

<b>ERTMS/ETCS – Class 1</b>
<b>FIS for the Man-Machine Interface</b>
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ADTRANZ		
ALCATEL		
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INVENSYS RAIL		
SIEMENS		

# 1. MODIFICATION HISTORY

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## **3. INTRODUCTION**

### **3.1 Scope**

- 3.1.1.1 The present document defines the FIS of the interface between the On-board equipment and the ERTMS/ETCS Driver (MMI) for Class 1. The acronym is 'MMI\_FIS'.
- 3.1.1.2 The FIS complies with the definition given by the document 'UNISIG Documentation Plan for Class 1', ref. SUBSET-022.

### **3.2 References**

- 3.2.1.1 UNISIG : SUBSET-026-2, SRS Chapter 2 Basic system description, issue 2.0.0 (99-12-22)
- 3.2.1.2 UNISIG: SUBSET-026-3, SRS Chapter 3 Principles, issue 2.0.0 (99-12-22).
- 3.2.1.3 UNISIG: SUBSET-026-4, SRS Chapter 4 Modes and transitions, issue 2.0.0 (99-12-22).
- 3.2.1.4 UNISIG: SUBSET-026-5, SRS Chapter 5 Procedures, issue 2.0.0 (99-12-22).
- 3.2.1.5 UNISIG : SUBSET-026-7, SRS Chapter 7 ERTMS/ETCS language, issue 2.0.0 (99-12-22)

### **3.3 Presentation**

- 3.3.1.1 The section 4 of the document identifies the variables.
- 3.3.1.2 A variable used as input means that this information is made available by the interface to the on-board equipment, a variable used as output means that this information is made available by the interface to the driver under appropriate circumstances (as defined in SRS § 4.7.2 "MMI depending on the modes").
- 3.3.1.3 As system performance for the MMI is not addressed in Class 1, the required performances (time, safety...) for the MMI are defined separately.

### **3.4 Assumptions**

- 3.4.1.1 The ERTMS/ETCS MMI does not include devices providing the state of the direction controller (Forward, Neutral, Reverse). This data is part of the TIU\_FIS.
- 3.4.1.2 The ERTMS/ETCS MMI does not include device to release the brakes. The brake control shall be considered to be external to the MMI.

### **3.5 MMI Principles**

- 3.5.1.1 Types of MMI data are 'Boolean', 'Numeric', 'Alphanumeric' or specific (ex. adhesion classes).
- 3.5.1.2 Predefined Text Message (alphanumeric) are defined. (See §4.2.6.2)

### **3.6 Editing considerations**

- 3.6.1.1 For 'Numeric' types, the length is defined in digits, the value of the least significant digit is given in unit (ex. 0,1 s)

## 4. VARIABLES

### 4.1 Input variables (from driver to on-board equipment)

#### 4.1.1 Data Entry Request

4.1.1.1 Data Entry Request (SRS 3.19.1.2, 4.7.2, 5.4.3.5 )

<b>Name</b>	Data Entry Request
<b>Description</b>	Data Entry request by the driver
<b>Data Characteristics</b>	Boolean
<b>Values</b>	True : Data Entry is requested False : Data Entry is NOT requested

#### 4.1.2 Train Data

4.1.2.1 Maximum Train Speed (SRS 2.6.3.1, 2.6.4.1, 3.18.3.5, 4.7.2, 4.5.2.1, 5.4.3.6, 5.14.2, 5.14.3)

<b>Name</b>	Maximum Train Speed
<b>Description</b>	
<b>Data Characteristics</b>	Numeric 3 digits 5 km/h
<b>Values</b>	Maximum value : 600km/H

4.1.2.2 International Train category (SRS 2.6.3.1, 2.6.4.1, 3.18.3.5, 4.7.2, 4.5.2.1, 5.4.3.6, 5.14.2, 5.14.3)

<b>Name</b>	International Train category
<b>Description</b>	Variable NC_TRAIN, SRS § 7.5.1.81
<b>Data Characteristics</b>	<p>Train category used for the static speed profile calculation.</p> <p>Thanks to NC_TRAIN, the train knows the SSP it must obey. by receiving a list of static speed profile, thanks to NC_TRAIN, the train can select the SSP it must obey.</p> <p>Each bit represents one category.</p> <p>A train can belong to various categories.</p>

<b>Special/Reserved Values</b>	000 0000 0000 0000	Basic static speed profile
	Xxx xxxx xxxx xxx1	Active tilting SSP
	Xxx xxxx xxxx xx1x	Passive tilting SSP
	Xxx xxxx xxxx x1xx	Cross wind sensitivity
	Xxx xxxx xxx 1xxx	Spare
	Xxx xxxx xxx1 xxxx	Spare
	Xxx xxxx xx1x xxxx	Spare
	Xxx xxxx x1xx xxxx	Spare
	Xxx xxxx 1xxx xxxx	Spare
	Xxx xxx1 xxxx xxxx	Spare
	Xxx xx1x xxxx xxxx	Spare
	Xxx x1xx xxxx xxxx	Spare
	Xxx 1xxx xxxx xxxx	Spare
	Xx1 xxxx xxxx xxxx	Spare
	X1x xxxx xxxx xxxx	Spare
1xx xxxx xxxx xxxx	Spare	

