav) is played once.
166	STM requests one shot play for sound with identifier 154	PROF	T0+1429s	connection of active DMI channel: Message-S154-1	DMI		Requested sound with identifier 154 (Message154.wav) is played once.
167	STM requests one shot play for sound with identifier 155	PROF	T0+1434s	connection of active DMI channel: Message-S155-1	DMI		Requested sound with identifier 155 (Message155.wav) is played once.
168	STM requests one shot play for sound with identifier 156	PROF	T0+1439s	connection of active DMI channel: Message-S156-1	DMI		Requested sound with identifier 156 (Message156.wav) is played once.
169	STM requests one shot play for sound with identifier 157	PROF	T0+1444s	connection of active DMI channel: Message-S157-1	DMI		Requested sound with identifier 157 (Message157.wav) is played once.
170	STM requests one shot play for sound with identifier 158	PROF	T0+1449s	connection of active DMI channel: Message-S158-1	DMI		Requested sound with identifier 158 (Message158.wav) is played once.
171	STM requests one shot play for sound with identifier 159	PROF	T0+1454s	connection of active DMI channel: Message-S159-1	DMI		Requested sound with identifier 159 (Message159.wav) is played once.
172	STM requests one shot play for sound with identifier 160	PROF	T0+1459s	connection of active DMI channel: Message-S160-1	DMI		Requested sound with identifier 160 (Message160.wav) is played once.
173	STM requests one shot play for sound with identifier 161	PROF	T0+1464s	connection of active DMI channel: Message-S161-1	DMI		Requested sound with identifier 161 (Message161.wav) is played once.
174	STM requests one shot play for sound with identifier 162	PROF	T0+1469s	connection of active DMI channel: Message-S162-1	DMI		Requested sound with identifier 162 (Message162.wav) is played once.
175	STM requests one shot play for sound with identifier 163	PROF	T0+1474s	connection of active DMI channel: Message-S163-1	DMI		Requested sound with identifier 163 (Message163.wav) is played once.
176	STM requests one shot play for sound with identifier 164	PROF	T0+1479s	connection of active DMI channel: Message-S164-1	DMI		Requested sound with identifier 164 (Message164.wav) is played once.
177	STM requests one shot play for sound with identifier 165	PROF	T0+1484s	connection of active DMI channel: Message-S165-1	DMI		Requested sound with identifier 165 (Message165.wav) is played once.
178	STM requests one shot play for sound with identifier 166	PROF	T0+1489s	connection of active DMI channel: Message-S166-1	DMI		Requested sound with identifier 166 (Message166.wav) is played once.



179	STM requests one shot play for sound with identifier 167	PROF	T0+1494s	connection of active DMI channel: Message-S167-1	DMI		Requested sound with identifier 167 (Message167.wav) is played once.
180	STM requests one shot play for sound with identifier 168	PROF	T0+1499s	connection of active DMI channel: Message-S168-1	DMI		Requested sound with identifier 168 (Message168.wav) is played once.
181	STM requests one shot play for sound with identifier 169	PROF	T0+1504s	connection of active DMI channel: Message-S169-1	DMI		Requested sound with identifier 169 (Message169.wav) is played once.
182	STM requests one shot play for sound with identifier 170	PROF	T0+1509s	connection of active DMI channel: Message-S170-1	DMI		Requested sound with identifier 170 (Message170.wav) is played once.
183	STM requests one shot play for sound with identifier 171	PROF	T0+1514s	connection of active DMI channel: Message-S171-1	DMI		Requested sound with identifier 171 (Message171.wav) is played once.
184	STM requests one shot play for sound with identifier 172	PROF	T0+1519s	connection of active DMI channel: Message-S172-1	DMI		Requested sound with identifier 172 (Message172.wav) is played once.
185	STM requests one shot play for sound with identifier 173	PROF	T0+1524s	connection of active DMI channel: Message-S173-1	DMI		Requested sound with identifier 173 (Message173.wav) is played once.
186	STM requests one shot play for sound with identifier 174	PROF	T0+1529s	connection of active DMI channel: Message-S174-1	DMI		Requested sound with identifier 174 (Message174.wav) is played once.
187	STM requests one shot play for sound with identifier 175	PROF	T0+1534s	connection of active DMI channel: Message-S175-1	DMI		Requested sound with identifier 175 (Message175.wav) is played once.
188	STM requests one shot play for sound with identifier 176	PROF	T0+1539s	connection of active DMI channel: Message-S176-1	DMI		Requested sound with identifier 176 (Message176.wav) is played once.
189	STM requests one shot play for sound with identifier 177	PROF	T0+1544s	connection of active DMI channel: Message-S177-1	DMI		Requested sound with identifier 177 (Message177.wav) is played once.
190	STM requests continuous play for sound with identifier 177	PROF	T0+1549s	connection of active DMI channel: Message-S177-2	DMI		Requested sound with identifier 177 (Message177.wav) is played continuously.
191	STM requests stop sound for sound with identifier 177	PROF	T0+1559s	connection of active DMI channel: Message-S177-3	DMI		Sound is stopped.
192	STM requests one shot play for sound with identifier 178	PROF	T0+1564s	connection of active DMI channel: Message-S178-1	DMI		Requested sound with identifier 178 (Message178.wav) is played once.



193	STM requests one shot play for sound with identifier 179	PROF	T0+1569s	connection of active DMI channel: Message-S179-1	DMI		Requested sound with identifier 179 (Message179.wav) is played once.
194	STM requests one shot play for sound with identifier 180	PROF	T0+1574s	connection of active DMI channel: Message-S180-1	DMI		Requested sound with identifier 180 (Message180.wav) is played once.
195	STM requests one shot play for sound with identifier 181	PROF	T0+1579s	connection of active DMI channel: Message-S181-1	DMI		Requested sound with identifier 181 (Message181.wav) is played once.
196	STM requests one shot play for sound with identifier 182	PROF	T0+1584s	connection of active DMI channel: Message-S182-1	DMI		Requested sound with identifier 182 (Message182.wav) is played once.
197	STM requests one shot play for sound with identifier 183	PROF	T0+1589s	connection of active DMI channel: Message-S183-1	DMI		Requested sound with identifier 183 (Message183.wav) is played once.
198	STM requests one shot play for sound with identifier 184	PROF	T0+1594s	connection of active DMI channel: Message-S184-1	DMI		Requested sound with identifier 184 (Message184.wav) is played once.
199	STM requests one shot play for sound with identifier 185	PROF	T0+1599s	connection of active DMI channel: Message-S185-1	DMI		Requested sound with identifier 185 (Message185.wav) is played once.
200	STM requests one shot play for sound with identifier 186	PROF	T0+1604s	connection of active DMI channel: Message-S186-1	DMI		Requested sound with identifier 186 (Message186.wav) is played once.
201	STM requests one shot play for sound with identifier 187	PROF	T0+1609s	connection of active DMI channel: Message-S187-1	DMI		Requested sound with identifier 187 (Message187.wav) is played once.
202	STM requests one shot play for sound with identifier 188	PROF	T0+1614s	connection of active DMI channel: Message-S188-1	DMI		Requested sound with identifier 188 (Message188.wav) is played once.
203	STM requests one shot play for sound with identifier 189	PROF	T0+1619s	connection of active DMI channel: Message-S189-1	DMI		Requested sound with identifier 189 (Message189.wav) is played once.
204	STM requests one shot play for sound with identifier 190	PROF	T0+1624s	connection of active DMI channel: Message-S190-1	DMI		Requested sound with identifier 190 (Message190.wav) is played once.
205	STM requests one shot play for sound with identifier 191	PROF	T0+1629s	connection of active DMI channel: Message-S191-1	DMI		Requested sound with identifier 191 (Message191.wav) is played once.
206	STM requests one shot play for sound with identifier 192	PROF	T0+1634s	connection of active DMI channel: Message-S192-1	DMI		Requested sound with identifier 192 (Message192.wav) is played once.



