

EZ10 GEN0 GEN1 Core Control CAN Interface Definition



DOCUMENT PURPOSE

This document presents the signals exchanged between the navigation computer and the plateform used for vehicle automated control. It also presents a few signals exchanged within the platform used for debug purposes.

With:

E4V_BMS = battery management system
Curtis_1238 = Traction controller
Curtis_1310 = Main control unit

	APPLICABLE DOCUMENTS		
#	Ref / Name	Purpose	Version
1	EZ10_V2_3_RD_v1.0-LMS.dbf	CAN database for EZ10 Gen0/1 R&D projects	v1.0
2	EM-EZ10PROD-IDD-00009-EN-revA0_EZ10_Gen0_Gen1_EZ10_Command_for_R&D_purposes	How to Command an EZ10 Gen0/1 for R&D purposes	A0

			DOCUMENT TRACKING
Version	Edits completed by	Date	Description of edit
A0	Tommy Theard	07/01/2019	Document creation
A1	Nicolas Péloffy	7/5/2020	Added information about battery voltage, battery current, Motor current RMS
A2	Nicolas Péloffy	2/7/2020	Added heartbeat PCNav info

From	То	Message	ID	DLC	Byte Bit	Position	Data	Туре	Type 2	Unit	Factor	Raw Data	Display Data	Cyclic or Event	Frequency	Description
Navigation PC		Recv_from_PC_1	0x193	8	Byte 0 B0	0	PC_CAN_Command_Accel_(LSB)	Int 16 Bits		m/s²	0.001	-32768 - 32767	-32.768 - 32.767	Cyclic	20 ms	Acceleration comand wished to reach the speed command
		Kecv_HoHI_PC_1		۰				IIIL 10 BILS	Signed	111/5	0.001	-32/00 - 32/0/	-32.708 - 32.707	Cyclic	< 200 ms or watchdog will be triggered	Acceleration comand wished to reach the speed command
Navigation PC Navigation PC			0x193 0x193	8	Byte 0 B1 Byte 0 B2	2	PC_CAN_Command_Accel_(LSB) PC_CAN_Command_Accel_(LSB)									
Navigation PC			0x193	8	Byte 0 B3	3	PC_CAN_Command_Accel_(LSB)									
Navigation PC			0x193	8	Byte 0 B4	4	PC_CAN_Command_Accel_(LSB)									
Navigation PC			0x193	8	Byte 0 B5	5	PC_CAN_Command_Accel_(LSB)									
Navigation PC Navigation PC			0x193 0x193	8	Byte 0 B6 Byte 0 B7	6 7	PC_CAN_Command_Accel_(LSB) PC_CAN_Command_Accel_(LSB)									
Navigation PC		Recv_from_PC_1	0x193	8	Byte 0 B7	8	PC_CAN_COMMAND_ACCEL_(LSB) PC CAN Command Accel (MSB)				l					
Navigation PC		Kecv_Holli_FC_1	0x193	8	Byte 1 B1	9	PC CAN Command Accel (MSB)									
Navigation PC	CURTIS_1238		0x193	8	Byte 1 B2	10	PC_CAN_Command_Accel_(MSB)									
Navigation PC			0x193	8	Byte 1 B3	11	PC_CAN_Command_Accel_(MSB)									
Navigation PC			0x193 0x193	8	Byte 1 B4 Byte 1 B5	12 13	PC_CAN_Command_Accel_(MSB) PC_CAN_Command_Accel_(MSB)									
Navigation PC Navigation PC			0x193 0x193	8	Byte 1 B6	14	PC_CAN_Command_Accel_(MSB) PC_CAN_Command_Accel_(MSB)									
Navigation PC			0x193	8	Byte 1 B7	15	PC_CAN_Command_Accel_(MSB)									
Navigation PC	Ť	Recv_from_PC_1	0x193	8	Byte 2 B0	16	PC_CAN_Command_Speed_(LSB)	Int 16 Bits	Signed	m/s	0.001	-32768 - 32767	-32.768 - 32.767	Cyclic	20 ms < 200 ms or watchdog will be triggered	Speed command in m/s*1 000.
Navigation PC	CURTIS_1238		0x193	8	Byte 2 B1	17	PC_CAN_Command_Speed_(LSB)									
Navigation PC		·	0x193	8	Byte 2 B2	18	PC_CAN_Command_Speed_(LSB)									
Navigation PC			0x193	8	Byte 2 B3	19	PC_CAN_Command_Speed_(LSB)	-	\vdash							
Navigation PC Navigation PC			0x193 0x193	8	Byte 2 B4 Byte 2 B5	20	PC_CAN_Command_Speed_(LSB) PC_CAN_Command_Speed_(LSB)	1			 					
Navigation PC			0x193	8	Byte 2 B6	22	PC_CAN_Command_Speed_(LSB)									
Navigation PC	CURTIS_1238		0x193	8	Byte 2 B7	23	PC_CAN_Command_Speed_(LSB)									
Navigation PC		Recv_from_PC_1	0x193	8	Byte 3 B0	24	PC_CAN_Command_Speed_(MSB)									
Navigation PC			0x193 0x193	8	Byte 3 B1 Byte 3 B2	25 26	PC_CAN_Command_Speed_(MSB)									
Navigation PC Navigation PC			0x193 0x193	8	Byte 3 B3	26	PC_CAN_Command_Speed_(MSB) PC_CAN_Command_Speed_(MSB)									
Navigation PC			0x193	8	Byte 3 B4	28	PC_CAN_Command_Speed_(MSB)									
Navigation PC			0x193	8	Byte 3 B5	29	PC_CAN_Command_Speed_(MSB)									
Navigation PC			0x193	8	Byte 3 B6	30	PC_CAN_Command_Speed_(MSB)									
Navigation PC	CURTIS_1238		0x193	8	Byte 3 B7	31	PC_CAN_Command_Speed_(MSB)									
Navigation PC	CURTIS_1238	Recv_from_PC_1	0x193	8	Byte 4 B0	32	PC_CAN_Command_Steer_Front_Rad_(LSB)	Int 16 Bits	Signed	Rad	0.0001	-32768 - 32767	-3.2768 - 3.2767	Cyclic	20 ms < 200 ms or watchdog will be triggered	Front steering angle command in radian * 10000
Navigation PC			0x193	8	Byte 4 B1	33	PC_CAN_Command_Steer_Front_Rad_(LSB)									
Navigation PC			0x193	8	Byte 4 B2	34	PC_CAN_Command_Steer_Front_Rad_(LSB)									
Navigation PC Navigation PC			0x193 0x193	8	Byte 4 B3 Byte 4 B4	35 36	PC_CAN_Command_Steer_Front_Rad_(LSB) PC_CAN_Command_Steer_Front_Rad_(LSB)									
Navigation PC			0x193	8	Byte 4 B5	37	PC_CAN_Command_Steer_Front_Rad_(LSB)									
Navigation PC			0x193	8	Byte 4 B6	38	PC_CAN_Command_Steer_Front_Rad_(LSB)									
Navigation PC			0x193	8	Byte 4 B7	39	PC_CAN_Command_Steer_Front_Rad_(LSB)									
Navigation PC		Recv_from_PC_1	0x193	8	Byte 5 B0	40	PC_CAN_Command_Steer_Front_Rad_(MSB)									
Navigation PC Navigation PC			0x193 0x193	8	Byte 5 B1 Byte 5 B2	41	PC_CAN_Command_Steer_Front_Rad_(MSB) PC_CAN_Command_Steer_Front_Rad_(MSB)									
Navigation PC			0x193	8	Byte 5 B3	43	PC_CAN_Command_Steer_Front_Rad_(MSB)									
Navigation PC			0x193	8	Byte 5 B4	44	PC_CAN_Command_Steer_Front_Rad_(MSB)									
Navigation PC			0x193	8	Byte 5 B5	45	PC_CAN_Command_Steer_Front_Rad_(MSB)									
Navigation PC Navigation PC			0x193 0x193	8	Byte 5 B6 Byte 5 B7	46 47	PC_CAN_Command_Steer_Front_Rad_(MSB) PC_CAN_Command_Steer_Front_Rad_(MSB)									
	î	Davidson DC	1					I 4C P.:	Claused	0.0004.0.	0.0004	22760 22767	2.2760 2.2761	Code	20 ms	December 1 and 1 a
Navigation PC Navigation PC		Recv_from_PC	0x193 0x193	8	Byte 6 B0	48	PC_CAN_Command_Steer_Rear_Rad_(LSB) PC_CAN_Command_Steer_Rear_Rad_(LSB)	int 16 Bits	Signed	v.UUU1 Rad	0.0001	-32768 - 32767	-3.2768 - 3.2767	Cyclic	< 200 ms or watchdog will be triggered	Rear steering angle command in radian * 10000
