

Appendix 2: GLOSSARY (TERMS AND ABBREVIATIONS)

A lot of significant “**terms and abbreviations**” used in the ETCS (European Train Control System) domain (European Directives, FRS and SRS, Operational Rules, etc) have been defined elsewhere but, taking into account the purpose of this document it has been agreed to provide a new list of definitions, choosing those that are most useful for the scope of the AIMESC project. The given meaning for each term is a general meaning and the list cannot be considered exhaustive or official.

In blue a more detailed description.

English term	Abbreviation (when existing)	General Meaning
Acknowledgement	ACK	Confirmation given by the driver to a request from the ETCS on-board system that she/he has received the information she/he has to take into account.
Application levels	Levels	Different ERTMS/ETCS application levels are a way to express the operating relationships between track and train. <i>Level definitions are principally related to the trackside equipment used, the way trackside information reaches the on-board units and which functions are processed by the trackside and on-board equipment respectively. (See Level 0, Level 1, Level 2, Level 3 and Level STM for further details.)</i>
Automatic Train Control system	ATC	Automatic Train Control system
Automatic Train Protection system	ATP	A safety system that enforces either compliance with or observation of speed restrictions and signal aspects by trains.
Authorisation for train movement		Permission for a train to move given by means of: a trackside signal at a proceed aspect, an MA or a written order.
Balise		Transmission device (passive transponder) that can send telegrams to an On-Board subsystem passing over it. <i>The balises in use in the ERTMS domain are the Eurobalise.</i>
Balise Group	BG	One or more balises which are treated as having the same reference location on the track.
Balise Transmission Module	BTM	On board equipment for intermittent transmission between track and train. <i>This device is used to receive telegrams from balises.</i>
Balise Telegram	Telegram	Information that can be sent from a balise to the On-Board subsystem. <i>One or several telegrams constitute a balise message</i>
Border Crossing		Location where trains cross from one national railway network to another national railway network.
Braking Curve	BC	A speed distance curve to be supervised in order to respect a speed reduction.
Cab signalling system		Cab signalling provides safe movement authorities to trains; these movement authorities are displayed on a device installed in the driver's cab
Change Request	CR	Transparent formal and ordered processing of the changes leading to a new release of the technical specifications
Class 1 functions		The set of mandatory functions defined in the FRS Version 4.29. These functions represent the minimum requirement for technical interoperability.
Control Centre		Signal box covering a large railway area, usually incorporating other

		operational functions.
Conventional Line		Conventional Line = not High Speed Line
Controller		Performer who is in charge of GSM-R communication to trains in a defined area and entitled to give orders to train drivers.
Cross Acceptance		Complete mutual recognition between member States of each other's national rules, checking processes and authorisation. <i>(The status achieved by a product that has been accepted by one Authority of the relevant European Standards and is acceptable to other Authorities without the necessity for further assessment).</i>
Current position (train)		The position of a train at a certain moment measured using defined system co-ordinates.
Danger Point	DP	The location beyond the EOA that can be reached by the front of the train without creating a hazardous situation.
Data Recording Unit	DRU	Device to record defined actions and swaps relating to the train's movements. <i>(The recorded data can be used for off line analysis of all events that happened during a train journey).</i>
Driver		Person qualified and authorised to drive trains.
Driver Machine Interface	DMI	Train borne device to enable communication between ETCS/GSMR and the driver.
Driving On Sight		The driver is obliged to proceed with caution, taking into account the line visible ahead, controlling the speed such that it is possible to stop short of any obstacle.
Dynamic speed monitoring		Supervision of the speed of the train versus its position, in order to make the train respect the Most Restrictive Speed Profile and Limit Of Authority/End Of Authority.
Emergency call	EC	Call set up in some dangerous situations to warn all trains/shunting movements in a defined area of a situation requiring an immediate response.
Emergency propelling		Train movement performed in Reversing in emergency with the driver in a cab not on the front vehicle in the direction of running.
Emergency propelling area		Area where emergency propelling movements in RV are allowed.
Emergency stop order		ETCS order braking a train with the maximum brake force until the train is at standstill.
End of Authority	EoA	Location to which the train is authorised to move and where the target speed is zero.
ETCS location marker		Harmonised trackside ETCS signal to identify a specific location on the line.
ETCS On-Board System	ETCS OBS	Part of ETCS installed on a railway vehicle <i>(A Computer-based system that supervises the movement of the train to which it belongs, on the basis of information exchanged with the ETCS trackside system).</i>
ETCS stop marker		Harmonised trackside ETCS signal to indicate the location where a train running in SR has to stop.
ETCS train category		Group of trains based on some specific characteristics of the rolling stock.
ETCS trackside System		Part of ETCS installed trackside.