207	STM requests one shot play for sound with identifier 193	PROF	T0+1639 s	connection of active DMI channel: Message-S193-1	DMI		Requested sound with identifier 193 (Message193.wav) is played once.
208	STM requests one shot play for sound with identifier 194	PROF	T0+1644 s	connection of active DMI channel: Message-S194-1	DMI		Requested sound with identifier 194 (Message194.wav) is played once.
209	STM requests one shot play for sound with identifier 195	PROF	T0+1649 s	connection of active DMI channel: Message-S195-1	DMI		Requested sound with identifier 195 (Message195.wav) is played once.
210	STM requests one shot play for sound with identifier 196	PROF	T0+1654 s	connection of active DMI channel: Message-S196-1	DMI		Requested sound with identifier 196 (Message196.wav) is played once.
211	STM requests one shot play for sound with identifier 197	PROF	T0+1659 s	connection of active DMI channel: Message-S197-1	DMI		Requested sound with identifier 197 (Message197.wav) is played once.
212	STM requests one shot play for sound with identifier 198	PROF	T0+1664 s	connection of active DMI channel: Message-S198-1	DMI		Requested sound with identifier 198 (Message198.wav) is played once.
213	STM requests one shot play for sound with identifier 199	PROF	T0+1669 s	connection of active DMI channel: Message-S199-1	DMI		Requested sound with identifier 199 (Message199.wav) is played once.
214	STM requests one shot play for sound with identifier 200	PROF	T0+1674 s	connection of active DMI channel: Message-S200-1	DMI		Requested sound with identifier 200 (Message200.wav) is played once.
215	STM requests one shot play for sound with identifier 201	PROF	T0+1679 s	connection of active DMI channel: Message-S201-1	DMI		Requested sound with identifier 201 (Message201.wav) is played once.
216	STM requests one shot play for sound with identifier 202	PROF	T0+1684 s	connection of active DMI channel: Message-S202-1	DMI		Requested sound with identifier 202 (Message202.wav) is played once.
217	STM requests one shot play for sound with identifier 203	PROF	T0+1689 s	connection of active DMI channel: Message-S203-1	DMI		Requested sound with identifier 203 (Message203.wav) is played once.
218	STM requests one shot play for sound with identifier 204	PROF	T0+1694 s	connection of active DMI channel: Message-S204-1	DMI		Requested sound with identifier 204 (Message204.wav) is played once.
219	STM requests one shot play for sound with identifier 205	PROF	T0+1699 s	connection of active DMI channel: Message-S205-1	DMI		Requested sound with identifier 205 (Message205.wav) is played once.
220	STM requests one shot play for sound with identifier 206	PROF	T0+1704 s	connection of active DMI channel: Message-S206-1	DMI		Requested sound with identifier 206 (Message206.wav) is played once.



221	STM requests one shot play for sound with identifier 207	PROF	T0+1709s	connection of active DMI channel: Message-S207-1	DMI		Requested sound with identifier 207 (Message207.wav) is played once.
222	STM requests one shot play for sound with identifier 208	PROF	T0+1714s	connection of active DMI channel: Message-S208-1	DMI		Requested sound with identifier 208 (Message208.wav) is played once.
223	STM requests one shot play for sound with identifier 209	PROF	T0+1719s	connection of active DMI channel: Message-S209-1	DMI		Requested sound with identifier 209 (Message209.wav) is played once.
224	STM requests one shot play for sound with identifier 210	PROF	T0+1724s	connection of active DMI channel: Message-S210-1	DMI		Requested sound with identifier 210 (Message210.wav) is played once.
225	STM requests one shot play for sound with identifier 211	PROF	T0+1729s	connection of active DMI channel: Message-S211-1	DMI		Requested sound with identifier 211 (Message211.wav) is played once.
226	STM requests one shot play for sound with identifier 212	PROF	T0+1734s	connection of active DMI channel: Message-S212-1	DMI		Requested sound with identifier 212 (Message212.wav) is played once.
227	STM requests one shot play for sound with identifier 213	PROF	T0+1739s	connection of active DMI channel: Message-S213-1	DMI		Requested sound with identifier 213 (Message213.wav) is played once.
228	STM requests one shot play for sound with identifier 214	PROF	T0+1744s	connection of active DMI channel: Message-S214-1	DMI		Requested sound with identifier 214 (Message214.wav) is played once.
229	STM requests one shot play for sound with identifier 215	PROF	T0+1749s	connection of active DMI channel: Message-S215-1	DMI		Requested sound with identifier 215 (Message215.wav) is played once.
230	STM requests one shot play for sound with identifier 216	PROF	T0+1754s	connection of active DMI channel: Message-S216-1	DMI		Requested sound with identifier 216 (Message216.wav) is played once.
231	STM requests one shot play for sound with identifier 217	PROF	T0+1759s	connection of active DMI channel: Message-S217-1	DMI		Requested sound with identifier 217 (Message217.wav) is played once.
232	STM requests one shot play for sound with identifier 218	PROF	T0+1764s	connection of active DMI channel: Message-S218-1	DMI		Requested sound with identifier 218 (Message218.wav) is played once.
233	STM requests one shot play for sound with identifier 219	PROF	T0+1769s	connection of active DMI channel: Message-S219-1	DMI		Requested sound with identifier 219 (Message219.wav) is played once.
234	STM requests one shot play for sound with identifier 220	PROF	T0+1774s	connection of active DMI channel: Message-S220-1	DMI		Requested sound with identifier 220 (Message220.wav) is played once.



235	STM requests one shot play for sound with identifier 221	PROF	T0+1779s	connection of active DMI channel: Message-S221-1	DMI		Requested sound with identifier 221 (Message221.wav) is played once.
236	STM requests one shot play for sound with identifier 222	PROF	T0+1784s	connection of active DMI channel: Message-S222-1	DMI		Requested sound with identifier 222 (Message222.wav) is played once.
237	STM requests one shot play for sound with identifier 223	PROF	T0+1789s	connection of active DMI channel: Message-S223-1	DMI		Requested sound with identifier 223 (Message223.wav) is played once.
238	STM requests one shot play for sound with identifier 224	PROF	T0+1794s	connection of active DMI channel: Message-S224-1	DMI		Requested sound with identifier 224 (Message224.wav) is played once.
239	STM requests one shot play for sound with identifier 225	PROF	T0+1799s	connection of active DMI channel: Message-S225-1	DMI		Requested sound with identifier 225 (Message225.wav) is played once.
240	STM requests one shot play for sound with identifier 226	PROF	T0+1804s	connection of active DMI channel: Message-S226-1	DMI		Requested sound with identifier 226 (Message226.wav) is played once.
241	STM requests one shot play for sound with identifier 227	PROF	T0+1809s	connection of active DMI channel: Message-S227-1	DMI		Requested sound with identifier 227 (Message227.wav) is played once.
242	STM requests one shot play for sound with identifier 228	PROF	T0+1814s	connection of active DMI channel: Message-S228-1	DMI		Requested sound with identifier 228 (Message228.wav) is played once.
243	STM requests one shot play for sound with identifier 229	PROF	T0+1819s	connection of active DMI channel: Message-S229-1	DMI		Requested sound with identifier 229 (Message229.wav) is played once.
244	STM requests one shot play for sound with identifier 230	PROF	T0+1824s	connection of active DMI channel: Message-S230-1	DMI		Requested sound with identifier 230 (Message230.wav) is played once.
245	STM requests one shot play for sound with identifier 231	PROF	T0+1829s	connection of active DMI channel: Message-S231-1	DMI		Requested sound with identifier 231 (Message231.wav) is played once.
246	STM requests one shot play for sound with identifier 232	PROF	T0+1834s	connection of active DMI channel: Message-S232-1	DMI		Requested sound with identifier 232 (Message232.wav) is played once.
247	STM requests one shot play for sound with identifier 233	PROF	T0+1839s	connection of active DMI channel: Message-S233-1	DMI		Requested sound with identifier 233 (Message233.wav) is played once.
248	STM requests one shot play for sound with identifier 234	PROF	T0+1844s	connection of active DMI channel: Message-S234-1	DMI		Requested sound with identifier 234 (Message234.wav) is played once.