Navigation PC			0x193	8	Byte 6 B2	50	PC_CAN_Command_Steer_Rear_Rad_(LSB)									
Navigation PC	CURTIS_1238		0x193	8	Byte 6 B3	51	PC_CAN_Command_Steer_Rear_Rad_(LSB)									
Navigation PC			0x193	8	Byte 6 B4	52	PC_CAN_Command_Steer_Rear_Rad_(LSB)									
Navigation PC Navigation PC			0x193 0x193	8	Byte 6 B5 Byte 6 B6	53 54	PC_CAN_Command_Steer_Rear_Rad_(LSB) PC_CAN_Command_Steer_Rear_Rad_(LSB)									
Navigation PC			0x193 0x193	8	Byte 6 B7	55	PC_CAN_Command_Steer_Rear_Rad_(LSB) PC_CAN_Command_Steer_Rear_Rad_(LSB)									
Navigation PC		Recv_from_PC	0x193	8	Byte 7 B0	56	PC_CAN_Command_Steer_Rear_Rad_(MSB)									
Navigation PC	CURTIS_1238		0x193	8	Byte 7 B1	57	PC_CAN_Command_Steer_Rear_Rad_(MSB)									
Navigation PC			0x193	8	Byte 7 B2	58	PC_CAN_Command_Steer_Rear_Rad_(MSB)									
Navigation PC			0x193 0x193	8	Byte 7 B3 Byte 7 B4	59 60	PC_CAN_Command_Steer_Rear_Rad_(MSB)	-								
Navigation PC Navigation PC			0x193	8	Byte 7 B4 Byte 7 B5	61	PC_CAN_Command_Steer_Rear_Rad_(MSB) PC_CAN_Command_Steer_Rear_Rad_(MSB)									
Navigation PC			0x193	8	Byte 7 B6	62	PC_CAN_Command_Steer_Rear_Rad_(MSB)									
Navigation PC	CURTIS_1238		0x193	8	Byte 7 B7	63	PC_CAN_Command_Steer_Rear_Rad_(MSB)									
Navigation PC		Recv_from_PC_2	0x293	8	Byte 0 B0	0	(Reserved)									
Navigation PC Navigation PC			0x293 0x293	8	Byte 0 B1 Byte 0 B2	2	(Reserved)	-								
Navigation PC Navigation PC			0x293 0x293	8	Byte 0 B2 Byte 0 B3	3	(Reserved) PC_CAN_Left_Blinker	Boolean	Boolean	NA	NA NA	NA NA	NA NA			1 = Request Left Blinker
- TO THE STATE OF THE			0.4233	U	5,00 55		. C_Ccerc_billiker	DOOLEGIT	DOOLEGII						1	

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From To	Message	ID	DLC	Byte	Bit		Data	Type	Type 2	Unit	Factor	Raw Data	Display Data	Cyclic or Event	Frequency	Description
Navigation PC CURTIS_1310		0x293	8	Byte 0	_	4	PC_CAN_Right_Blinker	Boolean	Boolean	NA	NA	NA	NA			1 = Request Right Blinker
Navigation PC CURTIS_1310		0x293	8	Byte 0		5	PC_CAN_Hazard_Warning_Lights	Boolean	Boolean	NA	NA	NA	NA			1 = Request Hazard Warning lights
Navigation PC CURTIS_1310		0x293	8	Byte 0		6	(Reserved)									
Navigation PC CURTIS_1310		0x293	8	Byte 0		7	(Reserved)	+								
Navigation PC CURTIS_1310	Recv_from_PC_2	0x293	8	Byte 1		8	(Reserved)									
Navigation PC CURTIS_1310		0x293	8	Byte 1	B1	9	(Reserved)									
Navigation PC CURTIS_1310 Navigation PC CURTIS_1310		0x293 0x293	8	Byte 1 Byte 1		10 11										
Navigation PC CURTIS_1310		0x293 0x293	8	Byte 1		12										
Navigation PC CURTIS_1310		0x293	8	Byte 1		13										
Navigation PC CURTIS_1310		0x293	8	Byte 1	B6	14										
Navigation PC CURTIS 1310		0x293	8	Byte 1	B7	15										
Navigation PC CURTIS_1310	Recv_from_PC_2	0x293	8	Byte 2	+	16	(Reserved)									
Navigation PC CURTIS_1310	Necv_IIIII_FC_2	0x293	8	Byte 2		17	(Reserved)									
Navigation PC CURTIS_1310		0x293	8	Byte 2		18	(Reserved)									
Navigation PC CURTIS_1310		0x293	8	Byte 2		19	(Reserved)	1								
Navigation PC CURTIS_1310		0x293	8	Byte 2		20	(Reserved)									
Navigation PC CURTIS_1310		0x293	8	Byte 2		21	(Reserved)									
Navigation PC CURTIS_1310		0x293	8	Byte 2		22	(Reserved)									
Navigation PC CURTIS_1310		0x293	8	Byte 2		23										
		i						1							20 ms	
Navigation PC CURTIS_1310	Recv_from_PC_2	0x293	8	Byte 3	В0	24	PC_CAN_Config_Param	Boolean	Boolean	NA	NA	NA	NA	Cyclic	< 200 ms or watchdog will be triggered	1 = We want to force parameterization using CAN
Navigation PC CURTIS_1310		0x293	8	Byte 3	B1	25	(Reserved)									
Navigation PC CURTIS_1310		0x293	8	Byte 3		26	PC_CAN_PAR_Warning_On_Null_Speed	Boolean	Boolean							
Navigation PC CURTIS_1310		0x293	8	Byte 3		27	(Reserved)									
Navigation PC CURTIS_1310		0x293	8	Byte 3		28	(Reserved)									
Navigation PC CURTIS_1310		0x293	8	Byte 3		29	PC_CAN_PAR_Use_Ramp	Boolean	Boolean	NA	NA	NA	NA			1 = Use the ramp to be used with "PC_CAN_Config_Param"=1
Navigation PC CURTIS_1310		0x293	8	Byte 3		30	PC_CAN_PAR_Use_Led_Column	Boolean	Boolean	NA	NA	NA	NA			1 = Use led column to be used with "PC_CAN_Config_Param"=1
Navigation PC CURTIS_1310		0x293	8	Byte 3		31	(Reserved)									
Navigation PC CURTIS_1310	Recv_from_PC_2	0x293	8	Byte 4	В0	32										
Navigation PC CURTIS_1310		0x293	8	Byte 4		33										
Navigation PC CURTIS_1310		0x293	8	Byte 4	_	34										
Navigation PC CURTIS_1310		0x293	8	Byte 4												
Navigation PC CURTIS_1310		0x293	8	Byte 4		36										
Navigation PC CURTIS_1310		0x293	8	Byte 4												
Navigation PC CURTIS_1310		0x293	8	Byte 4		38										
Navigation PC CURTIS_1310		0x293	8	Byte 4		39										
Navigation PC CURTIS_1310	Recv_from_PC_2	0x293	8	Byte 5		40										
Navigation PC CURTIS_1310		0x293	8	Byte 5	_	41										
Navigation PC CURTIS_1310		0x293	8	Byte 5 Byte 5		42										
					B3	43										
Navigation PC CURTIS_1310		0x293	8	,												
Navigation PC CURTIS_1310		0x293	8	Byte 5	B4	44										
Navigation PC CURTIS_1310 Navigation PC CURTIS_1310		0x293 0x293	8	Byte 5 Byte 5	B4 B5	45										
Navigation PC CURTIS_1310 Navigation PC CURTIS_1310 Navigation PC CURTIS_1310		0x293 0x293 0x293	8 8	Byte 5 Byte 5 Byte 5	B4 B5 B6	45 46										
Navigation PC CURTIS_1310 Navigation PC CURTIS_1310 Navigation PC CURTIS_1310 Navigation PC CURTIS_1310		0x293 0x293 0x293 0x293	8 8 8	Byte 5 Byte 5 Byte 5 Byte 5	B4 B5 B6 B7	45 46 47										
Navigation PC CURTIS_1310	Recv_from_PC_2	0x293 0x293 0x293 0x293 0x293	8 8 8 8	Byte 5 Byte 5 Byte 5 Byte 5 Byte 6	B4 B5 B6 B7 B0	45 46 47 48										
Navigation PC CURTIS_1310	Recv_from_PC_2	0x293 0x293 0x293 0x293 0x293 0x293	8 8 8 8 8	Byte 5 Byte 5 Byte 5 Byte 5 Byte 6 Byte 6	B4 B5 B6 B7 B0 B1	45 46 47 48 49										