4.1.2.3 Train length (SRS 2.6.3.1, 2.6.4.1, 3.18.3.5, 4.7.2, 4.5.2.1, 5.4.3.6, 5.14.2, 5.14.3)

<b>Name</b>	Train length	
<b>Description</b>	Variable L_TRAIN, SRS § 7.5.1.52	
<b>Data Characteristics</b>	Numeric 4 digits 1 m	
<b>Values</b>	Minimum value : 0 Maximum value : 4094	
<b>Special/Reserved Values</b>	4095	Unknown

4.1.2.4 Service brake Deceleration Capacity (SRS 3.13.3.15)

<b>Name</b>	Service brake Deceleration Capacity	
<b>Description</b>	Service brake model (train specific), composed of one or several (Speed, Acceleration) sections, refer to SRS § 3.13.3.15.	
<b>Data Characteristics</b>	Numeric Speed : 3 digits 1 km/h Acceleration : 3 digits 0,01 m/s <sup>2</sup>	
<b>Values</b>	Maximum value for the acceleration : tbd	

4.1.2.5 Emergency brake Deceleration Capacity (SRS 3.13.3.15)

<b>Name</b>	Emergency brake Deceleration Capacity	
<b>Description</b>	Emergency brake model (train specific), composed of one or several (Speed, Acceleration) sections, refer to SRS § 3.13.3.15.	
<b>Data Characteristics</b>	Numeric Speed : 3 digits 1 km/h Acceleration : 3 digits 0,01 m/s <sup>2</sup>	
<b>Values</b>	Maximum value : tbd	



4.1.2.6 Time to cut-off traction (SRS 2.6.3.1, 2.6.4.1, 3.18.3.5, 4.7.2, 4.5.2.1, 5.4.3.6, 5.14.2, 5.14.3)

<b>Name</b>	Time to cut-off traction
<b>Description</b>	Time to cut-off traction (used for braking model, train specific)
<b>Data Characteristics</b>	Numeric
<b>Values</b>	Maximum value : tbd

4.1.2.7 Brake delay time (SRS 2.6.3.1, 2.6.4.1, 3.18.3.5, 4.7.2, 4.5.2.1, 5.4.3.6, 5.14.2, 5.14.3)

<b>Name</b>	Brake delay time
<b>Description</b>	Brake delay time (used for braking model, train specific)
<b>Data Characteristics</b>	Numeric
<b>Values</b>	Maximum value : tbd

4.1.2.8 Loading gauge (SRS 2.6.3.1, 2.6.4.1, 3.18.3.5, 4.7.2, 4.5.2.1, 5.4.3.6, 5.14.2, 5.14.3)

<b>Name</b>	Load profile
<b>Description</b>	Define the loading gauge profile
<b>Data Characteristics</b>	Numeric 1 digit
<b>Values</b>	0, 1, 2, 3

## 4.1.2.9 Axle load (SRS 2.6.3.1, 2.6.4.1, 3.18.3.5, 4.7.2, 4.5.2.1, 5.4.3.6, 5.14.2, 5.14.3)

<b>Name</b>	Axle load
<b>Description</b>	Current axle load of the train
<b>Data Characteristics</b>	Numeric 3 digits Resolution: 0.5 t
<b>Values</b>	Maximum value : 40 t

## 4.1.2.10 Power supply accepted by the train (SRS 3.18.3, 4.7.2, 7.5.1.74)

<b>Name</b>	Type of traction system accepted by the train.
<b>Description</b>	Type of traction system accepted by the train (refer to variable M_TRACTION SRS 7.5.1.74).
<b>Data Characteristics</b>	Numeric 8 bits
<b>Values</b>	Maximum value : tbd

## 4.1.3 Additional Data

## 4.1.3.1 Driver Identity number (SRS 3.18.3.3, 3.18.4, 4.7.2, 5.4.2.1, 5.4.3.3, 7.5.1.70)

<b>Name</b>	Driver Identity number
<b>Description</b>	Driver Identity number (input from driver)
<b>Data Characteristics</b>	Alphanumeric
<b>Values</b>	Special values:

4.1.3.2 Train Operational Identifier (SRS 3.18.3.3, 3.18.4.5, 4.7.2, 5.4.3.4)

<b>Name</b>	Train operational identifier (train running number)
<b>Description</b>	Variable NID_OPERATIONAL, SRS § 7.5.1.89 This is the operational train running number.
<b>Data Characteristics</b>	Alphanumeric 8 characters: 0 to 9999 9999
<b>Values</b>	0FFFF FFFF (hex) is reserved for unknown

4.1.3.3 ERTMS/ETCS Level (SRS 3.18.4.2, 4.7.2, 5.4.3.4, 5.10.2.9)

<b>Name</b>	Level
<b>Description</b>	Current operating level Variable M_LEVEL, SRS § 7.5.1.60
<b>Data Characteristics</b>	Level classes
<b>Values</b>	0 STM 1 2 3