249	STM requests one shot play for sound with identifier 235	PROF	T0+1849s	connection of active DMI channel: Message-S235-1	DMI		Requested sound with identifier 235 (Message235.wav) is played once.
250	STM requests one shot play for sound with identifier 236	PROF	T0+1854s	connection of active DMI channel: Message-S236-1	DMI		Requested sound with identifier 236 (Message236.wav) is played once.
251	STM requests one shot play for sound with identifier 237	PROF	T0+1859s	connection of active DMI channel: Message-S237-1	DMI		Requested sound with identifier 237 (Message237.wav) is played once.
252	STM requests continuous play for sound with identifier 237	PROF	T0+1864s	connection of active DMI channel: Message-S237-2	DMI		Requested sound with identifier 237 (Message237.wav) is played continuously.
253	STM requests stop sound for sound with identifier 237	PROF	T0+1874s	connection of active DMI channel: Message-S237-3	DMI		Sound is stopped.
254	STM requests one shot play for sound with identifier 238	PROF	T0+1879s	connection of active DMI channel: Message-S238-1	DMI		Requested sound with identifier 238 (Message238.wav) is played once.
255	STM requests one shot play for sound with identifier 239	PROF	T0+1884s	connection of active DMI channel: Message-S239-1	DMI		Requested sound with identifier 239 (Message239.wav) is played once.
256	STM requests one shot play for sound with identifier 240	PROF	T0+1889s	connection of active DMI channel: Message-S240-1	DMI		Requested sound with identifier 240 (Message240.wav) is played once.
257	STM requests one shot play for sound with identifier 241	PROF	T0+1894s	connection of active DMI channel: Message-S241-1	DMI		Requested sound with identifier 241 (Message241.wav) is played once.
258	STM requests one shot play for sound with identifier 242	PROF	T0+1899s	connection of active DMI channel: Message-S242-1	DMI		Requested sound with identifier 242 (Message242.wav) is played once.
259	STM requests one shot play for sound with identifier 243	PROF	T0+1904s	connection of active DMI channel: Message-S243-1	DMI		Requested sound with identifier 243 (Message243.wav) is played once.
260	STM requests one shot play for sound with identifier 244	PROF	T0+1909s	connection of active DMI channel: Message-S244-1	DMI		Requested sound with identifier 244 (Message244.wav) is played once.
261	STM requests one shot play for sound with identifier 245	PROF	T0+1914s	connection of active DMI channel: Message-S245-1	DMI		Requested sound with identifier 245 (Message245.wav) is played once.
262	STM requests one shot play for sound with identifier 246	PROF	T0+1919s	connection of active DMI channel: Message-S246-1	DMI		Requested sound with identifier 246 (Message246.wav) is played once.



263	STM requests one shot play for sound with identifier 247	PROF	T0+1924s	connection of active DMI channel: Message-S247-1	DMI		Requested sound with identifier 247 (Message247.wav) is played once.
264	STM requests one shot play for sound with identifier 248	PROF	T0+1929s	connection of active DMI channel: Message-S248-1	DMI		Requested sound with identifier 248 (Message248.wav) is played once.
265	STM requests one shot play for sound with identifier 249	PROF	T0+1934s	connection of active DMI channel: Message-S249-1	DMI		Requested sound with identifier 249 (Message249.wav) is played once.
266	STM requests one shot play for sound with identifier 250	PROF	T0+1939s	connection of active DMI channel: Message-S250-1	DMI		Requested sound with identifier 250 (Message250.wav) is played once.
267	STM requests one shot play for sound with identifier 251	PROF	T0+1944s	connection of active DMI channel: Message-S251-1	DMI		Requested sound with identifier 251 (Message251.wav) is played once.
268	STM requests one shot play for sound with identifier 252	PROF	T0+1949s	connection of active DMI channel: Message-S252-1	DMI		Requested sound with identifier 252 (Message252.wav) is played once.
269	STM requests one shot play for sound with identifier 253	PROF	T0+1954s	connection of active DMI channel: Message-S253-1	DMI		Requested sound with identifier 253 (Message253.wav) is played once.
270	STM requests one shot play for sound with identifier 254	PROF	T0+1959s	connection of active DMI channel: Message-S254-1	DMI		Requested sound with identifier 254 (Message254.wav) is played once.
271	STM requests one shot play for sound with identifier 255	PROF	T0+1964s	connection of active DMI channel: Message-S255-1	DMI		Requested sound with identifier 255 (Message255.wav) is played once.

Message-S<N>-1: STM requests one shot play for sound with identifier N			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	11	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)



L_PACKET	13	41	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	N	
Q_SOUND(1)	2	1	One shot play
N_ITER(1)	5	0	no sound segments
Padding bits	6	000000b	

Message-S<N>-2: STM requests continuous play for sound with identifier N			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	11	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	41	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	N	
Q_SOUND(1)	2	2	Continuous play
N_ITER(1)	5	0	no sound segments
Padding bits	6	000000b	

Message-S<N>-3: STM requests stop sound for sound with identifier N

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VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	11	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	41	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	N	
Q_SOUND(1)	2	0	Stop sound
N_ITER(1)	5	0	no sound segments
Padding bits	6	000000b	

End Conditions	Value	Comments
STM State	unchanged	
ETCS Mode	unchanged	
ETCS Level	unchanged	
Train State	not relevant	
ETCS Train Data	not relevant	
Active DMI channel Connection	unchanged	
Other DMI channels Connections	not relevant	
TIU Connection	not relevant	



BIU Connection	not relevant	
JD Connection	not relevant	
TIU Regenerative Brake Command	not relevant	
TIU Magnetic Shoes Brake Command	not relevant	
TIU Eddy Current Brake Command for Emergency Brake	not relevant	
TIU Eddy Current Brake Command for Service Brake	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 Traction Status	not relevant	
TIU Direction Controller Position Status	not relevant	
TIU Cab Status	unchanged	
BIU Emergency Brake Command	not relevant	
BIU Service Brake Command	not relevant	
BIU Emergency Brake Status	not relevant	
BIU Service Brake Status	not relevant	
NTC isolation status	unchanged	

2.5.30 Test Case 7e.30

TEST CASE HEADER	
Test case identification	DMI Function



	7e1.0.4.(((7e3.0.1.1.0.0).1.)*(7e3.0.1.1.0.0).1.(7e3.0.1.2.0.0).1.(7e3.0.1.3.0.0.0).1.)*(7e3.0.1.1.0.0).2
	Sound test for customisable DMI service for configuration 7a.9, DMI configuration for other STMs, with 1 sound request at once.: Each sound is played once, selected sounds are also played continuously for 10 seconds and then stopped. Same test steps and messages as in test case 7e.29
ERTMS/ETCS on-board requirements tested	SUBSET-035 13.4.1.1, 13.4.1.2, 13.4.1.7, 13.4.1.8, 13.4.5.2, 13.4.5.3, 13.4.5.4
	ERA ERTMS 015560 (DMI Spec) 9.3.6
STM requirements tested	
Packets transmitted via FFFIS STM	STM-15, STM-46
ERTMS/ETCS on-board configuration	For active STM: customisable DMI service: 7a.9
	DMI configuration 7a.3, 7a.5, 7a.6, 7a.7, 7a.8 or 7a.9 for at least one other STM
Comments and constraints	Starting and end conditions as for test case 7e.29

2.5.31 Test Case 7e.31

TEST CASE HEADER	
Test case identification	DMI Function
	7e1.0.3.(7e3.0.2.1.0.1.0.0).1.(7e3.0.2.1.0.2.0.0).1.(7e3.0.2.1.0.3.0.0.0).1. (7e3.0.2.2.0.1.0.0).1.(7e3.0.2.3.0.0.1.0.0).1.(7e3.0.2.2.0.2.0.0).1. (7e3.0.2.3.0.0.3.0.0.0).1.(7e3.0.2.2.0.1.0.0).1.(7e3.0.2.3.0.0.2.0.0).1. (7e3.0.2.2.0.3.0.0.0).1.(7e3.0.2.3.0.0.1.0.0).2
	Sound test for customisable DMI service for configuration 7a.9, no DMI configuration for other STMs, with 2 sound requests at once.: Requests for two sounds are made with all possible combinations of Q_SOUND for selected sounds.