Navigation PC CURTIS_1310 Navigation PC CURTIS_1310	Recv_from_PC_2	0x293 0x293 0x293 0x293 0x293 0x293 0x293	8 8 8 8 8	Byte 5 Byte 5 Byte 5 Byte 5 Byte 6 Byte 6 Byte 6	B4 B5 B6 B7 B0 B1 B2	45 46 47 48 49 50										
Navigation PC CURTIS_1310	Recv_from_PC_2	0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293	8 8 8 8 8 8 8	Byte 5 Byte 5 Byte 5 Byte 5 Byte 6 Byte 6 Byte 6 Byte 6	B4 B5 B6 B7 B0 B1 B2 B3	45 46 47 48 49 50 51										
Navigation PC	Recv_from_PC_2	0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293	8 8 8 8 8 8 8 8	Byte 5 Byte 5 Byte 5 Byte 5 Byte 6 Byte 6 Byte 6 Byte 6 Byte 6 Byte 6	B4 B5 B6 B7 B0 B1 B2 B3 B4	45 46 47 48 49 50 51										
Navigation PC	Recv_from_PC_2	0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293	8 8 8 8 8 8 8 8	Byte 5 Byte 5 Byte 5 Byte 5 Byte 6	B4 B5 B6 B7 B0 B1 B2 B3 B4 B5	45 46 47 48 49 50 51 52 53										
Navigation PC	Recv_from_PC_2	0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293	8 8 8 8 8 8 8 8 8	Byte 5 Byte 5 Byte 5 Byte 5 Byte 6	B4 B5 B6 B7 B0 B1 B2 B3 B4 B5	45 46 47 48 49 50 51 52 53										
Navigation P.C		0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293	8 8 8 8 8 8 8 8 8 8 8 8	Byte 5 Byte 5 Byte 5 Byte 6	B4 B5 B6 B7 B0 B1 B2 B3 B4 B5 B6	45 46 47 48 49 50 51 52 53 54										
Navigation PC	Recv_from_PC_2 Recv_from_PC_2	0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293	8 8 8 8 8 8 8 8 8 8	Byte 5 Byte 5 Byte 5 Byte 6 Byte 7	B4 B5 B6 B7 B0 B1 B2 B3 B4 B5 B6 B7	45 46 47 48 49 50 51 52 53 54 55										
Navigation PC		0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	Byte 5 Byte 5 Byte 6 Byte 7 Byte 7	B4 B5 B6 B7 B0 B1 B2 B3 B4 B5 B6 B7 B0 B1	45 46 47 48 49 50 51 52 53 54 55 56										
Navigation PC		0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293	8 8 8 8 8 8 8 8 8 8 8 8 8	Byte 5 Byte 5 Byte 6 Byte 7 Byte 7 Byte 7	B4 B5 B6 B7 B0 B1 B2 B3 B4 B5 B6 B7 B0 B1 B2	45 46 47 48 49 50 51 52 53 54 55 56 57										
Navigation PC		0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293	8 8 8 8 8 8 8 8 8 8 8 8 8	Byte 5 Byte 5 Byte 6 Byte 7 Byte 7 Byte 7	B4 B5 B6 B7 B0 B1 B2 B3 B4 B5 B6 B7 B0 B1 B2 B3	45 46 47 48 49 50 51 52 53 54 55 56 57 58 59										
Navigation PC		0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293 0x293	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	Byte 5 Byte 5 Byte 5 Byte 6 Byte 7 Byte 7 Byte 7 Byte 7	B4 B5 B6 B7 B0 B1 B2 B3 B4 B5 B6 B7 B0 B1 B2 B3	45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60										
Navigation P.C		0x293 0x293	8 8 8 8 8 8 8 8 8 8 8 8 8	Byte 5 Byte 5 Byte 5 Byte 6 Byte 7 Byte 7 Byte 7 Byte 7 Byte 7	B4 B5 B6 B7 B0 B1 B2 B3 B4 B5 B6 B7 B0 B1 B2 B3 B4 B5 B6 B7	45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60										
Navigation PC		0x293 0x293	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	Byte 5 Byte 5 Byte 5 Byte 6 Byte 7 Byte 7 Byte 7 Byte 7 Byte 7	B4 B5 B6 B7 B0 B1 B2 B3 B4 B5 B6 B7 B0 B1 B2 B3 B4 B5 B6 B7 B0 B1 B6 B7 B0 B1 B5 B6 B6 B7 B7 B7 B8 B8 B8 B8 B8 B8 B8 B8 B8 B8 B8 B8 B8	45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62										
Navigation P.C CURTIS_1310	Recv_from_PC_2	0x293 0x293	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	Byte 5 Byte 5 Byte 5 Byte 6 Byte 7	B4 B5 B6 B7 B0 B1 B2 B3 B4 B5 B6 B7 B0 B1 B2 B3 B4 B5 B6 B7	45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60	Doors Banuert	Bool	Bool	NA NA	NΔ	NA NA	NA NA	Cyclic	Spine	1 = Door request
Navigation P.C		0x293 0x	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	Byte 5 Byte 5 Byte 5 Byte 6 Byte 7	B4 B5 B6 B7 B0 B1 B2 B3 B4 B5 B6 B7 B0 B1 B2 B3 B4 B5 B6 B7 B0	45 46 47 48 49 50 51 52 53 54 55 55 56 57 58 60 61 62 63	Doors_Request Ramp Request	Bool	Bool	NA NA	NA NA	NA NA	NA NA	Cyclic Cyclic		1 = Door request 1 = Ramo request (implies automatical door request)
Navigation PC	Recv_from_PC_2	0x293 0x293	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	Byte 5 Byte 5 Byte 5 Byte 6 Byte 7	B4 B5 B6 B7 B0 B1 B2 B3 B4 B5 B6 B7 B0 B1 B2 B3 B4 B5 B6 B7 B0 B1 B2 B3 B4 B5 B6 B7 B0 B1 B1 B2 B3 B4 B5 B6 B6 B7 B7 B7 B8 B8 B8 B8 B8 B8 B8 B8 B8 B8 B8 B8 B8	45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 0	Ramp_Request	Bool Bool	Bool Bool Bool	NA	NA		NA	Cyclic Cyclic Cyclic Cyclic	50ms	1 = Door request 1 = Door request 1 = San request (implies automatical door request) 1 = Stoo Station
Navigation PC	Recv_from_PC_2	0x293 0x293	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	Byte 5 Byte 5 Byte 5 Byte 6 Byte 7 Byte 0 Byte 0 Byte 0 Byte 0	B4 B5 B6 B7 B0 B1 B2 B3 B4 B5 B6 B7 B0 B1 B2 B3 B4 B5 B6 B7 B0 B1 B2 B3 B4 B5 B6 B7 B0 B1 B1 B1 B2 B3 B4 B4 B5 B5 B6 B7 B7 B8 B8 B7 B8 B8 B8 B8 B8 B8 B8 B8 B8 B8 B8 B8 B8	45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 0 1	Ramp_Request Stop_Station	Bool	Bool Bool	NA NA	NA NA	NA NA	NA NA	Cyclic Cyclic	50ms 50ms	1 = Ramp request (implies automatical door request) 1 = Stop Station
Navigation PC	Recv_from_PC_2	0x293 0x	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	Byte 5 Byte 5 Byte 5 Byte 6 Byte 7 Byte 6	B4 B5 B6 B7 B1 B2 B3 B4 B5 B6 B7 B0 B1 B2 B3 B4 B5 B6 B7 B0 B1 B2 B3 B4 B4 B5 B5 B6 B7 B0 B1 B1 B1 B2 B2 B3 B3 B4 B4 B5 B5 B6 B7 B7 B7 B7 B7 B7 B7 B7 B7 B7 B7 B7 B7	45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 0	Ramp_Request	Bool	Bool	NA	NA	NA	NA	Cyclic	50ms 50ms	1 = Ramp request (implies automatical door request)
Navigation PC	Recv_from_PC_2	0x293 0x293	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	Byte 5 Byte 5 Byte 5 Byte 6 Byte 7 Byte 0 Byte 0 Byte 0 Byte 0	B4 B5 B6 B7 B0 B1 B2 B3 B4 B5 B6 B7 B0 B1 B2 B3 B4 B5 B6 B7 B0 B1 B2 B3 B4 B5 B3 B4 B5 B3 B4 B5 B3 B4 B5 B6 B7 B7 B7 B8 B8 B8 B8 B8 B8 B8 B8 B8 B8 B8 B8 B8	45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 0 1	Ramp_Request Stop_Station	Bool	Bool Bool	NA NA	NA NA	NA NA	NA NA	Cyclic Cyclic	50ms 50ms 50ms	1 = Ramp request (implies automatical door request) 1 = Stop Station Should be a square with maximum 150 ms ON and 150 ms OFF. Ideally 100 ms ON