4.1.3.4 RBC Identity number (SRS3.18.4.3, 4.7.2, 5.4.3.4)

<b>Name</b>	RBC ETCS Identity number
<b>Description</b>	Variable NID_RBC, SRS § 7.5.1.93
<b>Data Characteristics</b>	Numeric
<b>Values</b>	0 to 16 777 214 16 777 215 means not known value

4.1.3.5 RBC Telephone number (SRS 3.18.4.3, 4.7.2, 5.4.3.4)

<b>Name</b>	RBC Telephone number (Radio subscriber number)	
<b>Description</b>	Variable NID_RADIO, SRS § 7.5.1.92	
<b>Data Characteristics</b>	Numeric 16 digits	
<b>Values</b>	0-9999 9999 9999 9999	
<b>Special/Reserved Values</b>	For each digit ;	
	0F(hex)	Use value F for digit to indicate no digit (if number shorter than 16 digits)

4.1.3.6 Maximum Staff Responsible Speed (SRS 4.4.11.1, 4.4.11.3)

<b>Name</b>	Maximum SR Speed	
<b>Description</b>	Maximum Staff Responsible Speed	
<b>Data Characteristics</b>	Numeric 3 digits 5 km/h	
<b>Values</b>	0-600km/h	

## 4.1.3.7 Staff Responsible distance (SRS 4.4.11.1, 4.4.11.3)

<b>Name</b>	Staff Responsible distance
<b>Description</b>	Staff Responsible distance is a given distance to which driver is allowed to run in staff responsible mode.
<b>Data Characteristics</b>	Numeric 4 digits 10 m
<b>Values</b>	Minimum value : 0 Maximum value : TBD

## 4.1.3.8 STM data (SRS 4.7.2, 5.4.3.6)

To be defined according FFFIS STM.

## 4.1.3.9 STM to be activated selection (SRS 4.7.2, 5.4.3.4)

To be defined according FFFIS STM.

**4.1.4 Driver confirmation of data**

## 4.1.4.1 Train Data Confirmation (SRS 4.7.2, 4.10.1.3, 5.4.2.9, 5.4.3.1, 5.4.3.3, 5.4.3.4, 5.4.3.6)

<b>Name</b>	Train Data Confirmation
<b>Description</b>	Confirmation of Train Data by driver
<b>Data Characteristics</b>	Boolean
<b>Values</b>	True : Train Data is confirmed False : Train Data is NOT confirmed

## 4.1.4.2 Driver ID Confirmation (SRS 4.7.2)

<b>Name</b>	Driver ID Confirmation
<b>Description</b>	Confirmation of Driver ID by driver
<b>Data Characteristics</b>	Boolean
<b>Values</b>	True : Driver ID is confirmed False : Driver ID is NOT confirmed

**4.1.5 Data deletion (SRS 4.7.2)**

## 4.1.5.1 Delete train location (SRS 4.7.2)

<b>Name</b>	Delete train location
<b>Description</b>	Delete train location by driver
<b>Data Characteristics</b>	Boolean
<b>Values</b>	True : Train location is deleted False : Train location is NOT deleted

## 4.1.5.2 Delete ERTMS/ETCS level(SRS 4.7.2)

<b>Name</b>	Delete ERTMS/ETCS level
<b>Description</b>	Delete ERTMS/ETCS level by driver
<b>Data Characteristics</b>	Boolean
<b>Values</b>	True : ERTMS/ETCS level is deleted False : ERTMS/ETCS level is NOT deleted

## 4.1.5.3 Delete RBC phone number(SRS 4.7.2)

<b>Name</b>	Delete RBC phone number
<b>Description</b>	Delete RBC phone number by driver
<b>Data Characteristics</b>	Boolean
<b>Values</b>	True : RBC phone number is deleted False : RBC phone number is NOT deleted

## 4.1.5.4 Delete RBC ID(SRS 4.7.2)

<b>Name</b>	Delete RBC ID
<b>Description</b>	Delete RBC ID by driver
<b>Data Characteristics</b>	Boolean
<b>Values</b>	True : RBC ID is deleted False : RBC ID is NOT deleted

**4.1.6 Mode change request**

4.1.6.1 Shunting Request (SRS 4.4.8.1, 4.4.14.1, 4.6.3, 4.7.2, 5.4.1.3, 5.4.3.5, 5.4.5.4, 5.6.1.1, 5.6.3, 5.11.1.1)

<b>Name</b>	Shunting Request
<b>Description</b>	
<b>Data Characteristics</b>	Boolean
<b>Values</b>	True : Shunting is requested False : Shunting is NOT requested

4.1.6.2 Exit of Shunting request (SRS 4.6.3, 4.7.2)

<b>Name</b>	Exit of Shunting Request
<b>Description</b>	
<b>Data Characteristics</b>	Boolean
<b>Values</b>	True : Exit of Shunting is requested False : Exit of Shunting is NOT requested

4.1.6.3 Non-leading selection (SRS 4.4.15.3, 4.6.3, 4.7.2, 5.4.3.5, 5.4.5.4, 5.12.3.4)

<b>Name</b>	Non-leading selection
<b>Description</b>	Non-leading mode is selected by the driver
<b>Data Characteristics</b>	Boolean
<b>Values</b>	True : Non-leading is selected False : Non-leading is NOT selected