ERTMS/ETCS on-board requirements tested	SUBSET-035 13.4.1.1, 13.4.1.2, 13.4.1.7, 13.4.1.8, 13.4.5.2, 13.4.5.3, 13.4.5.4
	ERA ERTMS 015560 (DMI Spec) 9.3.6
STM requirements tested	
Packets transmitted via FFFIS STM	STM-15, STM-46
ERTMS/ETCS on-board configuration	For active STM: customisable DMI service: 7a.9
	No DMI configuration for any other STM
Comments and constraints	Starting and end conditions as for test case 7e.29

ERTMS/ETCS on-board Test Case

Step	Description/Comments	Input I/F	Input time	Input Action	Output I/F	Output time limit	Output action
1	STM requests one shot play for sound with identifier 237 and STM requests one shot play for sound with identifier 8	PROF	T0	connection of active DMI channel: Message-S1	DMI		First requested sound with identifier 237 (Message237.wav) is played once. Second requested sound with identifier 8 (Ringing.wav) is played once
2	STM requests one shot play for sound with identifier 237 and STM requests continuous play for sound with identifier 14	PROF	T0+5s	connection of active DMI channel: Message-S2	DMI		First requested sound with identifier 237 (Message237.wav) is played once. Second requested sound with identifier 14 (Single6.wav) is played continuously
3	STM requests one shot play for sound with identifier 237 and STM requests stop sound for sound with identifier 14	PROF	T0+15s	connection of active DMI channel: Message-S3	DMI		First requested sound with identifier 237 (Message237.wav) is played once. Sound with identifier 14 is stopped.



4	STM requests continuous play for sound with identifier 237 and STM requests one shot play for sound with identifier 22	PROF	T0+20s	connection of active DMI channel: Message-S4	DMI		First requested sound with identifier 237 (Message237.wav) is played continuously. Second requested sound with identifier 22 (Double6.wav) is played once
5	STM requests stop sound for sound with identifier 237 and STM requests one shot play for sound with identifier 30	PROF	T0+30s	connection of active DMI channel: Message-S5	DMI		Sound with identifier 237 is stopped. Second requested sound with identifier 30 (Triple6.wav) is played once
6	STM requests continuous play for sound with identifier 237 and STM requests continuous play for sound with identifier 35	PROF	T0+35s	connection of active DMI channel: Message-S6	DMI		First requested sound with identifier 237 (Message237.wav) is played continuously. Second requested sound with identifier 35 (Germany.wav) is played continuously
7	STM requests stop sound for sound with identifier 237 and STM requests stop sound for sound with identifier 14	PROF	T0+45s	connection of active DMI channel: Message-S7	DMI		Sound with identifier 237 is stopped. Sound with identifier 14 is stopped.
8	STM requests continuous play for sound with identifier 237 and STM requests one shot play for sound with identifier 22	PROF	T0+50s	connection of active DMI channel: Message-S8	DMI		First requested sound with identifier 237 (Message237.wav) is played continuously. Second requested sound with identifier 22 (Double6.wav) is played once
9	STM requests stop sound for sound with identifier 237 and STM requests continuous play for sound with identifier 22	PROF	T0+60s	connection of active DMI channel: Message-S9	DMI		Sound with identifier 237 is stopped. Second requested sound with identifier 22 (Double6.wav) is played continuously



10	STM requests continuous play for sound with identifier 237 and STM requests stop sound for sound with identifier 22	PROF	T0+70s	connection of active DMI channel: Message-S10	DMI		First requested sound with identifier 237 (Message237.wav) is played continuously. Sound with identifier 22 is stopped.
11	STM requests stop sound for sound with identifier 237 and STM requests one shot play for sound with identifier 22	PROF	T0+80s	connection of active DMI channel: Message-S11	DMI		Sound with identifier 237 is stopped. Second requested sound with identifier 22 (Double6.wav) is played once

Message-S1: STM requests one shot play for sound with id 237 and one shot play for sound with id 8			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	13	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	56	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	237	
Q_SOUND(1)	2	1	One shot play
N_ITER(1)	5	0	no sound segments
NID_SOUND(2)	8	8	
Q_SOUND(2)	2	1	One shot play
N_ITER(2)	5	0	no sound segments



Padding bits	7	0000000b	
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Message-S2: STM requests one shot play for sound with id 237 and continuous play for sound with id 14			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	13	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	56	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	237	
Q_SOUND(1)	2	1	One shot play
N_ITER(1)	5	0	no sound segments
NID_SOUND(2)	8	14	
Q_SOUND(2)	2	2	Continuous play
N_ITER(2)	5	0	no sound segments
Padding bits	7	0000000b	

Message-S3: STM requests one shot play for sound with id 237 and stop sound for sound with id 14			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM

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L_MESSAGE	8	13	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	56	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	237	
Q_SOUND(1)	2	1	One shot play
N_ITER(1)	5	0	no sound segments
NID_SOUND(2)	8	14	
Q_SOUND(2)	2	0	Stop sound
N_ITER(2)	5	0	no sound segments
Padding bits	7	0000000b	

Message-S4: STM requests continuous play for sound with id 237 and one shot play for sound with id 22			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	13	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)

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L_PACKET	13	56	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	237	
Q_SOUND(1)	2	2	Continuous play
N_ITER(1)	5	0	no sound segments
NID_SOUND(2)	8	22	
Q_SOUND(2)	2	1	One shot play
N_ITER(2)	5	0	no sound segments
Padding bits	7	0000000b	

Message-S5: STM requests stop sound for sound with id 237 and one shot play for sound with id 30			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	13	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	56	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	237	
Q_SOUND(1)	2	0	Stop sound
N_ITER(1)	5	0	no sound segments

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NID_SOUND(2)	8	30	
Q_SOUND(2)	2	1	One shot play
N_ITER(2)	5	0	no sound segments
Padding bits	7	0000000b	

Message-S6: STM requests continuous play for sound with id 237 and continuous play for sound with id 35			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	13	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	56	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	237	
Q_SOUND(1)	2	2	Continuous play
N_ITER(1)	5	0	no sound segments
NID_SOUND(2)	8	35	
Q_SOUND(2)	2	2	Continuous play
N_ITER(2)	5	0	no sound segments
Padding bits	7	0000000b	



Message-S7: STM requests stop sound for sound with id 237 and stop sound for sound with id 14

VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	13	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	56	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	237	
Q_SOUND(1)	2	0	Stop sound
N_ITER(1)	5	0	no sound segments
NID_SOUND(2)	8	14	
Q_SOUND(2)	2	0	Stop sound
N_ITER(2)	5	0	no sound segments
Padding bits	7	0000000b	

Message-S8: STM requests continuous play for sound with id 237 and one shot play for sound with id 22

VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	13	Message Length
NID_PACKET	8	15	State report from STM (STM-15)



L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	56	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	237	
Q_SOUND(1)	2	2	Continuous play
N_ITER(1)	5	0	no sound segments
NID_SOUND(2)	8	22	
Q_SOUND(2)	2	1	One shot play
N_ITER(2)	5	0	no sound segments
Padding bits	7	0000000b	

Message-S9: STM requests stop sound for sound with id 237 and continuous play for sound with id 22			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	13	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	56	Packet Length
N_ITER	5	2	