Navigation PC	Recv_from_PC_2	0x293 0x294 0x214 0x214 0x214 0x214	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	Byte 5 Byte 5 Byte 5 Byte 6 Byte 7 Byte 8 Byte 9	B4 B5 B6 B7 B6 B6 B7 B6 B6 B7 B7 B6 B6 B7 B7 B6 B6 B7 B7 B6 B7 B7 B6 B7	45 46 47 48 49 50 51 52 53 54 55 56 57 58 60 61 62 63 0 1	Ramp_Request Stop_Station Nav_PC_Hearbeat	Bool Bool Bool	Bool Bool Bool	NA NA NA	NA NA NA	NA NA NA	NA NA NA	Cyclic Cyclic Cyclic	50ms 50ms 50ms 50ms	1 = Ramp request (implies automatical door request) 1 = Stop Station Should be a square with maximum 150 ms ON and 150 ms OFF. Ideally 100 ms ON and 100 ms OFF
Navigation P.C	Recv_from_PC_2	0x293 0x293	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	Byte 5 Byte 5 Byte 5 Byte 5 Byte 6 Byte 7 Byte 9 Byte 0	B4 B5 B6 B7 B0 B1 B2 B3 B4 B5 B6 B7 B0 B1 B1 B5 B6 B7 B6 B7 B0 B1 B1 B2 B3 B4 B5 B6 B7 B0 B1 B1 B2 B3 B4 B5 B6 B7 B0 B1 B1 B2 B3 B4 B5	45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 0	Ramp_Request Stop_Station Nav_PC_Hearbeat Pedestrian_Alert	Bool Bool Bool	Bool Bool Bool	NA NA NA	NA NA NA	NA NA NA	NA NA NA	Cyclic Cyclic Cyclic Cyclic	50ms 50ms 50ms 50ms	1 = Ramp request (implies automatical door request) 1 = Stop Station Should be a square with maximum 150 ms ON and 150 ms OFF. Ideally 100 ms ON and 100 ms OFF 1 = Tram bell request (continuous)
Navigation PC	Recv_from_PC_2	0x293 0x294 0x29 0x29 0x29 0x29 0x29 0x29 0x29 0x29	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	Byte 5 Byte 5 Byte 5 Byte 6 Byte 7 Byte 8 Byte 9 Byte 0 Byte 0 Byte 0	B4 B5 B6 B6 B1 B2 B6 B6 B6 B1 B2 B6 B6 B6 B1 B1 B2 B6 B6 B1 B1 B2 B6 B6 B1 B1 B2 B6 B6 B6 B6 B1 B1 B2 B6	45 46 47 47 48 49 50 51 52 53 54 55 55 56 57 58 59 60 61 62 63 0 1 2	Ramp_Request Stop_Station Nav_PC_Hearbeat Pedestrian_Alert HeadLight_Flash_Request	Bool Bool Bool	Bool Bool Bool	NA NA NA	NA NA NA	NA NA NA	NA NA NA	Cyclic Cyclic Cyclic Cyclic	50ms 50ms 50ms 50ms 50ms	1 = Ramp request (implies automatical door request) 1 = Stop Station Should be a square with maximum 150 ms ON and 150 ms OFF. Ideally 100 ms ON and 100 ms OFF 1 = Tram bell request (continuous)
Navigation PC	Recv_from_PC_2	0x293 0x294 0x294 0x294 0x294 0x29 0x29 0x29 0x29 0x29 0x29 0x29 0x29	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	Byte 5 Byte 5 Byte 5 Byte 6 Byte 7 Byte 9 Byte 0	B4 B5 B6 B6 B1 B2 B6 B6 B6 B1 B2 B6 B6 B6 B1 B1 B2 B6 B6 B1 B1 B2 B6 B6 B1 B1 B2 B6 B6 B6 B6 B1 B1 B2 B6	45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 0 1 2	Ramp_Request Stop_Station Nav_PC_Hearbeat Pedestrian_Alert HeadLight_Flash_Request (Reserved)	Bool Bool Bool Bool	Bool Bool Bool Bool	NA NA NA NA	NA NA NA NA	NA NA NA NA	NA NA NA NA	Cyclic Cyclic Cyclic Cyclic Cyclic Cyclic	50ms 50ms 50ms 50ms 50ms	1 = Ramp request (implies automatical door request) 1 = Stop Station Should be a square with maximum 150 ms ON and 150 ms OFF. Ideally 100 ms ON and 100 ms OFF 1 = Tram bell request (continuous) 1 = Headlight Flash request (continuous)

From	То	Message	ID	DLC	Byte	Bit	Position	Data	Type	Type 2	Unit	Factor	Raw Data	Display Data	Cyclic or Event	Frequency	Description
Navigation PC	SAFETY_PLC		0x214	8	Byte 1	B1	9	(Reserved)									
Navigation PC	SAFETY_PLC		0x214	8	Byte 1	B2	10	(Reserved)									
Navigation PC	SAFETY_PLC		0x214	8	Byte 1	В3	11	(Reserved)									
Navigation PC	SAFETY_PLC		0x214	8	Byte 1	B4	12	(Reserved)									
Navigation PC	SAFETY_PLC		0x214	8	Byte 1	B5	13	(Reserved)									
Navigation PC	SAFETY_PLC		0x214	8	Byte 1	В6	14	(Reserved)									
Navigation PC	SAFETY_PLC		0x214	8	Byte 1	В7	15	(Reserved)									

From To Messag															
			C Byte			Data	Type	Type 2		Factor	Raw Data	Display Data	Cyclic or Event	Frequency	Description
E4V_BMS CURTIS_1310 E4V_DATA_I		0x580 8	,		0	Battery_Current_(LSB)	Int 16 bits	Signed	100mA			-5000 - 2500	Cyclic	100 ms	
E4V_BMS CURTIS_1310 E4V_DATA_I		0x580 8			1	Battery_Current_(LSB)									
E4V_BMS CURTIS_1310 E4V_DATA_I		0x580 8			2	Battery_Current_(LSB)									
E4V_BMS CURTIS_1310 E4V_DATA_I		0x580 8			3	Battery_Current_(LSB)									
E4V_BMS CURTIS_1310 E4V_DATA_I	U_1	0x580 8	Byte 0	B4	4	Battery_Current_(LSB)									
E4V_BMS CURTIS_1310 E4V_DATA_I	U_1	0x580 8	Byte 0	B5	5	Battery_Current_(LSB)									
E4V_BMS CURTIS_1310 E4V_DATA_I	U_1	0x580 8	Byte 0	B6	6	Battery_Current_(LSB)									
E4V_BMS CURTIS_1310 E4V_DATA_I	U_1	0x580 8	Byte 0	B7	7	Battery_Current_(LSB)									
E4V_BMS CURTIS_1310 E4V_DATA_I	U 1	0x580 8	Byte 1	B0	8	Battery_Current_(MSB)									
E4V_BMS CURTIS_1310 E4V_DATA_I		0x580 8			9	Battery_Current_(MSB)									
E4V_BMS CURTIS_1310 E4V_DATA_I		0x580 8			10	Battery_Current_(MSB)									
E4V_BMS CURTIS_1310 E4V_DATA_I			Byte 1		11	Battery_Current_(MSB)									
E4V_BMS CURTIS_1310 E4V_DATA_I		0x580 8			12	Battery_Current_(MSB)									
E4V_BMS CURTIS_1310 E4V_DATA_I		0x580 8			13	Battery_Current_(MSB)									
E4V_BMS CURTIS_1310 E4V_DATA_I		0x580 8		B6	14	Battery_Current_(MSB)									
E4V_BMS CURTIS_1310 E4V_DATA_I		0x580 8		B7	15	Battery_Current_(MSB)									
E4V_BMS CURTIS_1310 E4V_DATA_I		0x580 8	$\overline{}$		16	Battery_Voltage_(LSB)	Int 16 bits	Unsigned ?	10m\/			0 - 15000	Cyclic	100 ms	
E4V_BMS CURTIS_1310 E4V_DATA_I		0x580 8	,	B1	17	Battery_Voltage_(LSB)	IIIC 10 DIGS	Olisigneu :	101114			0 - 13000	Cyclic	100 1113	
E4V BMS CURTIS 1310 E4V DATA I		0x580 8			18	Battery_Voltage_(LSB)									
E4V_BMS CURTIS_1310 E4V_DATA_I		0x580 8	,	_	19	Battery_Voltage_(LSB) Battery_Voltage_(LSB)						-		-	