4.1.6.4 Exit of Non-leading request (SRS 4.6.3, 4.7.2, 5.12.3.4, 5.14.2.0)

<b>Name</b>	Exit of Non-leading request
<b>Description</b>	Non-leading is ended by the driver
<b>Data Characteristics</b>	Boolean
<b>Values</b>	True : Non-leading is ended False : Non-leading is NOT ended



4.1.6.5 Acknowledgement after Trip (SRS 3.13.8.2, 4.4.13.1.4, 4.4.14.1.1, 4.6.3, , 4.4.13.1, 4.4.14.1, 4.7.2, 5.11.1.1)

<b>Name</b>	Acknowledgement after Trip
<b>Description</b>	Acknowledgement after Trip
<b>Data Characteristics</b>	Boolean
<b>Values</b>	True : Trip is acknowledged False : Trip is NOT acknowledged

4.1.6.6 Acknowledgement of Staff Responsible (SRS 4.7.2, 5.4.3.7)

<b>Name</b>	Acknowledgement of Staff Responsible
<b>Description</b>	
<b>Data Characteristics</b>	Boolean
<b>Values</b>	True : Staff Responsible is acknowledged False : Staff Responsible is NOT acknowledged

4.1.6.7 Acknowledgement of On Sight (SRS 4.6.3, 4.7.2, 5.4.3.7, 5.9.1.2, 5.9.2.3, 5.9.2.4, 5.9.3.2, 5.9.3.4, 5.9.3.5, 5.9.3.6)

<b>Name</b>	Acknowledgement of On Sight
<b>Description</b>	
<b>Data Characteristics</b>	Boolean
<b>Values</b>	True : On Sight is acknowledged False : On Sight is NOT acknowledged

4.1.6.8 Acknowledgement of Unfitted (SRS 4.6.3, 4.7.2, 5.4.3.7)

<b>Name</b>	Acknowledgement of Unfitted
<b>Description</b>	Acknowledgement of Unfitted
<b>Data Characteristics</b>	Boolean
<b>Values</b>	True : Unfitted is acknowledged False : Unfitted is NOT acknowledged

4.1.6.9 Acknowledgement of shunting ordered by trackside (SRS 4.6.3, 4.4.8.1.9, 5.7.1.3, 5.7.2.3, 5.7.2.4, 5.7.3.2, 5.7.3.3, 5.7.3.4, 5.7.3.5)

<b>Name</b>	Acknowledgement of shunting ordered by trackside
<b>Description</b>	Acknowledgement of shunting ordered by trackside
<b>Data Characteristics</b>	Boolean
<b>Values</b>	True : shunting ordered by trackside is acknowledged False : shunting ordered by trackside is NOT acknowledged

4.1.6.10 Acknowledgement of reversing mode (SRS 4.6.3, 5.13.1.4, 5.13.1.5)

<b>Name</b>	Acknowledgement of reversing mode
<b>Description</b>	Acknowledgement of reversing mode
<b>Data Characteristics</b>	Boolean
<b>Values</b>	True : reversing mode is acknowledged False : reversing mode is NOT acknowledged

4.1.6.11 Override EOA request (SRS 3.10.3.4, 4.4.11.1, 4.6.3, 4.7.2, 5.4.5.4, 5.6.4.1, 5.8.1, 5.8.2, )

<b>Name</b>	Override EOA request
<b>Description</b>	Override EOA request (input from driver)
<b>Data Characteristics</b>	Boolean
<b>Values</b>	True : Override EOA is confirmed False : Override EOA is NOT confirmed

## 4.1.6.12 Track Ahead Free confirmation (SRS 3.15.5.3, 3.15.5.4, 5.9.6.3)

<b>Name</b>	Track Ahead Free confirmation
<b>Description</b>	Track Ahead Free granted by driver
<b>Data Characteristics</b>	Boolean
<b>Values</b>	True : Track Ahead Free is confirmed False : Track Ahead Free is NOT confirmed

## 4.1.6.13 Acknowledgement of release emergency brake (SRS 4.4.14)

<b>Name</b>	Acknowledgement of release emergency brake
<b>Description</b>	Acknowledgement of release emergency brake by driver
<b>Data Characteristics</b>	Boolean
<b>Values</b>	True : release emergency brake is acknowledged False : release emergency brake is NOT acknowledged

## 4.1.6.14 Acknowledgement of release service brake (SRS 3.14.2, 3.14.3)

<b>Name</b>	Acknowledgement of release service brake
<b>Description</b>	Acknowledgement of release service brake by driver
<b>Data Characteristics</b>	Boolean
<b>Values</b>	True : release service brake is acknowledged False : release service brake is NOT acknowledged

**4.1.7 Other inputs**

## 4.1.7.1 Train Integrity (SRS 3.6.5.1.3, 3.6.5.2, 4.7.2, 7.5.1.108)

<b>Name</b>	Train Integrity
<b>Description</b>	Confirmation of Train Integrity (input from driver)
<b>Data Characteristics</b>	Boolean
<b>Values</b>	True : Train Integrity is confirmed False : Train Integrity is NOT confirmed