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NID_SOUND(1)	8	237	
Q_SOUND(1)	2	0	Stop sound
N_ITER(1)	5	0	no sound segments
NID_SOUND(2)	8	22	
Q_SOUND(2)	2	2	Continuous play
N_ITER(2)	5	0	no sound segments
Padding bits	7	0000000b	

Message-S10: STM requests continuous play for sound with id 237 and stop sound for sound with id 22			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	13	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	56	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	237	
Q_SOUND(1)	2	2	Continuous play
N_ITER(1)	5	0	no sound segments
NID_SOUND(2)	8	22	
Q_SOUND(2)	2	0	Stop sound

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N_ITER(2)	5	0	no sound segments
Padding bits	7	0000000b	

Message-S11: STM requests stop sound for sound with id 237 and one shot play for sound with id 22			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	13	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	56	Packet Length
N_ITER	5	2	
NID_SOUND(1)	8	237	
Q_SOUND(1)	2	0	Stop sound
N_ITER(1)	5	0	no sound segments
NID_SOUND(2)	8	22	
Q_SOUND(2)	2	1	One shot play
N_ITER(2)	5	0	no sound segments
Padding bits	7	0000000b	



2.5.32 Test Case 7e.32

TEST CASE HEADER	
Test case identification	DMI Function
	7e1.0.4.(7e3.0.2.1.0.1.0.0).1.(7e3.0.2.1.0.2.0.0).1.(7e3.0.2.1.0.3.0.0.0).1. (7e3.0.2.2.0.1.0.0).1.(7e3.0.2.3.0.0.1.0.0).1.(7e3.0.2.2.0.2.0.0).1. (7e3.0.2.3.0.0.3.0.0.0).1.(7e3.0.2.2.0.1.0.0).1.(7e3.0.2.3.0.0.2.0.0).1. (7e3.0.2.2.0.3.0.0.0).1.(7e3.0.2.3.0.0.1.0.0).2
	Sound test for customisable DMI service for configuration 7a.9, DMI configuration for other STMs, with 2 sound requests at once.: Requests for two sounds are made with all possible combinations of Q_SOUND for selected sounds.
	Same test steps and messages as in test case 7e.31
ERTMS/ETCS on-board requirements tested	SUBSET-035 13.4.1.1, 13.4.1.2, 13.4.1.7, 13.4.1.8, 13.4.5.2, 13.4.5.3, 13.4.5.4
	ERA ERTMS 015560 (DMI Spec) 9.3.6
STM requirements tested	
Packets transmitted via FFFIS STM	STM-15, STM-46
ERTMS/ETCS on-board configuration	For active STM: customisable DMI service: 7a.9 DMI configuration 7a.3, 7a.5, 7a.6, 7a.7, 7a.8 or 7a.9 for at least one other STM
Comments and constraints	Starting and end conditions as for test case 7e.29

2.5.33 Test Case 7e.33

TEST CASE HEADER	
Test case identification	DMI Function



	7e1.0.1.(7e2.0.1.2.1.0).1.(7e2.0.1.1.1.0).1.(7e2.0.1.2.1.0).1.(7e2.0.1.3.0.1.0).1.(7e2.0.1.2.1.0).1.(7e2.0.1.3.0.1.0).1.(7e2.0.1.3.0.1.0).2
	Sound test for unified DMI, no DMI configuration for other STMs, with 2 sounds played at the same time using single sound requests: The STM requests continuous play for the first sound. Then it requests for the second sound one shot play, continuous play and stop. Finally it requests continuous play for a third sound, stops the first sound and at the end stops the third sound.
ERTMS/ETCS on-board requirements tested	SUBSET-035 13.4.1.1, 13.4.1.2, 13.4.1.8, 13.4.5.3, 13.4.5.4
	ERA ERTMS 015560 (DMI Spec) 9.3.6
STM requirements tested	
Packets transmitted via FFFIS STM	STM-15, STM-46
ERTMS/ETCS on-board configuration	For active STM: Unified DMI service: 7a.1. No DMI configuration for any other STM
Comments and constraints	

Starting Conditions	Value	Comments
STM State	DA	
ETCS Mode	SN	
ETCS Level	NTC	
Train State	not relevant	
ETCS Train Data	not relevant	
Active DMI channel Connection	Established	
Other DMI channels Connections	not relevant	
TIU Connection	not relevant	



BIU Connection	not relevant	
JD Connection	not relevant	
TIU Regenerative Brake Command	not relevant	
TIU Magnetic Shoes Brake Command	not relevant	
TIU Eddy Current Brake Command for Emergency Brake	not relevant	
TIU Eddy Current Brake Command for Service Brake	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 Traction Status	not relevant	
TIU Direction Controller Position Status	not relevant	
TIU Cab Status	Cab A or B active	For the test it is not relevant, what cab is active
BIU Emergency Brake Command	not relevant	
BIU Service Brake Command	not relevant	
BIU Emergency Brake Status	not relevant	
BIU Service Brake Status	not relevant	
NTC isolation status	Not isolated for active STM. Not relevant for other STMs	

ERTMS/ETCS on-board Test Case

Step	Description/Comments	Input I/F	Input time	Input Action	Output I/F	Output time limit	Output action
1	STM requests continuous play for	PROF	T0	connection of active DMI channel:	DMI		Requested sound with identifier 47

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	sound with identifier 47 with 7 segments (256, 288, 320, 352, 384, 448, 480 Hz)			Message-S1			is played continuously until stop.
2	STM requests one shot play for sound with identifier 11 with 7 segments (128, 640, 1152, 1664, 2176, 2688, 3200 Hz)	PROF	T0+10s	connection of active DMI channel: Message-S2	DMI		Requested sound with identifier 11 is played once.
3	STM requests continuous play for sound with identifier 11 with 7 segments (128, 640, 1152, 1664, 2176, 2688, 3200 Hz)	PROF	T0+15s	connection of active DMI channel: Message-S3	DMI		Requested sound with identifier 11 is played continuously until stop.
4	STM requests stop sound for sound with identifier 11	PROF	T0+25s	connection of active DMI channel: Message-S4	DMI		Sound with identifier 11 is stopped.
5	STM requests continuous play for sound with identifier 88 with 7 segments (512, 256, 0, 512, 256, 0, 512 Hz)	PROF	T0+30s	connection of active DMI channel: Message-S5	DMI		Requested sound with identifier 88 is played continuously until stop.
6	STM requests stop sound for sound with identifier 47	PROF	T0+40s	connection of active DMI channel: Message-S6	DMI		Sound with identifier 47 is stopped.
7	STM requests stop sound for sound with identifier 88	PROF	T0+45s	connection of active DMI channel: Message-S7	DMI		Sound with identifier 88 is stopped.

Message-S1: STM requests continuous play for sound 1 with identifier 47			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	25	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA



NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	153	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	47	
Q_SOUND(1)	2	2	Continuous play
N_ITER(1)	5	7	7 segments
M_FREQ(1,1)	8	8	256Hz
T_SOUND(1,1)	8	5	500ms
M_FREQ(1,2)	8	9	288Hz
T_SOUND(1,2)	8	5	500ms
M_FREQ(1,3)	8	10	320Hz
T_SOUND(1,3)	8	5	500ms
M_FREQ(1,4)	8	11	352Hz
T_SOUND(1,4)	8	5	500ms
M_FREQ(1,5)	8	12	384Hz
T_SOUND(1,5)	8	5	500ms
M_FREQ(1,6)	8	14	448Hz
T_SOUND(1,6)	8	5	500ms
M_FREQ(1,7)	8	15	480Hz
T_SOUND(1,7)	8	5	500ms
Padding bits	6	000000b	