E4V_BMS CURTIS_1310 E4V_DATA_I		0x580 8	,	B3	20							-			
E4V_BMS CURTIS_1310 E4V_DATA_I E4V_BMS CURTIS_1310 E4V_DATA_I		0x580 8		B5	20	Battery_Voltage_(LSB)	-					 			
E4V_BMS CURTIS_1310 E4V_DATA_I		0x580 8	_	_	-	Battery_Voltage_(LSB)									
			,		22	Battery_Voltage_(LSB)									
			- /		23	Battery_Voltage_(LSB)						<u> </u>			
E4V_BMS CURTIS_1310 E4V_DATA_I		0x580 8	<u> </u>		24	Battery_Voltage_(MSB)									
E4V_BMS CURTIS_1310 E4V_DATA_I		0x580 8	,		25	Battery_Voltage_(MSB)									
E4V_BMS CURTIS_1310 E4V_DATA_I		0x580 8			26	Battery_Voltage_(MSB)									
E4V_BMS CURTIS_1310 E4V_DATA_I		0x580 8	,	B3	27	Battery_Voltage_(MSB)									
E4V_BMS CURTIS_1310 E4V_DATA_I		0x580 8		B4	28	Battery_Voltage_(MSB)									
E4V_BMS CURTIS_1310 E4V_DATA_I		0x580 8	,		29	Battery_Voltage_(MSB)									
E4V_BMS CURTIS_1310 E4V_DATA_I		0x580 8	,		30	Battery_Voltage_(MSB)									
E4V_BMS CURTIS_1310 E4V_DATA_I		0x580 8	,		31	Battery_Voltage_(MSB)									
E4V_BMS CURTIS_1310 E4V_DATA_I			Byte 4		32	(Reserved)									
E4V_BMS CURTIS_1310 E4V_DATA_I			Byte 4		33	(Reserved)									
E4V_BMS CURTIS_1310 E4V_DATA_I			Byte 4		34	(Reserved)									
E4V_BMS CURTIS_1310 E4V_DATA_I			Byte 4		35	(Reserved)									
E4V_BMS CURTIS_1310 E4V_DATA_I			Byte 4		36	(Reserved)									
E4V_BMS CURTIS_1310 E4V_DATA_I			Byte 4		37	(Reserved)									
E4V_BMS CURTIS_1310 E4V_DATA_I	U_1	0x580 8	Byte 4	B6	38	(Reserved)									
E4V_BMS CURTIS_1310 E4V_DATA_I	U_1	0x580 8	Byte 4	B7	39	(Reserved)									
E4V_BMS CURTIS_1310 E4V_DATA_I	U_1	0x580 8	Byte 5	B0	40	Battery percentage	Int 8 bits	Unsigned ?	%	1	0 - 100	0 - 100	Cyclic	100 ms	
E4V_BMS CURTIS_1310 E4V_DATA_I	U_1	0x580 8	Byte 5	B1	41	Battery percentage									
E4V_BMS CURTIS_1310 E4V_DATA_I	U_1	0x580 8	Byte 5	B2	42	Battery percentage									
E4V_BMS CURTIS_1310 E4V_DATA_I	U_1	0x580 8	Byte 5	B3	43	Battery percentage									
E4V_BMS CURTIS_1310 E4V_DATA_I	U_1	0x580 8	Byte 5	B4	44	Battery percentage									
E4V_BMS CURTIS_1310 E4V_DATA_I	U_1	0x580 8	Byte 5	B5	45	Battery percentage									
E4V_BMS CURTIS_1310 E4V_DATA_I		0x580 8			46	Battery percentage									
E4V_BMS CURTIS_1310 E4V_DATA_I	U_1	0x580 8	Byte 5	B7	47	Battery percentage									
E4V_BMS CURTIS_1310 E4V_DATA_I	U_1	0x580 8	Byte 6	В0	48	(Reserved)									
E4V_BMS CURTIS_1310 E4V_DATA_I		0x580 8	Byte 6	_	49	(Reserved)									
E4V_BMS CURTIS_1310 E4V_DATA_I		0x580 8	Byte 6	B2	50	(Reserved)									
E4V_BMS CURTIS_1310 E4V_DATA_I			Byte 6			(Reserved)									
E4V_BMS CURTIS_1310 E4V_DATA_I		0x580 8			52	(Reserved)									
E4V_BMS CURTIS_1310 E4V_DATA_I		0x580 8			53	(Reserved)	1								
E4V_BMS CURTIS_1310 E4V_DATA_I			Byte 6			(Reserved)									
E4V_BMS CURTIS_1310 E4V_DATA_I			Byte 6			(Reserved)									
		0x580 8	_	$\overline{}$	56	(Reserved)									
E4V BMS CURTIS 1310 F4V DATA I		0x580 8	,		57	(Reserved)									
E4V_BMS CURTIS_1310 E4V_DATA_I E4V_BMS CURTIS_1310 E4V_DATA_I					58	(Reserved)									
E4V_BMS CURTIS_1310 E4V_DATA_I	U 1	0x580 8			59	(Reserved)							1		
E4V_BMS CURTIS_1310 E4V_DATA_I E4V_BMS CURTIS_1310 E4V_DATA_I		0x580 8 0x580 8	Byte 7	B3											
E4V_BMS	U_1	0x580 8		_		(Reserved)									1
E4V_BMS CURTIS_1310 E4V_DATA_I E4V_BMS CURTIS_1310 E4V_DATA_I E4V_BMS CURTIS_1310 E4V_DATA_I E4V_BMS CURTIS_1310 E4V_DATA_I	U_1 U_1	0x580 8 0x580 8	Byte 7	B4	60	(Reserved)						I			
E4V_BMS CURTIS_1310 E4V_DATA_I	U_1 U_1 U_1	0x580 8 0x580 8 0x580 8	Byte 7	B4 B5	60 61	(Reserved)									
E4V_BMS CURTIS_1310 E4V_DATA_I E4V_BMS CURTIS_1310 E4V_DATA_I E4V_BMS CURTIS_1310 E4V_DATA_I E4V_BMS CURTIS_1310 E4V_DATA_I E4V_BMS CURTIS_1310 E4V_DATA_I E4V_BMS CURTIS_1310 E4V_DATA_I	U_1 U_1 U_1 U_1	0x580 8 0x580 8 0x580 8 0x580 8	Byte 7 Byte 7 Byte 7	B4 B5 B6	60 61 62	(Reserved) (Reserved)									
E4V_BMS CURTIS_1310 E4V_DATA_I	U_1 U_1 U_1 U_1 U_1	0x580 8 0x580 8 0x580 8 0x580 8 0x580 8	Byte 7 Byte 7 Byte 7 Byte 7	B4 B5 B6 B7	60 61 62 63	(Reserved) (Reserved) (Reserved)									
E4V_BMS CURTIS_1310 E4V_DATA_I C4V_BMS CURTIS_1310 E4V_DATA_I C4V_BMS CURTIS_1310 E4V_DATA_I CURTIS_1238 E4V_BMS SEND_TO_	U_1 U_1 U_1 U_1 U_1	0x580 8 0x580 8 0x580 8 0x580 8 0x580 8 0x580 8	Byte 7 Byte 7 Byte 7 Byte 7 Byte 0	B4 B5 B6 B7 B0	60 61 62 63 0	(Reserved) (Reserved) (Reserved) (Reserved)									
E4V_BMS CURTIS_1310 E4V_DATA_I CURTIS_1238 E4V_BMS SEND_TO_ CURTIS_1238 E4V_BMS SEND_TO_	U_1 U_1 U_1 U_1 U_1 U_1	0x580 8 0x580 8 0x580 8 0x580 8 0x580 8 0x186 8	Byte 7 Byte 7 Byte 7 Byte 7 Byte 0 Byte 0	B4 B5 B6 B7 B0 B1	60 61 62 63 0	(Reserved) (Reserved) (Reserved) (Reserved) (Reserved)									
E4V_BMS CURTIS_1310 E4V_DATA_I CURTIS_1238 E4V_BMS SEND_TO_CURTIS_1238 E4V_BMS SEND_TO_CURTIS	U_1 U_1 U_1 U_1 U_1 U_1 4V	0x580 8 0x580 8 0x580 8 0x580 8 0x580 8 0x580 8 0x1A6 8 0x1A6 8	Byte 7 Byte 7 Byte 7 Byte 7 Byte 7 Byte 0 Byte 0	B4 B5 B6 B7 B0 B1 B2	60 61 62 63 0 1	(Reserved) (Reserved) (Reserved) (Reserved) (Reserved) (Reserved) (Reserved)									
E4V_BMS CURTIS_1310 E4V_DATA_I CURTIS_1238 E4V_BMS SEND_TO_	U_1 U_1 U_1 U_1 U_1 U_1 4V 4V	0x580 8 0x580 8 0x580 8 0x580 8 0x580 8 0x186 8 0x1A6 8 0x1A6 8	Byte 7 Byte 7 Byte 7 Byte 7 Byte 0 Byte 0 Byte 0 Byte 0	B4 B5 B6 B7 B0 B1 B2 B3	60 61 62 63 0 1 2	(Reserved) (Reserved) (Reserved) (Reserved) (Reserved) (Reserved) (Reserved) (Reserved)									
E4V_BMS CURTIS_1310 E4V_DATA_I CURTIS_1238 E4V_BMS SEND_TO_CURTIS_1238 E4V_BMS SEND_TO_SE	U_1 U_1 U_1 U_1 U_1 4V 4V 4V	0x580 8 0x580 8 0x580 8 0x580 8 0x580 8 0x580 8 0x1A6 8 0x1A6 8 0x1A6 8 0x1A6 8	Byte 7 Byte 7 Byte 7 Byte 7 Byte 7 Byte 0 Byte 0 Byte 0 Byte 0 Byte 0	B4 B5 B6 B7 B0 B1 B2 B3 B4	60 61 62 63 0 1 2	(Reserved) (Reserved) (Reserved) (Reserved) (Reserved) (Reserved) (Reserved) (Reserved) (Reserved)									