4.1.7.2 Acknowledgement of level transition to level X (SRS 4.7.2, 5.10.1.3?, 5.10.2.6?,5.10.4.1, 5.10.4.3, 5.10.4.4)

<b>Name</b>	Acknowledgement of level transition to level X
<b>Description</b>	Acknowledgement of level transition to level X where X may be: 0, STM ,1 ,2 ,3)
<b>Data Characteristics</b>	Boolean
<b>Values</b>	True : Message is acknowledged False : Message is NOT acknowledged

4.1.7.3 Acknowledgement of Plain Text Message (SRS 3.12.3.1.2, 3.12.3.1.7, 3.12.3.7, 4.7.2, 7.4.2.22, 7.5.1.132)

<b>Name</b>	Acknowledgement of Plain Text Message
<b>Description</b>	
<b>Data Characteristics</b>	Boolean
<b>Values</b>	True : Message is acknowledged False : Message is NOT acknowledged

4.1.7.4 Acknowledgement of Fixed Text Message (SRS 3.12.3.1, 3.12.3.7, 4.7.2)

<b>Name</b>	Acknowledgement of Fixed Text Message
<b>Description</b>	
<b>Data Characteristics</b>	Boolean
<b>Values</b>	True : Message is acknowledged False : Message is NOT acknowledged

4.1.7.5 Override route suitability (3.12.2.5, 3.12.2.6, 4.7.2)

<b>Name</b>	Override route suitability
<b>Description</b>	
<b>Data Characteristics</b>	Boolean
<b>Values</b>	True : Route suitability has to be override False : Route suitability has NOT to be override

4.1.7.6 Start of mission (4.4.11.1.6, 4.4.14.1.5, 4.4.14.1.7, 4.6.3, 4.7.2, 5.4.1.1, 5.4.3.7, 5.4.5.4.3, 5.11.1.1, 5.12.3.3.3, 5.12.3.4.3, 5.14.2, 5.14.3.2)

<b>Name</b>	Start of mission
<b>Description</b>	Start of mission is requested by the driver
<b>Data Characteristics</b>	Boolean
<b>Values</b>	True : Start of mission is request by driver False : Start of mission is NOT request by driver

4.1.7.7 Driver language (SRS 3.12.3.3.2, 3.12.3.3.4, 4.7.2, 5.4.3.1)

<b>Name</b>	Driver language
<b>Description</b>	Driver language is requested by the driver
<b>Data Characteristics</b>	tbd
<b>Values</b>	

4.1.7.8 Shown permitted speed+target speed+target distance (4.4.12.1.4)

<b>Name</b>	Shown permitted speed+target speed+target distance
<b>Description</b>	Shown permitted speed+target speed+target distance is requested by the driver
<b>Data Characteristics</b>	Boolean
<b>Values</b>	True : Shown permitted speed+target speed+target distance is request by driver False : Shown permitted speed+target speed+target distance is NOT request by driver

4.1.7.9 Shown permitted speed (2.6.3.1, 4.4.8.1.11, 4.4.11.1.7)

<b>Name</b>	Shown permitted speed
<b>Description</b>	Shown permitted speed is requested by the driver
<b>Data Characteristics</b>	Boolean
<b>Values</b>	True : Shown permitted speed is request by driver False : Shown permitted speed is NOT request by driver

4.1.8 MMI input for STM (SRS 2.6.4.1, 2.4.6.2, 3.15.6.3, 4.4.6.1.9, 4.4.16, 4.4.15, 4.4.17)

4.1.9 Text message scrolling function (SRS 3.12.3.1.5)

<b>Name</b>	Text message scrolling function
<b>Description</b>	The driver may ask to scroll the text messages inside the text message box display.
<b>Data Characteristics</b>	
<b>Values</b>	Scrolling up is requested Scrolling down is requested No scrolling is requested

## 4.2 Output variables (from on-board equipment to driver)

### 4.2.1 Train Data

Similar to § 4.1.1.

### 4.2.2 Additional Data

Similar to § 4.1.2.

### 4.2.3 Current status of the on-board equipment

#### 4.2.3.1 ERTMS/ETCS Mode (SRS 4.4.2.1, 4.7.2)

<b>Name</b>	Mode	
<b>Description</b>	On-board operating mode Variable M_MODE, SRS § 7.5.1.51	
<b>Data Characteristics</b>	Mode classes	
<b>Values</b>	0	Full Supervision
	1	On Sight
	2	Staff Responsible
	3	Shunting
	4	Unfitted
	5	Sleeping
	6	Stand By
	7	Trip
	8	Post Trip
	9	System Failure
	10	Isolation (No display in isolation)
	11	Non Leading
	12	STM European
	13	STM National
	14	Reversing
15	Spare	

4.2.3.2 Level (SRS 4.4.2.1, 4.7.2)

<b>Name</b>	Level
<b>Description</b>	Current operating level Variable M_LEVEL, SRS § 7.5.1.60
<b>Data Characteristics</b>	Level classes
<b>Values</b>	0 1 2 3 STM