Eurobalise message		Eurobalise message is the information sent by a balise group (<i>i.e. the message is composed of one or several telegrams, sorted by balise number in the group (telegram from balise number 1 first), each telegram is transmitted by a Eurobalise</i>). A Eurobalise telegram contains one header and an identified and coherent set of Packets
Euroloop		The Euroloop subsystem operates on Level 1 lines, providing signalling information in advance as regard to the next main signal in the train running direction. <i>Euroloop is composed of an on-board functionality and by one or more trackside parts.</i>
Full Supervision	FS	The mode of ETCS when running all train and track data, which is required for a complete supervision of the train, is available on board. It is the ETCS mode giving full protection against over speed and over run.
Handover		The process of passing a train between two Radio Block Centres.
Infill information		Data that is transmitted from track to train at locations other than at main signals. <i>Provides, for example, the ability to inform a train that the signal ahead has cleared.</i>
Infill loop		A loop which is installed at a place (e.g. in rear of a signal) where it is not essential for train safety, but avoids unnecessary delay by transmitting infill information advising the train at once when the signal clears.
Interlocking		A general term applied to the controlling of the setting and releasing of "signals" and "points" to prevent unsafe conditions arising, and equipment which performs this function.
Interoperability		The "ability of a rail system to allow the safe and uninterrupted movement of trains which accomplish the required levels of performance for these lines. This ability depends on all the regulatory, technical and operational conditions which must be met in order to satisfy the essential requirements".
Isolation	IS	The mode of ETCS when the ETCS system is isolated (disconnected) from the other on-board equipment/systems (including the driver) and physically isolated from the brakes.
Juridical Recording Unit	JRU	Device to record defined data (actions and swaps) relating to the train's movements for legal purpose. <i>(The recorded data shall allow analysing the cause of an accident/incident/hazardous situation).</i>
Level 0	L0	Level of ERTMS/ETCS defined to cover instances when the train borne equipment is operating in an area where the track side is not fitted with operational ERTMS / ETCS equipment (train equipped with ERTMS/ETCS operating on a line without ERTMS/ETCS or national system or with the ERTMS/ETCS systems in commissioning).
Level 1	L1	Level of ERTMS/ETCS with or without infill transmission defined to overlay onto conventional line side signalling (train equipped with ERTMS/ETCS operating on a line with conventional line side signalling equipped with Eurobalises and optionally Euroloop or Radio infill)
Level 2	L2	Level of ERTMS/ETCS that uses radio to transmit movement authorities to the train whilst relying on conventional equipment to determine train location (train equipped with ERTMS/ETCS operating on a line controlled by a Radio Block Centre and equipped with Eurobalises and Euroradio with train location and train integrity proving performed by the trackside).
Level 3	L3	Level of ERTMS/ETCS similar to level 2 but with train location and train

		integrity supervision based on information received from the train.
Level STM	LSTM	Level of ERTMS/ETCS that allows the train equipped with ERTMS/ETCS operating on a line equipped with a national system to which it interfaces by use of an STM.
Limited Supervision	LS	The mode of ETCS when the ETCS enables the train to be operated in areas where trackside information can be supplied to realise background supervision of the train. Inside these areas with lineside signals, ETCS may not have information regarding the status of some of them (e.g. not all signals are fitted with LEUs or connected to an RBC). <i>The driver must observe the existing line-side information (signals, speed boards etc.) and national operating rules.</i>
Limit of Authority	LoA	The place beyond which the train is not authorised to pass and where target speed is zero.
Line side Electronic Unit	LEU	Line side electronic units are electronic devices that generate telegrams to be sent by balises, on the basis of information received from external trackside systems.
Loop transmission module	LTM	Train borne equipment that reads the track mounted loop data.
Message		Information sent: a) by a balise group (<i>it is composed of one or several telegrams</i>); b) by RBC (<i>Euroradio message contains one header an identifier and coherent set of variables and Packets</i>); c) by loop (<i>Euroloop message contains one header an identifier and coherent set of variables and Packets</i>).
Movement Authority	MA	Permission for a train to move to a specific location with supervision of the permitted speed.
Most Restrictive Speed Profile	MRSP	The most restrictive speed restrictions the train shall obey on a given piece of track. (<i>The lowest speed taking into account all various speed profiles</i>)
National train control system		Pre existing Train control system as defined in the Directive 96/48 that, in order to interface with ETCS, can be considered as a candidate for a specific transmission module (STM).
National values		Values used to configure the ETCS supervision to local (national) requirements. (<i>Those values are transmitted to a train when entering the infrastructure of a country</i>)
No Power	NP	The mode of ETCS when the ETCS system is not powered. (<i>In this mode the full responsibility for the safe control of the train is given to the driver</i>).
Non equipped line		A line without operational track side ERTMS/ETCS equipment or with the ERTMS/ETCS systems in commissioning.
Non Leading	NL	The mode of ETCS used to manage the ETCS on-board equipment of a slave engine that is not electrically coupled with the leading engine (and so, not remote controlled) but has its own driver (the active train borne equipment and driver is not in the leading cab).
Non stopping area		Area defined by the Infrastructure Manager where it may not be safe or suitable to stop a train.
Odometry		The entire process of measuring the train's movement (speed and distance) during a journey along the track.
On Board sub-System	OBS	Depending on the application level (see further sections), the on-board sub-system can be composed of: a) the ERTMS/ETCS on-board equipment;