Message-S2: STM requests one shot play for sound 2 with identifier 11



VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	25	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	153	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	11	
Q_SOUND(1)	2	1	One shot play
N_ITER(1)	5	7	7 segments
M_FREQ(1,1)	8	4	128Hz
T_SOUND(1,1)	8	5	500ms
M_FREQ(1,2)	8	20	640Hz
T_SOUND(1,2)	8	5	500ms
M_FREQ(1,3)	8	36	1152Hz
T_SOUND(1,3)	8	5	500ms
M_FREQ(1,4)	8	52	1664Hz
T_SOUND(1,4)	8	5	500ms
M_FREQ(1,5)	8	68	2176Hz
T_SOUND(1,5)	8	5	500ms
M_FREQ(1,6)	8	84	2688Hz



T_SOUND(1,6)	8	5	500ms
M_FREQ(1,7)	8	100	3200Hz
T_SOUND(1,7)	8	5	500ms
Padding bits	6	000000b	

Message-S3: STM requests continuous play for sound 2 with identifier 11			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	25	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	153	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	11	
Q_SOUND(1)	2	2	Continuous play
N_ITER(1)	5	7	7 segments
M_FREQ(1,1)	8	4	128Hz
T_SOUND(1,1)	8	5	500ms
M_FREQ(1,2)	8	20	640Hz
T_SOUND(1,2)	8	5	500ms
M_FREQ(1,3)	8	36	1152Hz

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T_SOUND(1,3)	8	5	500ms
M_FREQ(1,4)	8	52	1664Hz
T_SOUND(1,4)	8	5	500ms
M_FREQ(1,5)	8	68	2176Hz
T_SOUND(1,5)	8	5	500ms
M_FREQ(1,6)	8	84	2688Hz
T_SOUND(1,6)	8	5	500ms
M_FREQ(1,7)	8	100	3200Hz
T_SOUND(1,7)	8	5	500ms
Padding bits	6	000000b	

Message-S4: STM requests stop sound for sound 2 with identifier 11			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	11	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	41	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	11	
Q_SOUND(1)	2	0	Stop sound



N_ITER(1)	5	0	no sound segments
Padding bits	6	000000b	

Message-S5: STM requests continuous play for sound 3 with identifier 88			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	25	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	153	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	88	
Q_SOUND(1)	2	2	Continuous play
N_ITER(1)	5	7	7 segments
M_FREQ(1,1)	8	16	512Hz
T_SOUND(1,1)	8	5	500ms
M_FREQ(1,2)	8	8	256Hz
T_SOUND(1,2)	8	5	500ms
M_FREQ(1,3)	8	0	Silence
T_SOUND(1,3)	8	5	500ms
M_FREQ(1,4)	8	16	512Hz

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T_SOUND(1,4)	8	5	500ms
M_FREQ(1,5)	8	8	256Hz
T_SOUND(1,5)	8	5	500ms
M_FREQ(1,6)	8	0	Silence
T_SOUND(1,6)	8	5	500ms
M_FREQ(1,7)	8	16	512Hz
T_SOUND(1,7)	8	5	500ms
Padding bits	6	000000b	

Message-S6: STM requests stop sound for sound 1 with identifier 47			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	11	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	41	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	47	
Q_SOUND(1)	2	0	Stop sound
N_ITER(1)	5	0	no sound segments
Padding bits	6	000000b	



Message-S7: STM requests stop sound for sound 3 with identifier 88			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	11	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	41	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	88	
Q_SOUND(1)	2	0	Stop sound
N_ITER(1)	5	0	no sound segments
Padding bits	6	000000b	

End Conditions	Value	Comments
STM State	unchanged	
ETCS Mode	unchanged	
ETCS Level	unchanged	
Train State	not relevant	
ETCS Train Data	not relevant	
Active DMI channel Connection	unchanged	

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Other DMI channels Connections	not relevant	
TIU Connection	not relevant	
BIU Connection	not relevant	
JD Connection	not relevant	
TIU Regenerative Brake Command	not relevant	
TIU Magnetic Shoes Brake Command	not relevant	
TIU Eddy Current Brake Command for Emergency Brake	not relevant	
TIU Eddy Current Brake Command for Service Brake	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 Traction Status	not relevant	
TIU Direction Controller Position Status	not relevant	
TIU Cab Status	unchanged	
BIU Emergency Brake Command	not relevant	
BIU Service Brake Command	not relevant	
BIU Emergency Brake Status	not relevant	
BIU Service Brake Status	not relevant	
NTC isolation status	unchanged	



2.5.34 Test Case 7e.34

TEST CASE HEADER	
Test case identification	DMI Function
	7e1.0.2.(7e2.0.1.2.1.0).1.(7e2.0.1.1.1.0).1.(7e2.0.1.2.1.0).1.(7e2.0.1.3.0.1.0).1.(7e2.0.1.2.1.0).1.(7e2.0.1.3.0.1.0).1.(7e2.0.1.3.0.1.0).2
	Sound test for unified DMI, DMI configuration for other STMs, with 2 sounds played at the same time using single sound requests: The STM requests continuous play for the first sound. Then it requests for the second sound one shot play, continuous play and stop. Finally it requests continuous play for a third sound, stops the first sound and at the end stops the third sound. Same test steps and messages as in test case 7e.33
ERTMS/ETCS on-board requirements tested	SUBSET-035 13.4.1.1, 13.4.1.2, 13.4.1.8, 13.4.5.3, 13.4.5.4
	ERA ERTMS 015560 (DMI Spec) 9.3.6
STM requirements tested	
Packets transmitted via FFFIS STM	STM-15, STM-46
ERTMS/ETCS on-board configuration	For active STM: Unified DMI service: 7a.1. DMI configuration 7a.3, 7a.5, 7a.6, 7a.7, 7a.8 or 7a.9 for at least one other STM
Comments and constraints	Starting and end conditions as for test case 7e.33

2.5.35 Test Case 7e.35

TEST CASE HEADER	
Test case identification	DMI Function
	7e1.0.3.(7e3.0.1.2.1.0).1.(7e3.0.1.1.1.0).1.(7e3.0.1.2.1.0).1.(7e3.0.1.3.0.1.0).1.(7e3.0.1.2.1.0).1.(7e3.0.1.3.0.1.0).1.(7e3.0.1.3.0.1.0).2



	<p>Sound test for customisable DMI, configurations 7a.3, 7a.5, 7a.6 and 7a.7, no DMI configuration for other STMs, with 2 sounds played at the same time using single sound requests:</p> <p>The STM requests continuous play for the first sound. Then it requests for the second sound one shot play, continuous play and stop. Finally it requests continuous play for the second sound, stops the first sound and at the end stops the second sound.</p>
ERTMS/ETCS on-board requirements tested	SUBSET-035 13.4.1.1, 13.4.1.2, 13.4.1.7, 13.4.1.8, 13.4.5.2, 13.4.5.3, 13.4.5.4
	ERA ERTMS 015560 (DMI Spec) 9.3.6
STM requirements tested	
Packets transmitted via FFFIS STM	STM-15, STM-46
ERTMS/ETCS on-board configuration	<p>For active STM: customisable DMI service: 7a.3, 7a.5, 7a.6, 7a.7 (one configuration shall be chosen for test).</p> <p>No DMI configuration for any other STM</p>
Comments and constraints	

ERTMS/ETCS on-board Test Case

Step	Description/Comments	Input I/F	Input time	Input Action	Output I/F	Output time limit	Output action
1	STM requests continuous play for sound with identifier 1	PROF	T0	connection of active DMI channel: Message-S1	DMI		Requested sound with identifier 1 (S1_toofast.wav) is played continuously until stop.
2	STM requests one shot play for sound with identifier 2	PROF	T0+10s	connection of active DMI channel: Message-S2	DMI		Requested sound with identifier 2 (S2_warning.wav) is played once.
3	STM requests continuous play for sound with identifier 2	PROF	T0+15s	connection of active DMI channel: Message-S3	DMI		Requested sound with identifier 2 (S2_warning.wav) is played continuously until stop.
4	STM requests stop sound for sound with identifier 2	PROF	T0+25s	connection of active DMI channel: Message-S4	DMI		Sound with identifier 2 is stopped.
5	STM requests continuous play for sound with identifier 2	PROF	T0+30s	connection of active DMI channel: Message-S5	DMI		Requested sound with identifier 2 (S2_warning.wav) is played

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							continuously until stop.
6	STM requests stop sound for sound with identifier 1	PROF	T0+40s	connection of active DMI channel: Message-S6	DMI		Sound with identifier 1 is stopped.
7	STM requests stop sound for sound with identifier 2	PROF	T0+45s	connection of active DMI channel: Message-S7	DMI		Sound with identifier 2 is stopped.