E4V_BMS CURTIS_1310 E4V_DATA_I CURTIS_1238 E4V_BMS SEND_TO_CURTIS_1238 E4V_BMS SEND_TO_CURTIS	U_1 U_1 U_1 U_1 U_1 4V 4V 4V 4V 4V	0x580 8 0x580 8 0x580 8 0x580 8 0x580 8 0x580 8 0x1A6 8 0x1A6 8 0x1A6 8 0x1A6 8 0x1A6 8	Byte 7 Byte 7 Byte 7 Byte 7 Byte 0 Byte 0 Byte 0 Byte 0	B4 B5 B6 B7 B0 B1 B2 B3 B3 B4 B5	60 61 62 63 0 1 2	(Reserved) (Reserved) (Reserved) (Reserved) (Reserved) (Reserved) (Reserved) (Reserved)									

From	То	Message	ID DLC Byte	Di+ I	Position	Data	Туре	Type 2	Unit	Factor	Raw Data	Dienlay Data	Cyclic or Event	Fraguency	Description
CURTIS_1238	E4V_BMS		0x1A6 8 Byte 0		7	(Reserved)	турс	.ype 2	Jan.	. actor	aw Data	Display Data	Cyclic of Evelit	requency	резстрион
CURTIS 1238	E4V BMS	SEND TO E4V	0x1A6 8 Byte 1		8	(Reserved)									
CURTIS_1238	E4V_BMS	SEND_TO_E4V	0x1A6 8 Byte 1		9	(Reserved)									
CURTIS_1238	E4V_BMS		0x1A6 8 Byte 1		10	(Reserved)									
CURTIS_1238	E4V_BMS		0x1A6 8 Byte 1		11	(Reserved)									
CURTIS_1238	E4V_BMS		0x1A6 8 Byte 1		12	(Reserved)									
CURTIS_1238	E4V_BMS	SEND_TO_E4V	0x1A6 8 Byte 1		13	(Reserved)									
CURTIS_1238 CURTIS_1238	E4V_BMS E4V_BMS		0x1A6 8 Byte 1 0x1A6 8 Byte 1		14 15	(Reserved)			-						
CURTIS_1238	E4V_BMS	SEND_TO_E4V	0x1A6 8 Byte 2		16	(Reserved)			_						
CURTIS_1238	E4V_BIVIS	SEND_TO_E4V		2 B1	17	(Reserved)									
CURTIS_1238	E4V_BMS	SEND_TO_E4V		2 B2	18	(Reserved)									
CURTIS_1238	E4V_BMS	SEND_TO_E4V	0x1A6 8 Byte 2		19	(Reserved)									
CURTIS_1238	E4V_BMS	SEND_TO_E4V	0x1A6 8 Byte 2	2 B4	20	(Reserved)									
CURTIS_1238	E4V_BMS	SEND_TO_E4V	0x1A6 8 Byte 2		21	(Reserved)									
CURTIS_1238	E4V_BMS	SEND_TO_E4V	0x1A6 8 Byte 2		22	(Reserved)									
CURTIS_1238	E4V_BMS	SEND_TO_E4V	0x1A6 8 Byte 2		23	(Reserved)			_						
CURTIS_1238 CURTIS 1238	E4V_BMS E4V_BMS	SEND_TO_E4V	0x1A6 8 Byte 3 0x1A6 8 Byte 3		24 25	(Reserved)			_						
CURTIS_1238 CURTIS_1238	E4V_BMS	SEND_TO_E4V SEND_TO_E4V	0x1A6 8 Byte 3		26	(Reserved)			-+						
CURTIS_1238	E4V_BMS	SEND_TO_E4V	0x1A6 8 Byte 3		27	(Reserved)			+						
CURTIS_1238	E4V_BMS	SEND_TO_E4V	0x1A6 8 Byte 3		28	(Reserved)			-						
CURTIS_1238	E4V_BMS	SEND_TO_E4V	0x1A6 8 Byte 3		29	(Reserved)									
CURTIS_1238	E4V_BMS	SEND_TO_E4V	0x1A6 8 Byte 3		30	(Reserved)									
CURTIS_1238	E4V_BMS	*****	0x1A6 8 Byte 3		31	(Reserved)									
CURTIS_1238	E4V_BMS	SEND_TO_E4V		1 BO	32	(Reserved)			-T						
CURTIS_1238	E4V_BMS	SEND_TO_E4V		4 B1	33	(Reserved)									
CURTIS_1238	E4V_BMS	SEND_TO_E4V	0x1A6 8 Byte 4		34	(Reserved)			_						
CURTIS_1238 CURTIS_1238	E4V_BMS E4V_BMS	SEND_TO_E4V SEND_TO_E4V	0x1A6 8 Byte 4 0x1A6 8 Byte 4	1 B3 1 B4	35 36	(Reserved)			_						
CURTIS_1238	E4V BMS	SEND_TO_E4V	0x1A6 8 Byte 4		37	(Reserved)			_						
CURTIS_1238	E4V_BMS	SEND_TO_E4V	0x1A6 8 Byte 4		38	(Reserved)									
CURTIS_1238	E4V_BMS	SEND_TO_E4V	0x1A6 8 Byte 4	1 B7	39	(Reserved)									
CURTIS_1238	E4V_BMS	SEND_TO_E4V	0x1A6 8 Byte 5	5 B0	40	(Reserved)									
CURTIS_1238	E4V_BMS	SEND_TO_E4V	0x1A6 8 Byte 5		41	(Reserved)									
CURTIS_1238	E4V_BMS		0x1A6 8 Byte 5		42	(Reserved)									
CURTIS_1238	E4V_BMS	SEND_TO_E4V	0x1A6 8 Byte 5		43	(Reserved)									
CURTIS_1238 CURTIS_1238	E4V_BMS E4V_BMS	SEND_TO_E4V SEND_TO_E4V	0x1A6 8 Byte 5 0x1A6 8 Byte 5		44	(Reserved)			_						
CURTIS_1238	E4V_BMS	SEND_TO_E4V	0x1A6 8 Byte 5		46	(Reserved)									
CURTIS_1238	E4V_BMS	SEND_TO_E4V	0x1A6 8 Byte 5		47	(Reserved)									
CURTIS_1238	E4V_BMS	SEND_TO_E4V	0x1A6 8 Byte 6		48	Current_RMS_(LSB)	Int 16 Bits	Unsigned	А	0.1	0-10000	0-1000.0	Cyclic	20 ms	RMS current of the controller, taking all three phases into account
CURTIS_1238	E4V_BMS	SEND_TO_E4V	0x1A6 8 Byte 6		49	Current_RMS_(LSB)									
CURTIS_1238	E4V_BMS	SEND_TO_E4V	0x1A6 8 Byte 6		50	Current_RMS_(LSB)									
CURTIS_1238	E4V_BMS	SEND_TO_E4V	0x1A6 8 Byte 6		51	Current_RMS_(LSB)									
CURTIS_1238	E4V_BMS	SEND_TO_E4V	0x1A6 8 Byte 6		52	Current_RMS_(LSB)			_						
CURTIS_1238 CURTIS_1238	E4V_BMS	SEND_TO_E4V SEND_TO_E4V	0x1A6 8 Byte 6 0x1A6 8 Byte 6		53 54	Current_RMS_(LSB) Current_RMS_(LSB)			+						
CURTIS_1238	E4V_BMS	SEND_TO_E4V	0x1A6 8 Byte 6		55	Current_RMS_(LSB)			+						
CURTIS_1238	E4V_BMS	SEND_TO_E4V	0x1A6 8 Byte 7		56	Current_RMS_(MSB)			\dashv						
CURTIS_1238	E4V_BMS	SEND_TO_E4V	0x1A6 8 Byte 7		57	Current_RMS_(MSB)									
CURTIS_1238	E4V_BMS	SEND_TO_E4V	0x1A6 8 Byte 7		58	Current_RMS_(MSB)									
CURTIS_1238	E4V_BMS	SEND_TO_E4V	0x1A6 8 Byte 7		59	Current_RMS_(MSB)									
CURTIS_1238	E4V_BMS	SEND_TO_E4V	0x1A6 8 Byte 7		60	Current_RMS_(MSB)									
CURTIS_1238	E4V_BMS	SEND_TO_E4V	0x1A6 8 Byte 7		61	Current_RMS_(MSB)			\rightarrow						
CURTIS_1238 CURTIS_1238	E4V_BMS E4V_BMS	SEND_TO_E4V SEND_TO_E4V	0x1A6 8 Byte 7 0x1A6 8 Byte 7		62	Current_RMS_(MSB) Current_RMS_(MSB)			\rightarrow						
	Navigation PC	Send To PC	0x1A6 8 Byte 7		0	Fb Speed (LSB)	Int 16 Bits	Signed	m/s	0.001	-32768 - 32767	-32.768 - 32.767	Cvclic	20 ms	Measure of the vehicle speed (in mm/s) (Precision = 0.001 m/s)
	Navigation PC	Jenu_10_PC	0x213 8 Byte 0		1	Fb_Speed_(LSB)	IIIL 10 DILS	Signeu	.11/3	5.001	JE100 - 32/0/	JE.700 - 32.707	Cyclic	201115	measure of the remot speed (in limitys) (riceision = 0,002 m/s)
	Navigation PC		0x213 8 Byte 0		2	Fb_Speed_(LSB)			-						
_	Navigation PC		0x213 8 Byte 0		3	Fb_Speed_(LSB)									
CURTIS_1238	Navigation PC		0x213 8 Byte 0) B4	4	Fb_Speed_(LSB)									
	Navigation PC		0x213 8 Byte 0		5	Fb_Speed_(LSB)									
CURTIS_1238	Navigation PC		0x213 8 Byte 0		6	Fb_Speed_(LSB)									
	Navigation PC		0x213 8 Byte 0		7	Fb_Speed_(LSB)			_						
	Navigation PC	Send_To_PC	0x213 8 Byte 1		8	Fb_Speed_(MSB)			\rightarrow	\rightarrow					
CURTIS_1238 1	Navigation PC Navigation PC		0x213 8 Byte 1 0x213 8 Byte 1	1 B1 1 B2	9	Fb_Speed_(MSB) Fb_Speed_(MSB)			+						