		<p>b) the on-board part of the GSM-R radio system;</p> <p>c) specific transmission modules for existing national train control systems.</p>
On Sight	OS	The mode of ETCS that gives the driver full responsibility for the safe control of his train at an enforced and limited speed (national value for driving on sight) when the ETCS system enables the train to enter into a track section that could be already occupied by another train, or obstructed by any kind of obstacle.
Operational text messages		Information or instructions sent to the driver for railway operational purposes.
Operational Train Category		Set of technical and/or operational characteristics of a train related to the relevant ETCS speed profiles.
Override EOA speed		Maximum speed when the override EOA function is active.
Packets		Packets are multiple variables grouped into a single unit, with a defined internal structure.
Permitted speed		The speed limit at which the driver can run without ETCS warning and/or intervention
Planned Temporary speed restriction	TSR	Temporary speed restriction that is implemented by ETCS or included in the list of temporary speed restrictions. <i>(The temporary speed restriction is defined to enable a separate category of track infrastructure speed restriction which can be used for working areas, etc.)</i>
Post Trip		Condition reached after a train trip when the train has been brought to a stand and after the driver's acknowledgement of the situation. <i>(It is only possible to release the brake after the driver's acknowledgement).</i>
Preparation of the train		All tasks to be performed before a train starts to operate.
Propelling		Movement of railway vehicles where the driver is not in the leading cab of the leading vehicle. <i>(When propelling, the operative cab is next to the train being propelled and the master switch is in forward. A train cannot propel itself (see reversing) but is able to propel another train).</i>
Radio Communication		Exchange of information between the on-board system and the RBC/radio infill unit.
Radio Block Centre	RBC	An ETCS trackside centralised unit controlling movements of trains fitted with ETCS on-board equipment. <i>(The RBC is a computer-based system that elaborates messages to be sent to the train on the basis of information received from external trackside systems and on the basis of information exchanged with the on-board sub-systems).</i>
Radio hole		A defined area where it is not possible by design to establish a reliable radio communication channel.
Radio in-fill unit		The RADIO IN-FILL subsystem operates on Level 1 lines, providing signalling information in advance as to the next main signal in the train running direction. RADIO IN-FILL is composed of an on-board functionality and by one or more trackside parts (named RADIO IN-FILL Unit)
Radio message		Is a message from train to track or from track to train via Radio
Release Speed	RS	A speed value which allows a train to approach the end of its

		Movement Authority. <i>(Needed mainly for intermittent transmission to enable the train approach a signal that has cleared in order to reach the information point at the signal.)</i>
Reverse movement		A train movement which is done in the opposite direction to the planned one.
Reversing	RV	The mode of ETCS when the ETCS system allows the driver to change the direction of movement of the train driving from the same cab <i>(the train orientation remains unchanged)</i> .
Revocation of MA		Withdrawal of a previously given MA.
Route book		Document or system that provides the driver with details of the line.
Running in SN	SN	The mode of ETCS when running in level STM (national). <i>This mode of ETCS enables an STM to access, via the ETCS on board equipment, the following resources: MMI, TIU, odometer and brakes. In this mode the operational rule to be used are national rules.</i>
Securing		Measures to be applied to avoid unintentional movement of railway vehicles.
Service Brake Intervention	SBI	First line of system intervention (service brake)
Shunting	SH	The mode of ETCS to enable shunting movement in an equipped area. <i>(To access this mode no train data are needed)</i> .
Shunting movement		Way of moving vehicles without train data and controlled by shunting signals.
Signaller		Performer in charge of the route setting of trains/shunting movements and of issuing instructions to drivers.
Sleeping	SL	The mode of ETCS used to manage the ETCS on-board equipment of a slave engine that is electrically and mechanically coupled with the leading engine (remote controlled).
Specific Transmission Module	STM	Module which allows the ETCS on-board to operate with a non ETCS trackside train control system.
Staff Responsible	SR	The mode of ETCS that gives the driver full responsibility for the safe control of his train at an enforced and limited speed (national value for Staff Responsible) in an equipped area.
Stand-By	SB	This mode is a default mode of awakening the ETCS system and performing a self test.
Static Speed Profile	SSP	The Static Speed Profile (SSP) is a description of the fixed speed restrictions of a given piece of track. <i>The speed restrictions can be related to e.g. maximum line speed, curves, points, tunnel profile sand bridges. The Static Speed Profile is based on factors, which are both track and train dependent. The relationships between track and train characteristics determine the individual Static Speed Profile for each train.</i>
System failure		The mode of ETCS in case of a fault in the ETCS on board equipment which affects safety.
Tandem		Two or more traction units mechanically and pneumatically coupled, but not remote controlled, used in the same train and where each traction unit requires a driver. <i>(Only one unit is leading, the other units are therefore non-leading)</i> .
Target Distance		Distance to the location where the train speed must be equal to or below the given target speed.