**4.2.4 Ceiling Speed and Target Speed Monitoring**

4.2.4.1 Permitted Speed (SRS 2.6.3.1, 3.13.4.4.1, 4.4.8.1, 4.4.9.1.6, 4.4.11.1.7, 4.4.12.1.4, 4.4.18.1.5, 4.7.2)

<b>Name</b>	Permitted Speed
<b>Description</b>	Current Permitted Speed
<b>Data Characteristics</b>	Numeric 3 digits 1 km/h
<b>Values</b>	0-600km/h

4.2.4.2 Target Speed (SRS 3.13.4.2, 3.13.4.8.1, 4.4.9.1.6, 4.4.12.1.4, 4.7.2)

<b>Name</b>	Target Speed
<b>Description</b>	Next Target Speed (in BTS and BEOA sections)
<b>Data Characteristics</b>	Numeric 3 digits 5 km/h
<b>Values</b>	Maximum value : See SRS § 7.5.1.127 & 7.5.1.128 (variables V_LOA, V_MAIN...).0-600km/h



4.2.4.3 Target Distance (SRS 4.4.9.1.6, 4.4.12.1.4, 4.7.2)

<b>Name</b>	Target Distance
<b>Description</b>	Next Target Distance (in BTS and BEOA sections)
<b>Data Characteristics</b>	Numeric 4 digits 1 m
<b>Values</b>	Maximum value : See SRS § 7.5.1.21 (variable D_SECTION).

4.2.4.4 Release Speed (SRS 3.13.4.2, 4.4.9.1.6, 4.7.2)

<b>Name</b>	Release Speed
<b>Description</b>	Current Release Speed (In BEOA and RS sections)
<b>Data Characteristics</b>	Numeric 2 digits 5 km/h
<b>Values</b>	Maximum value : See SRS § 7.5.1.162 & 7.5.1.163 (variables V_RELEASEDP, V_RELEASEOL).

4.2.4.5 Warning (SRS 3.13.4.5.1, 4.7.2)

<b>Name</b>	Warning
<b>Description</b>	Warning due to overspeed
<b>Data Characteristics</b>	Boolean
<b>Values</b>	True : Warning is activated False : Warning is NOT activated

**4.2.5 Train status**

4.2.5.1 Train Speed (SRS 2.6.3.1, 3.13.2.1, 4.4.8.1.10, 4.4.9.1.6, 4.4.10.1.4, 4.4.11.1.7, 4.4.12.1.4, 4.4.15.1.6, 4.4.18.1.5, 4.7.2)

<b>Name</b>	Train Speed
<b>Description</b>	Actual Train Speed

<b>Data Characteristics</b>	Numeric 3 digits 1 km/h
<b>Values</b>	0-600km/h

4.2.5.2 Service Brake Command Indication (SRS 3.13.4.6.5, 3.14.2.6, 3.14.3.4, 4.7.2)

<b>Name</b>	Service Brake Command Indication
<b>Description</b>	Indicates that the ERTMS/ETCS on-board equipment command the service brake.
<b>Data Characteristics</b>	Boolean
<b>Values</b>	Service Brake command activated Service Brake command not activated

4.2.5.3 Emergency Brake Command Indication (SRS 3.13.4.7.4, 3.14.2.6, 3.14.3.4, 4.7.2)

<b>Name</b>	Emergency Brake Command Indication
<b>Description</b>	Indicates that the the ERTMS/ETCS on-board equipment command the emergency brake.
<b>Data Characteristics</b>	Boolean
<b>Values</b>	Emergency Brake command activated  Emergency Brake command not activated

**4.2.6 Warnings, Text Messages**

4.2.6.1 Trip Alarm (SRS 4.7.2, 4.4.13.1.3)

<b>Name</b>	
<b>Description</b>	Alarm of Trip
<b>Data Characteristics</b>	Boolean
<b>Values</b>	True: Trip is activated False: Trip is NOT activated

4.2.6.2 Predefined Text Message (Fixed text message )(SRS 3.12.3.1, 3.12.3.2, 3.12.3.3, 3.12.3.6, 3.12.3.7, 3.16.3.5, 4.7.2, 4.8.3.1.1, 4.10.1.3, 7.4.1.1, 7.4.2.23, 7.5.1.29, 7.5.1.50, 7.5.1.61, 7.5.1.68, 7.5.1.130, 7.5.1.131, 7.5.1.132, 7.5.1.133, 7.5.1.146)