Message-S1: STM requests continuous play for sound with identifier 1			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	11	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	41	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	1	
Q_SOUND(1)	2	2	Continuous play
N_ITER(1)	5	0	no sound segments
Padding bits	6	000000b	

Message-S2: STM requests one shot play for sound with identifier 2			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM



L_MESSAGE	8	11	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	41	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	2	
Q_SOUND(1)	2	1	One shot play
N_ITER(1)	5	0	no sound segments
Padding bits	6	000000b	

Message-S3: STM requests continuous play for sound with identifier 2			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	11	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	41	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	2	



Q_SOUND(1)	2	2	Continuous play
N_ITER(1)	5	0	no sound segments
Padding bits	6	000000b	

Message-S4: STM requests stop sound for sound with identifier 2			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	11	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	41	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	2	
Q_SOUND(1)	2	0	Stop sound
N_ITER(1)	5	0	no sound segments
Padding bits	6	000000b	

Message-S5: STM requests continuous play for sound with identifier 2			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	11	Message Length

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NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	41	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	2	
Q_SOUND(1)	2	2	Continuous play
N_ITER(1)	5	0	no sound segments
Padding bits	6	000000b	

Message-S6: STM requests stop sound for sound with identifier 1			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	11	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	41	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	1	
Q_SOUND(1)	2	0	Stop sound



N_ITER(1)	5	0	no sound segments
Padding bits	6	000000b	

Message-S7: STM requests stop sound for sound with identifier 2			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	11	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	41	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	2	
Q_SOUND(1)	2	0	Stop sound
N_ITER(1)	5	0	no sound segments
Padding bits	6	000000b	

2.5.36 Test Case 7e.36

TEST CASE HEADER	
Test case identification	DMI Function
	7e1.0.4.(7e3.0.1.2.1.0).1.(7e3.0.1.1.1.0).1.(7e3.0.1.2.1.0).1.(7e3.0.1.3.0.1.0).1.(7e3.0.1.2.1.0).1.(7e3.0.1.3.0.1.0).1.(7e3.0.1.3.0.1.0).



	0).2
	<p>Sound test for customisable DMI, configurations 7a.3, 7a.5, 7a.6 and 7a.7, DMI configuration for other STMs, with 2 sounds played at the same time using single sound requests:</p> <p>The STM requests continuous play for the first sound. Then it requests for the second sound one shot play, continuous play and stop. Finally it requests continuous play for the second sound, stops the first sound and at the end stops the second sound.</p> <p>Same test steps and messages as in test case 7e.35</p>
ERTMS/ETCS on-board requirements tested	SUBSET-035 13.4.1.1, 13.4.1.2, 13.4.1.7, 13.4.1.8, 13.4.5.2, 13.4.5.3, 13.4.5.4
	ERA ERTMS 015560 (DMI Spec) 9.3.6
STM requirements tested	
Packets transmitted via FFFIS STM	STM-15, STM-46
ERTMS/ETCS on-board configuration	<p>For active STM: customisable DMI service: 7a.3, 7a.5, 7a.6, 7a.7 (one configuration shall be chosen for test).</p> <p>DMI configuration 7a.3, 7a.5, 7a.6, 7a.7, 7a.8 or 7a.9 for at least one other STM</p>
Comments and constraints	Starting and end conditions as for test case 7e.35

2.5.37 Test Case 7e.37

TEST CASE HEADER	
Test case identification	DMI Function
	7e1.0.3.(7e3.0.1.2.1.0).1.(7e3.0.1.1.1.0).1.(7e3.0.1.2.1.0).1.(7e3.0.1.3.0.1.0).1.(7e3.0.1.2.1.0).1.(7e3.0.1.3.0.1.0).1.(7e3.0.1.3.0.1.0).2
	<p>Sound test for customisable DMI, configuration 7a.8, no DMI configuration for other STMs, with 2 sounds played at the same time using single sound requests:</p> <p>The STM requests continuous play for the first sound. Then it requests for the second sound one shot play, continuous play and stop. Finally it requests continuous play for the second sound, stops the first sound and at the end stops the second sound.</p>
ERTMS/ETCS on-board	SUBSET-035 13.4.1.1, 13.4.1.2, 13.4.1.7, 13.4.1.8, 13.4.5.2, 13.4.5.3, 13.4.5.4



requirements tested	
	ERA ERTMS 015560 (DMI Spec) 9.3.6
STM requirements tested	
Packets transmitted via FFFIS STM	STM-15, STM-46
ERTMS/ETCS on-board configuration	For active STM: customisable DMI service: 7a.8. No DMI configuration for any other STM
Comments and constraints	

ERTMS/ETCS on-board Test Case

Step	Description/Comments	Input I/F	Input time	Input Action	Output I/F	Output time limit	Output action
1	STM requests continuous play for sound with identifier 3	PROF	T0	connection of active DMI channel: Message-S1	DMI		Requested sound with identifier 3 (Pressuresensorfailure.wav) is played continuously until stop.
2	STM requests one shot play for sound with identifier 4	PROF	T0+10s	connection of active DMI channel: Message-S2	DMI		Requested sound with identifier 4 (SBfailure.wav) is played once.
3	STM requests continuous play for sound with identifier 4	PROF	T0+15s	connection of active DMI channel: Message-S3	DMI		Requested sound with identifier 4 (SBfailure.wav) is played continuously until stop.
4	STM requests stop sound for sound with identifier 4	PROF	T0+25s	connection of active DMI channel: Message-S4	DMI		Sound with identifier 4 is stopped.
5	STM requests continuous play for sound with identifier 5	PROF	T0+30s	connection of active DMI channel: Message-S5	DMI		Requested sound with identifier 5 (EBfailure.wav) is played continuously until stop.
6	STM requests stop sound for sound with identifier 3	PROF	T0+40s	connection of active DMI channel: Message-S6	DMI		Sound with identifier 3 is stopped.
7	STM requests stop sound for sound with identifier 5	PROF	T0+45s	connection of active DMI channel: Message-S7	DMI		Sound with identifier 5 is stopped.

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Message-S1: STM requests continuous play for sound with identifier 3			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	11	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	41	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	3	
Q_SOUND(1)	2	2	Continuous play
N_ITER(1)	5	0	no sound segments
Padding bits	6	000000b	

Message-S2: STM requests one shot play for sound with identifier 4			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	11	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA



NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	41	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	4	
Q_SOUND(1)	2	1	One shot play
N_ITER(1)	5	0	no sound segments
Padding bits	6	000000b	

Message-S3: STM requests continuous play for sound with identifier 4			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	11	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	41	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	4	
Q_SOUND(1)	2	2	Continuous play
N_ITER(1)	5	0	no sound segments
Padding bits	6	000000b	



Message-S4: STM requests stop sound for sound with identifier 4			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	11	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	41	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	4	
Q_SOUND(1)	2	0	Stop sound
N_ITER(1)	5	0	no sound segments
Padding bits	6	000000b	

Message-S5: STM requests continuous play for sound with identifier 5			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	11	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)

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L_PACKET	13	41	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	5	
Q_SOUND(1)	2	2	Continuous play
N_ITER(1)	5	0	no sound segments
Padding bits	6	000000b	

Message-S6: STM requests stop sound for sound with identifier 3			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	11	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	41	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	3	
Q_SOUND(1)	2	0	Stop sound
N_ITER(1)	5	0	no sound segments
Padding bits	6	000000b	