Target speed		Speed that has to be respected at the location defined by the target distance.
Target speed at the EOA		The Target Speed at the EOA is the permitted speed at the EOA; when the target speed is not zero, the EOA is called the Limit of Authority (LOA). This target speed can be time limited
Technical Specification for Interoperability	TSI	Specifications by which each subsystem or part of subsystem is covered in order to meet the essential requirements and to ensure the interoperability of the trans-European high speed and conventional rail systems.
Temporary speed restriction	TSR	Reduction of the infrastructure speed to a lower value for a time period.
Text message		Information in writing displayed on the DMI.
Track description		Information which describes the characteristics of the track in order to supervise a train movement.
Trackside radio communication network (GSM-R)	GSM-R	GSM-R radio communication network is used for the bi-directional exchange of messages between on-board sub-systems and RBC or radio infill units
Trackside subsystem		Depending on the application level, the trackside sub-system can be composed of: a) balise b) lineside electronic unit (LEU) c) the radio communication network (GSM-R) d) the Radio Block Centre (RBC) e) Euroloop f) Radio infill unit
Traction unit		Vehicle with driving cab(s) from where a movement may be operated.
Train		One or more traction units with or without coupled railway vehicles or set of vehicles with ETCS train data required.
Train borne equipment		The equipment with the responsibility of supervising vehicle operation according to the information received from infrastructure installations, from other non ERTMS / ETCS on-board equipment, from the driver and from the track side signalling system.
Train Category (operational)		Set of technical and/or operational characteristics of a train related to the relevant ETCS speed profiles.
Train Data		Information which describes the characteristics of the train in order to supervise a train movement.
Train Integrity		In the context of ETCS, "train integrity" means the completeness of the train.
Train Interface Unit	TIU	The unit that provides the interface between the train borne equipment and the train.
Train preparer		Performer in charge of the preparation of a train.
Train Type		Identifier of a predefined set of train data.
Transition (Levels)		Controlled change between the different ETCS levels.
Transition Point		Point where a transition between ETCS levels takes place.
Trip		The mode of ETCS in case of irrevocable application of the emergency brakes by ETCS until the train/shunting movement is at a standstill. <i>(In this situation it is not possible to release the brake until the</i>

		<i>train/shunting movement is at standstill and before the driver's acknowledgement of the trip).</i>
Unfitted	UN	This is the mode of ETCS that allows a fitted train to run in an unfitted area or in an area with ETCS in commissioning. (In this mode the operational rules to be used are purely national rules).
Warning Limit	W	Audible and/or visual indication to alert the driver to a condition which requires a positive action by the driver. <i>(If the train speed exceeds the warning limit, a warning shall be triggered, allowing the driver to avoid brake intervention).</i>
Written Order	WO	Instruction issued by the signaller to the driver.

OTHER ABBREVIATIONS THAT CAN BE FOUND INTO THE TECHNICAL SPECIFICATION FOR ERTMS

BCA	Braking Curve Area
BIU	Brake Interface Unit
CR	Conventional Rail
DP	Danger Point
DRU	Data Recording Unit
EBD	Emergency Brake Deceleration
EBI	Emergency Brake Intervention
EoM	End of Mission
ERTMS	European Railways Train Management System
ETCS	European Train Control System
Eurocab (European Vital Computer)	European Vital Computer (EVC)
EVC	European Vital Computer
FFFIS	Form Fit Functional Interface Specifications
FIS	Functional Interface Specifications
FRS	Functional Requirements Specification
HS	High Speed
IS	Isolation
LRBG	Last Relevant Balise Group
TM	Mobile Terminal
MA	Movement Authority
MRSP	Most Restrictive Speed Profile
PT	Post Trip
RAM	Reliability, Availability, Manutibility
RAMS	Reliability, Availability, Manutibility and Safety
RMP	Reverse Movement Protection
RAP	Roll Away Protection
SBD	Service Brake Deceleration
SMS	Short Messages Service
SE	Specific Transmission Module European (STM European)
SoM	Start of Mission
SvL	Supervised Location
SF	System Failure
SRS	System Requirements Specifications
TAF	Track Ahead Free