	Navigation PC			1 B2 1 B3	11	Fb_Speed_(MSB)			+						
	Navigation PC		0x213 8 Byte 1		12	Fb_Speed_(MSB)			-						
CURTIS_1238			0x213 8 Byte 1		13	Fb_Speed_(MSB)									

				1									
From To Message			Bit Position	Data	Туре	Type 2	Unit	Factor	Raw Data	Display Data	Cyclic or Event	Frequency	Description
CURTIS_1238 Navigation PC	0x213 8		36 14	Fb_Speed_(MSB)									
CURTIS_1238 Navigation PC	0x213 8	Byte 1 B	37 15	Fb_Speed_(MSB)									
CURTIS_1238 Navigation PC Send_To_PC	0x213 8	Byte 2 E	30 16	Fb_Steering_AV_(LSB)	Int 16 Bits	Signed	Rad	0.0001	-32768 - 32767	-3.2768 - 3.2767	Cyclic	20 ms	Measure of the front steering angle (in rad*10 000) (Precision = 0,0001 rad)
CURTIS_1238 Navigation PC	0x213 8	Byte 2	31 17	Fb_Steering_AV_(LSB)									
CURTIS_1238 Navigation PC	0x213 8	Byte 2 B	32 18	Fb_Steering_AV_(LSB)									
CURTIS_1238 Navigation PC	0x213 8	Byte 2	33 19	Fb_Steering_AV_(LSB)									
CURTIS_1238 Navigation PC			34 20	Fb_Steering_AV_(LSB)									
CURTIS_1238 Navigation PC			35 21	Fb_Steering_AV_(LSB)									
CURTIS_1238 Navigation PC			36 22	Fb_Steering_AV_(LSB)									
CURTIS_1238 Navigation PC			37 23	Fb_Steering_AV_(LSB)									
CURTIS_1238 Navigation PC Send_To_PC			30 24	Fb_Steering_AV_(MSB)			-						
CURTIS_1238 Navigation PC	0x213 8		31 25	Fb_Steering_AV_(MSB)									
CURTIS_1238 Navigation PC			32 26	Fb_Steering_AV_(MSB)									
CURTIS_1238 Navigation PC	0x213 8		33 27	Fb_Steering_AV_(MSB)									
CURTIS_1238 Navigation PC	0x213 8	Byte 3 E	34 28	Fb_Steering_AV_(MSB)									
CURTIS_1238 Navigation PC	0x213 8	Byte 3 E	35 29	Fb_Steering_AV_(MSB)									
CURTIS_1238 Navigation PC	0x213 8	Byte 3 E	36 30	Fb_Steering_AV_(MSB)									
CURTIS 1238 Navigation PC	0x213 8		37 31	Fb_Steering_AV_(MSB)									
CURTIS_1238 Navigation PC Send_To_PC	0x213 8		30 32	Fb_Steering_AR_(LSB)	Int 16 Bits	Signed	Rad	0.0001	-32768 - 32767	-3 2768 - 3 2767	Cyclic	20 ms	Measure of the rear steering angle (in rad*10 000) (Precision = 0,0001 rad)
CURTIS_1238 Navigation PC Send_10_PC	0x213 8		31 33	Fb_Steering_AR_(LSB)	and to bid	Jigired	Nau	0.0001	32/00-32/0/	3.2700 - 3.2707	Cyclic	201113	measure or the real secting dispertition to only (Fredston - 0,000 Fad)
				Fb_Steering_AR_(LSB)			\vdash						
	0x213 8		32 34			-	-					1	
CURTIS_1238 Navigation PC	0x213 8		33 35	Fb_Steering_AR_(LSB)			\vdash						
CURTIS_1238 Navigation PC	0x213 8		34 36	Fb_Steering_AR_(LSB)			-						
CURTIS_1238 Navigation PC	0x213 8		35 37	Fb_Steering_AR_(LSB)			\sqcup						
CURTIS_1238 Navigation PC	0x213 8		36 38	Fb_Steering_AR_(LSB)									
CURTIS_1238 Navigation PC	0x213 8	Byte 4 B	37 39	Fb_Steering_AR_(LSB)									
CURTIS_1238 Navigation PC Send_To_PC	0x213 8	Byte 5 B	30 40	Fb_Steering_AR_(MSB)									
CURTIS_1238 Navigation PC	0x213 8		31 41	Fb_Steering_AR_(MSB)									
CURTIS_1238 Navigation PC	0x213 8		32 42	Fb_Steering_AR_(MSB)									
CURTIS_1238 Navigation PC	0x213 8		33 43	Fb_Steering_AR_(MSB)									
CURTIS_1238 Navigation PC	0x213 8		34 44	Fb_Steering_AR_(MSB)								+	
CURTIS_1238 Navigation PC	0x213 8		35 45										
				Fb_Steering_AR_(MSB)			-						
CURTIS_1238 Navigation PC	0x213 8		36 46	Fb_Steering_AR_(MSB)									
CURTIS_1238 Navigation PC	0x213 8		37 47	Fb_Steering_AR_(MSB)									
CURTIS_1238 Navigation PC Send_To_PC	0x213 8		30 48	Odometer_(LSB)	Int 16 Bits	Unsigned	km	1	0 - 4294967295	0 - 4294967295	Cyclic	20 ms	Distance travelled by the vehicle since its first entry into service (in km)
CURTIS_1238 Navigation PC	0x213 8		31 49	Odometer_(LSB)									
CURTIS_1238 Navigation PC	0x213 8	Byte 6	32 50	Odometer_(LSB)									
CURTIS_1238 Navigation PC	0x213 8	Byte 6 B	33 51	Odometer_(LSB)									
CURTIS_1238 Navigation PC	0x213 8	Byte 6 B	34 52	Odometer_(LSB)									
CURTIS_1238 Navigation PC	0x213 8	Byte 6 B	35 53	Odometer_(LSB)									
CURTIS_1238 Navigation PC	0x213 8		36 54	Odometer_(LSB)									
CURTIS_1238 Navigation PC	0x213 8	Byte 6 B	37 55	Odometer_(LSB)									
CURTIS_1238 Navigation PC Send_To_PC	0x213 8		30 56	Odometer (MSB)									
CURTIS_1238 Navigation PC	0x213 8		31 57	Odometer_(MSB)									
CURTIS_1238 Navigation PC	0x213 8		32 58	Odometer_(MSB)									
			32 58 33 59	Odometer_(MSB) Odometer (MSB)									
CURTIS_1238 Navigation PC													
CURTIS_1238 Navigation PC	0x213 8		34 60	Odometer_(MSB)									
CURTIS_1238 Navigation PC	0x213 8		35 61	Odometer_(MSB)									
CURTIS_1238 Navigation PC	0x213 8		36 62	Odometer_(MSB)									
CURTIS_1238 Navigation PC	0x213 8	Byte 7	37 63	Odometer_(MSB)									
SAFETY PLC Navigation PC PC_AUTONOMOUS_ACCESS	0x194 8	Byte 0 B	30 0	LMS FrontLeft Detection	Bool	Bool	1 T				Cyclic	100 ms	0 = FL LMS detects an obstacle (OUT1)
- ORIES_FEEDBACK		·											
SAFETY_PLC Navigation PC	0x194 8		31 1	LMS_FrontRight_Detection	Bool	Bool	\vdash				Cyclic	100 ms	0 = FR LMS detects an obstacle (OUT1)
SAFETY_PLC Navigation PC	0x194 8		32 2	LMS_RearLeft_Detection	Bool	Bool					Cyclic	100 ms	0 = RL LMS detects an obstacle (OUT1)
SAFETY_PLC Navigation PC	0x194 8		33 3	LMS_RearRight_Detection	Bool	Bool					Cyclic	100 ms	0 = RR LMS detects an obstacle (OUT1)
SAFETY_PLC Navigation PC	0x194 8	Byte 0 E	34 4	Obstacle_Detected	Bool	Bool					Cyclic	100 ms	Obstacle detected by LMS and generating a stop => Safety chain active
SAFETY_PLC Navigation PC	0x194 8	Byte 0 B	35 5	LMS_Operational	Bool	Bool					Cyclic	100 ms	1 = LMS Operational, 0 = LMS Not operational
											- "		Obstacle detected by LMS and not generating a stop => Safety chain not active (In case of safety chain disabled, it is to inform that LMS have
SAFETY_PLC Navigation PC	0x194 8	Byte 0 E	36 6	Obstacle_Detected_NoSafety	Bool	Bool					Cyclic	100 ms	detected an obstacle. As the safety chain is disabled it will not trigger an Estop.)