Message-S7: STM requests stop sound for sound with identifier 5

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VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	11	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	41	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	5	
Q_SOUND(1)	2	0	Stop sound
N_ITER(1)	5	0	no sound segments
Padding bits	6	000000b	

2.5.38 Test Case 7e.38

TEST CASE HEADER	
Test case identification	DMI Function
	7e1.0.4.(7e3.0.1.2.1.0).1.(7e3.0.1.1.1.0).1.(7e3.0.1.2.1.0).1.(7e3.0.1.3.0.1.0).1.(7e3.0.1.2.1.0).1.(7e3.0.1.3.0.1.0).1.(7e3.0.1.3.0.1.0).2
	<p>Sound test for customisable DMI, configuration 7a.8, DMI configuration for other STMs, with 2 sounds played at the same time using single sound requests:</p> <p>The STM requests continuous play for the first sound. Then it requests for the second sound one shot play, continuous play and stop. Finally it requests continuous play for the second sound, stops the first sound and at the end stops the second sound.</p>



	Same test steps and messages as in test case 7e.37
ERTMS/ETCS on-board requirements tested	SUBSET-035 13.4.1.1, 13.4.1.2, 13.4.1.7, 13.4.1.8, 13.4.5.2, 13.4.5.3, 13.4.5.4
	ERA ERTMS 015560 (DMI Spec) 9.3.6
STM requirements tested	
Packets transmitted via FFFIS STM	STM-15, STM-46
ERTMS/ETCS on-board configuration	For active STM: customisable DMI service: 7a.8. DMI configuration 7a.3, 7a.5, 7a.6, 7a.7, 7a.8 or 7a.9 for at least one other STM
Comments and constraints	Starting and end conditions as for test case 7e.37

2.5.39 Test Case 7e.39

TEST CASE HEADER	
Test case identification	DMI Function
	7e1.0.3.(7e3.0.1.2.1.0).1.(7e3.0.1.1.1.0).1.(7e3.0.1.2.1.0).1.(7e3.0.1.3.0.1.0).1.(7e3.0.1.2.1.0).1.(7e3.0.1.3.0.1.0).2
	Sound test for customisable DMI, configuration 7a.9, no DMI configuration for other STMs, with 2 sounds played at the same time using single sound requests: The STM requests continuous play for the first sound. Then it requests for the second sound one shot play, continuous play and stop. Finally it requests continuous play for the second sound, stops the first sound and at the end stops the second sound.
ERTMS/ETCS on-board requirements tested	SUBSET-035 13.4.1.1, 13.4.1.2, 13.4.1.7, 13.4.1.8, 13.4.5.2, 13.4.5.3, 13.4.5.4
	ERA ERTMS 015560 (DMI Spec) 9.3.6
STM requirements tested	
Packets transmitted via FFFIS	STM-15, STM-46



STM	
ERTMS/ETCS on-board configuration	For active STM: customisable DMI service: 7a.9. No DMI configuration for any other STM
Comments and constraints	

ERTMS/ETCS on-board Test Case

Step	Description/Comments	Input I/F	Input time	Input Action	Output I/F	Output time limit	Output action
1	STM requests continuous play for sound with identifier 27	PROF	T0	connection of active DMI channel: Message-S1	DMI		Requested sound with identifier 27 (Triple3.wav) is played continuously until stop.
2	STM requests one shot play for sound with identifier 100	PROF	T0+10s	connection of active DMI channel: Message-S2	DMI		Requested sound with identifier 100 (Message100.wav) is played once.
3	STM requests continuous play for sound with identifier 100	PROF	T0+15s	connection of active DMI channel: Message-S3	DMI		Requested sound with identifier 100 (Message100.wav) is played continuously until stop.
4	STM requests stop sound for sound with identifier 100	PROF	T0+25s	connection of active DMI channel: Message-S4	DMI		Sound with identifier 100 is stopped.
5	STM requests continuous play for sound with identifier 1	PROF	T0+30s	connection of active DMI channel: Message-S5	DMI		Requested sound with identifier 1 (S1_toofast.wav) is played continuously until stop.
6	STM requests stop sound for sound with identifier 27	PROF	T0+40s	connection of active DMI channel: Message-S6	DMI		Sound with identifier 27 is stopped.
7	STM requests stop sound for sound with identifier 1	PROF	T0+45s	connection of active DMI channel: Message-S7	DMI		Sound with identifier 1 is stopped.

Message-S1: STM requests continuous play for sound with identifier 27			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM



L_MESSAGE	8	11	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	41	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	27	
Q_SOUND(1)	2	2	Continuous play
N_ITER(1)	5	0	no sound segments
Padding bits	6	000000b	

Message-S2: STM requests one shot play for sound with identifier 100			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	11	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	41	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	100	



Q_SOUND(1)	2	1	One shot play
N_ITER(1)	5	0	no sound segments
Padding bits	6	000000b	

Message-S3: STM requests continuous play for sound with identifier 100			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	11	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	41	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	100	
Q_SOUND(1)	2	2	Continuous play
N_ITER(1)	5	0	no sound segments
Padding bits	6	000000b	

Message-S4: STM requests stop sound for sound with identifier 100			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	11	Message Length

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NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	41	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	100	
Q_SOUND(1)	2	0	Stop sound
N_ITER(1)	5	0	no sound segments
Padding bits	6	000000b	

Message-S5: STM requests continuous play for sound with identifier 1			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	11	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	41	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	1	
Q_SOUND(1)	2	2	Continuous play



N_ITER(1)	5	0	no sound segments
Padding bits	6	000000b	

Message-S6: STM requests stop sound for sound with identifier 27			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	11	Message Length
NID_PACKET	8	15	State report from STM (STM-15)
L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	41	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	27	
Q_SOUND(1)	2	0	Stop sound
N_ITER(1)	5	0	no sound segments
Padding bits	6	000000b	

Message-S7: STM requests stop sound for sound with identifier 1			
VARIABLE	Length	VALUE	COMMENT
NID_STM	8	FINITE_VALUE	NID_STM of the active STM
L_MESSAGE	8	11	Message Length
NID_PACKET	8	15	State report from STM (STM-15)

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L_PACKET	13	25	Packet Length
NID_STMSTATE	4	7	State DA
NID_PACKET	8	46	Sound command from STM (STM-46)
L_PACKET	13	41	Packet Length
N_ITER	5	1	
NID_SOUND(1)	8	1	
Q_SOUND(1)	2	0	Stop sound
N_ITER(1)	5	0	no sound segments
Padding bits	6	000000b	

2.5.40 Test Case 7e.40

TEST CASE HEADER	
Test case identification	DMI Function
	7e1.0.4.(7e3.0.1.2.1.0).1.(7e3.0.1.1.1.0).1.(7e3.0.1.2.1.0).1.(7e3.0.1.3.0.1.0).1.(7e3.0.1.2.1.0).1.(7e3.0.1.3.0.1.0).1.(7e3.0.1.3.0.1.0).2
	Sound test for customisable DMI, configuration 7a.9, DMI configuration for other STMs, with 2 sounds played at the same time using single sound requests:
	The STM requests continuous play for the first sound. Then it requests for the second sound one shot play, continuous play and stop. Finally it requests continuous play for the second sound, stops the first sound and at the end stops the second sound. Same test steps and messages as in test case 7e.39
ERTMS/ETCS on-board requirements tested	SUBSET-035 13.4.1.1, 13.4.1.2, 13.4.1.7, 13.4.1.8, 13.4.5.2, 13.4.5.3, 13.4.5.4
	ERA ERTMS 015560 (DMI Spec) 9.3.6
STM requirements tested	



Packets transmitted via FFFIS STM	STM-15, STM-46
ERTMS/ETCS on-board configuration	For active STM: customisable DMI service: 7a.9. DMI configuration 7a.3, 7a.5, 7a.6, 7a.7, 7a.8 or 7a.9 for at least one other STM
Comments and constraints	Starting and end conditions as for test case 7e.39