

openETCS System analysis - High Level Functions

Main function	Sub function	Source	Receiver
Build BG message and use BG as location reference			
	Building BG Messages	BTM	EVC
	Check BG consistency	BTM	EVC
	Determine BG encountering data and use BG as reference location	BTM	EVC
Check radio consistency		RIU	EVC
Select usable information			
Manage STM's			
	Perform STM coding and decoding	STM	EVC
	Filter telegram from STM's	STM	EVC
	Manage STM's connection	STM	EVC
	Manage STM's state	STM	EVC
	Send data to STM's	EVC	EVC
	Manage specific STM data entry	DMI	EVC
	Manage STM's commands	STM	EVC
Determine train location information		ODO	EVC
Control route suitability		BTM	EVC
Manage track conditions		BTM	EVC
Ensure train protections			
	Manage reception of MA information	RIU	EVC
	Manage TSR	RIU	EVC
	Manage brakes and traktion models	BTM	EVC
	Manage MA	RIU	EVC
	Determine MRSP for FS OS		

	Determine dynamic speed curves for FS OS	EVC	
	Perform FS OS supervision and related actions	EVC	
Ensure train protection in SR			
	Determine MRSP for SR mode	EVC	
	Determine dynamic speed curves for SR		
	Manage SR authorisation	EVC	
	Perform SR supervision and related actions	EVC	
Ensure train protection in UN			
	Determine MRSP for UN mode	EVC	
	Determine dynamic speed curves for UN	EVC	
	Perform UN supervision and related actions	EVC	
Ensure train protection in SH			
	Determine ceiling speed for SH mode	EVC	
	Perform SH supervision and related actions	EVC	
	Manage reception of list of balises for SH area	EVC	
Ensure train protection in TR		EVC	
Ensure train protection in SF		EVC	
Ensure train protection in SB		EVC	
Ensure train protection in PT		EVC	
Ensure train protection in RV		EVC	

Manage emergency stop messages		EVC	Brake controll
Ensure train protection in SN		EVC	
Manage MA request for entry into level 2		RIU	EVC
Manage mode and level and procedures ancillary functions			
	compute mode		
	compute level		
Manage procedures			
	capture data for mission	EVC	
	handle OS procedure	EVC	
	handle SH procedure	EVC	
	handle RV procedure	EVC	
	handle override EOA	EVC	
Perform ancillary functions			
	Manage track ahead free	RIU	EVC
	Display text messages coming from trackside	BTM	DMI
	Display geographical position	BTM	DMI
	End mission	EVC	
	Manage national values	BTM	EVC
	store configuration data	EVC	
	Declare master onboard	EVC	
	Detecte change of orientation	ODO	EVC
Doors controll		TIU	EVC
Brake commands		EVC	Brake controll
Measure train movements		ODO	EVC
Manage radio session			

	Perform radio coding and decoding	RIU	EVC
	Manage communication session with RBC	RIU	EVC
	Perform mobile registration	BTM	EVC
Manage juridical data and maintenance date			
	Record juridical data	EVC	JRU
	access to juridical data	EVC	JRU
	UTC clock	EVC	JRU
	Display onboard equipment status	EVC	JRU
Provide Driver interface			
Perform tests			
	Perform self tests	DMI	Brake controll
	Perform EB tests	DMI	Brake controll
	Monitor braking state	EVC	Brake controll