<b>Name</b>	Predefined Text Message
<b>Description</b>	Predefined Text Message to be displayed
<b>Data Characteristics</b>	Alphanumeric
<b>Values</b>	<p>ACK ERTMS/ETCS LEVEL CHANGE TO 0 (SRS 5.11.7.3)</p> <p>ACK FOR LEVEL TRANSITION (SRS 4.7.2, 5.10.4.1, 5.10.4.3, 5.10.4.4)</p> <p>ACK FOR ON SIGHT MODE (SRS 4.6.3, 4.7.2, 5.4.3.7.3, 5.9.1.2, 5.9.2.3, 5.9.2.4, 5.9.3.2, 5.9.3.4, 5.9.3.5, 5.9.3.6)</p> <p>ACK FOR RELEASE EMERGENCY BRAKE (SRS 3.12.1.6, 3.12.2.4, 3.13.1.3, 4.4.14.1.2, 5.12.1.1)</p> <p>ACK FOR RELEASE SERVICE BRAKE (SRS 3.12.1.6, 3.12.2.4, 3.13.1.4, 3.15.3.4.5)</p> <p>ACK FOR REVERSING MODE (SRS 4.6.3, 5.13.1.4, 5.13.1.5)</p> <p>ACK FOR STAFF RESPONSIBLE MODE (SRS 4.7.2, 5.4.3.7.3, 5.4.3.7.3)</p> <p>ACK FOR UNFITTED MODE (SRS 4.6.3, 4.7.2, 5.4.3.7.3)</p> <p>ACK SHUNTING ORDERED BY TRACKSIDE (SRS 4.4.8.1.9, 4.6.3, 5.7.1.3, 5.7.2.3, 5.7.2.4, 5.7.3.2, 5.7.3.3, 5.7.3.4, 5.7.3.5)</p> <p>ACK TRAIN TRIP (SRS 3.13.8.2, 4.4.13.1.4, 4.4.14.1.1, 4.6.3, 4.7.2, 5.11.1.1)</p> <p>BRAKES APPLIED DUE DATA CONSISTENCY WITHIN BALISE GROUP (SRS 3.16.2.6.1)</p> <p>BRAKES APPLIED DUE TO NO SAFE RADIO MESSAGE RECEIVED IN DUE TIME (SRS 3.16.3.4.4)</p> <p>BRAKES APPLIED DUE TO REVERSE MOVEMENT PROTECTION (SRS 3.14.3.4)</p> <p>BRAKES APPLIED DUE TO ROLL-AWAY PROTECTION (SRS 3.14.2.6)</p> <p>BRAKES APPLIED DUE TO SUPERVISION OF MA/SPEED (SRS 3.13)</p> <p>CONFIRM TRACK AHEAD FREE (SRS 3.15.5.2, 3.15.5.4, 4.4.11.1.9, 4.4.12.1.5, 4.4.12.1.8, 5.9.6.3.3, 7.5.1.28, 7.5.1.48)</p> <p>EMERGENCY MESSAGE IGNORED (SRS 3.10.2.1.3)</p> <p>ENTRY TO FULL SUPERVISION (SRS 4.4.9.1.4)</p> <p>ENTRY TO ON-SIGHT (SRS 4.4.12.1.7)</p> <p>LEVEL TRANSITION TO LEVEL X (SRS 5.10.1.3, 5.10.2.6) (X= 0/STM/1/2/3)</p> <p>NO ORDER RECEIVED TO TERMINATE THE RADIO SESSION WITH SET OFF RBC (SRS 3.16.3.5.4)</p> <p>NO SAFE RADIO CONNECTION WITH RBC (SRS 3.5.3.7, 5.4.5.4.1, 5.6.4.1.1)</p> <p>NO TRACK CONDITION WILL BE RECEIVED (SRS 5.4.5.4.4)</p> <p>NON LEADING ERROR (SRS 3.14.2.5)</p> <p>NON_LEADING GRANTED BY RBC (SRS 4.6.3)</p> <p>REVERSING IS POSSIBLE (SRS 5.13.1.3)</p> <p>ROUTE UNSUITABILITY (SRS 3.10.2.4.2)</p> <p>SELECT OVERRIDE EOA (SRS 5.9.1.5)</p> <p>SELECT START OF MISSION (SRS 5.12.1.1)</p> <p>SHUNTING REFUSED BY RBC (SRS 5.4.3.5.2, 5.6.3, 4.7.2)</p> <p>SHUNTING GRANTED BY RBC (SRS 4.6.3)</p> <p>SHUNTING GRANTED NOT RECEIVED (SRS 4.7.2)</p> <p>SHUNTING REQUEST SEND (SRS 5.6.3, 4.7.2)</p> <p>TEST RESULTS ARE OK (SRS 4.4.7.1.2)</p> <p>TRACKSIDE EQUIPMENT SYSTEM VERSION NOT COMPATIBLE (SRS 3.17.3.5? 3.17.3.8? 3.17.3.15)</p> <p>TRACKSIDE RBC EQUIPMENT SYSTEM VERSION NOT COMPATIBLE (SRS 3.16.2.2.7)</p>

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4.2.6.3 Plain Text Message (SRS 3.12.3.1, 3.12.3.7, 7.4.1.1, 7.4.2.22, 7.5.1.29, 7.5.1.50, 7.5.1.61, 7.5.1.68, 7.5.1.131, 7.5.1.132,7.5.1.133,7.5.1.146,7.5.1.168)

<b>Name</b>	Plain Text Message
<b>Description</b>	Plain Text Message to be displayed
<b>Data Characteristics</b>	Alphanumeric
<b>Values</b>	

#### 4.2.7 Indications

4.2.7.1 Local Time (SRS 3.18.5.1.2)

<b>Name</b>	Local Time
<b>Description</b>	Local Time displayed on the MMI
<b>Data Characteristics</b>	Numeric 6 digits Format HH;MM;SS Note : This information is optional (SRS 3.17.5.1.2)
<b>Values</b>	

4.2.7.2 Override EOA status (SRS 4.4.11.1.7, 4.7.2)

<b>Name</b>	Override EOA status
<b>Description</b>	Override EOA is activated (indication to the driver)
<b>Data Characteristics</b>	Boolean
<b>Values</b>	True: Override EOA is activated by the driver False: Override EOA is not activated by the driver

4.2.7.3 SR mode proposed (SRS 5.4.4)

<b>Name</b>	SR mode proposed
<b>Description</b>	SR mode proposed (indication to the driver)
<b>Data Characteristics</b>	Boolean
<b>Values</b>	True: SR mode proposed False: SR mode NOT proposed

**4.2.8 Track data & track condition (SRS 3.12.1.1, 3.12.1.5, 7.4.1.1)**

## 4.2.8.1 Geographical train position (SRS 3.6.6.2, 4.7.2)

<b>Name</b>	Geographical train position
<b>Description</b>	Indicate to the driver the geographical position of the train in relation to the track kilometre/track mile.
<b>Data Characteristics</b>	Resolution: 1 metre
<b>Values</b>	

## 4.2.8.2 Power control (SRS 4.7.2)

<b>Name</b>	Power control
<b>Description</b>	Indicate to the driver if the main power switch has to be switch on/off or not, if the circuit breaker has to be activated or not, if traction power has to be changed or not, if traction on-board has to be switched or not...
<b>Data Characteristics</b>	Those data are location dependent.
<b>Values</b>	Area where Powerless section  Location where traction power changes Traction power type

## 4.2.8.3 Non-Stopping control (SRS 3.12.1.4, 4.7.2)

<b>Name</b>	Stopping control
<b>Description</b>	Indicate to the driver if the train is allowed to stop or not
<b>Data Characteristics</b>	Those data are location dependent.
<b>Values</b>	Area where Stopping is not permitted because of bridge Area where Stopping is not permitted because of tunnel

4.2.8.4 Air tightness (SRS 4.7.2)

<b>Name</b>	Air tightness control
<b>Description</b>	Indicate to the driver if the air tightness has to be switch on/off
<b>Data Characteristics</b>	Those data are location dependent.
<b>Values</b>	Area where Air tightness has to be switch on

4.2.8.5 Balise transmission control (SRS 4.7.2)

<b>Name</b>	Balise transmission control
<b>Description</b>	Indicate to the driver if the balise transmission has to be switch off/on due to big metal masses.
<b>Data Characteristics</b>	Those data are location dependent.
<b>Values</b>	Area where Balise transmission has to be switch off

4.2.8.6 Control radio transmission – Unchecked Area (SRS 4.7.2 “Radio hole control”)

<b>Name</b>	Control radio transmission – Unchecked Area
<b>Description</b>	Indicate to the driver if the on-board equipment has to check the radio transmission loss or not
<b>Data Characteristics</b>	Those data are location dependent.
<b>Values</b>	Area where loss of radio link is NOT checked

4.2.8.7 Brakes control (SRS 4.7.2)

<b>Name</b>	Brakes control
<b>Description</b>	Indicate to the driver if the regenerative brake/ eddy current brake/ magnetic shoe brake have to be switch off/on
<b>Data Characteristics</b>	Those data are location dependent.
<b>Values</b>	Area where Regenerative brake has to be switch off Area where Eddy current brake has to be switch off Area where Magnetic shoe brake has to be switch off

4.2.8.8 Route suitability (SRS 3.12.2.4, 4.7.2)

<b>Name</b>	Route suitability
<b>Description</b>	The information about unsuitability shall be displayed when received to make it possible for the driver to choose a suitable location to stop.
<b>Data Characteristics</b>	Those data are location dependent.
<b>Values</b>	Loading gauge Power supply Axle load

**4.2.9 MMI output for STM (SRS 2.6.4.1, 2.4.6.2, 3.15.6.3, 4.4.6.1.9, 4.4.16, 4.4.15, 4.4.17)**

4.2.9.1 STM status (SRS 2.6.4.1)

<b>Name</b>	STM status
<b>Description</b>	STM status
<b>Data Characteristics</b>	TBD
<b>Values</b>	TBD

4.2.9.2 STM mode (SRS 4.7.2)

<b>Name</b>	STM mode
<b>Description</b>	STM mode
<b>Data Characteristics</b>	TBD
<b>Values</b>	TBD

4.2.9.3 ERTMS/ETCS on-board test status (SRS 4.4.7.1.2)

<b>Name</b>	ERTMS/ETCS on-board test status
<b>Description</b>	ERTMS/ETCS on-board test status
<b>Data Characteristics</b>	TBD
<b>Values</b>	TBD

4.2.9.4 On-board external devices test status (SRS 4.4.7.1.2)

<b>Name</b>	On-board external devices test status
<b>Description</b>	On-board external devices test status
<b>Data Characteristics</b>	TBD
<b>Values</b>	TBD