SAFETY_PLC Navigation PC	0x194 8	Byte 0 E	37 7	Rearming authorized	Bool	Bool	_	_	_		Cyclic	100 ms	D = Rearming the vehicle is not authorized (when the EStop cause is still present. For exemple an EStop button is still pressed or a LMS is not
SAFETT_PEC INAVIgation PC	UX194 8	Byte U	9' '	Real Hillig authorized	8001	BUUI	-	-	-	-	Cyclic	100 IIIS	operational,)
SAFETY DLC Novigation DC PC_AUTONOMOUS_ACCESS	0x194 8	Duto 1	30 8	Doors Opened	Bool	Bool					Custic	100 ms	0 - Dears Not Opened (VTIGE 12)
SAFETY_PEC Navigation PC ORIES_FEEDBACK				Doors_Opened		B001	<u>∟</u> 1				Cyclic		0 = Doors Not Opened (XTIO6.I3)
SAFETY_PLC Navigation PC	0x194 8	Byte 1 B	31 9	Doors_Closed	Bool	Bool	- 1	-	-	-	Cyclic	100 ms	0 = Doors Not Closed (XTIO6.12)
SAFETY_PLC Navigation PC	0x194 8		32 10	Doors_Obstacle	Bool	Bool	-	-	-	-	Cyclic	100 ms	D = No obstcale detected by doors
SAFETY_PLC Navigation PC	0x194 8		33 11	Doors Fatal Failure	Bool	Bool	- 1	-	-		Cyclic	100 ms	D = No error on door system
SAFETY_PLC Navigation PC	0x194 8		34 12	(Reserved)									
SAFETY_PLC Navigation PC	0x194 8		35 13	(Reserved)									
	0x194 8			DoorsNOKforTraction	Bool	Bool	H. 1				Cyclic	100 ms	0 = Doors authorizing traction
SAFETY_PLC Navigation PC							-	-	-	-	-,		
SAFETY_PLC Navigation PC	0x194 8	Byte 1 E	37 15	Doors_Defaults	Bool	Bool	-	-	-	-	Cyclic	100 ms	0 = No doors defaults (XTIO6.I1) Doors obstacle detected or doors cannot be operated due to an internal issue
SAFETY_PLC Navigation PC PC_AUTONOMOUS_ACCESS	0x194 8	Byte 2 B	30 16	EStop_Button	Bool	Bool	-	-	-		Cyclic	100 ms	1 = Estop buttons not pushed (XTIO1.11/12)
ORIES_FEEDBACK		1.									· ·	l	

			1							_							_	
From SAFETY_PLC	To Navigation PC	Message			Byte Byte			17	Data EStop_Manual_State	Type Bool	Type 2 Bool	Unit	Factor	Raw Data	Display Data	Cyclic or Event	Frequency 100 ms	Description 1 = Estop button from remote control not activated in manual mode
SAFETY_PLC	Navigation PC		UX194	8	Вуте	2 В	31	1/	EStop_Manual_State	8001	8001		-	-	-	Cyclic	100 ms	1 = Estop button from remote control not activated in manual mode 1 = Estop button of the Remote Control not pushed. This signal reflect the physic state of this button and not implies that the vehicle will be in
SAFETY_PLC	Navigation PC		0x194	8	Byte	2 B	.,	18	Estop Manual Button	Bool	Bool					Cyclic	100 ms	1 = estop outron of the Remote Control not pushed. This signal reflect the physic state of this outron and not implies that the vehicle will be in EStop.
3741211_120	Navigation i C		UNIDA		Dyte	- "	~	10	Estop_inundar_batton	5001	5001					Cyclic	100 1113	In fact this button triggers a vehicle EStop only if we are in manual mode. (XTIO2.11/12)
SAFETY_PLC	Navigation PC		0x194	8	Byte	2 B	33	19	Safety_Disabled	Bool	Bool		-	-	-	Cyclic	100 ms	0 = Safety ON
SAFETY_PLC	Navigation PC		0x194	8	Byte	2 B	34	20	(Reserved)									
SAFETY_PLC	Navigation PC		0x194	8	Byte	2 B	35	21	(Reserved)									
SAFETY_PLC	Navigation PC		0x194	8	Byte	2 B	36	22	(Reserved)									
SAFETY_PLC	Navigation PC		0x194	8	Byte	2 B	37	23	Manual_Mode_On	Bool	Bool		-	-	-	Cyclic	100 ms	0 = Manual mode not activated (XTIO5.17)
		PC_AUTONOMOUS_ACCESS	i			十	Ť											İ
SAFETY_PLC	Navigation PC	ORIES_FEEDBACK	0x194	8	Byte	3 B	30	24	Front_Steering_No_Fault	Bool	Bool	-		-	-	Cyclic	100 ms	0 = Fault on Front Steering controler (XTIO4.12)
SAFETY_PLC	Navigation PC		0x194	8	Byte	3 B	31	25	Rear_Steering_No_Fault	Bool	Bool	-	-	-	-	Cyclic	100 ms	0 = Fault on Back Steering controler (XTIO4.13)
SAFETY_PLC	Navigation PC		0x194	8	Byte	3 B	32	26	Brake_Controller_Fault	Bool	Bool		-	-	-	Cyclic	100 ms	0 = No fault on brake controler
SAFETY_PLC	Navigation PC		0x194	8	Byte	3 B	33	27	Traction_Authorized	Bool	Bool	-	-	-	-	Cyclic	100 ms	0 = No power in Controlers (Traction, Steering and Brake)
SAFETY_PLC	Navigation PC		0x194	8			34	28	(Reserved)									
SAFETY_PLC	Navigation PC		0x194	8	Byte	3 B	35	29	(Reserved)									
SAFETY_PLC	Navigation PC		0x194	8	Byte	3 B	36	30	Coders_Indicate_Vehicle_Stopped	Bool	Bool	-	-	-	-	Cyclic	100 ms	0 = Coders Indicate Vehicle Not Stopped (from PLC coders)
			1	8				24		DI	01						400	1 = failsafe brake is not released and the main ECU indicates that the vehicle is at null speed and the wheel encoders indicates a null speed)
SAFETY_PLC	Navigation PC		0x194	8	Byte	3 B	37	31	Vehicle_Stopped_3_States	Bool	Bool			-	-	Cyclic	100 ms	0 = FSB is released or main ecu is indicating the vehicle is not at null speed or wheel encoders detect a speed different from 0
SAFETY_PLC	Navigation PC	PC_AUTONOMOUS_ACCESS	0x194	8	Byte	4 B	3n T	32	(Reserved)									
		ORIES_FEEDBACK							i i									
SAFETY_PLC	Navigation PC		0x194	8	<u> </u>	_	_	33	Vehicle_Stopped_4_States	Bool	Bool	-	-	-	-	Cyclic	100 ms	1 = Vehicle stopped 4 States <=> Vehicle_Stopped_3_States = ON OR Electric brakes calipers are engaged
SAFETY_PLC			0x194	8			32	34	EL_Pkg_Brk_Engaged	Bool	Bool	-	-	-	-	Cyclic	100 ms	1 = Electric parking brake engaged (XTIO7.17)
SAFETY_PLC	Navigation PC		0x194	8	,		33	35	EM_Brake_Engaged	Bool	Bool	- 1	- 1		-	Cyclic	100 ms	1 = EM brake engaged (XTIO3.I3)
SAFETY_PLC	Navigation PC		0x194	8				36	(Reserved)									
SAFETY_PLC	Navigation PC		0x194	8	Byte	4 B	35	37	(Reserved)									
SAFETY_PLC	Navigation PC		0x194		,		36	38	EStop_Not_Required	Bool	Bool	-	-	-	-	Cyclic	100 ms	1 = Estop Controlled Required (one cause of Estop has been triggered)
SAFETY_PLC	Navigation PC		0x194	8	Byte	4 B	37	39	(Reserved)									
SAFETY_PLC	Navigation PC	PC_AUTONOMOUS_ACCESS	0x194	8	Byte	5 D	30	40	Ramp_In	Bool	Bool					Cyclic	100 ms	1 = Ramp In
	Navigation PC	ORIES_FEEDBACK		۰	Буге				Kallip_III	8001	BUUI					Cyclic	100 1115	1 - Natinp III
SAFETY_PLC	Navigation PC		0x194	8	Byte	5 B	31	41	Ramp_Out	Bool	Bool	-	-	-	-	Cyclic	100 ms	1 = Ramp Out (XTIO7.I3)
SAFETY_PLC	Navigation PC		0x194	8	Byte	5 B	32	42	Ramp_Moving	Bool	Bool		-	-	-	Cyclic	100 ms	1 = Ramp Moving (XTIO7.14)
SAFETY_PLC	Navigation PC		0x194	8	-,	_	33	43	Ramp_Defaults	Bool	Bool	-	-	-	-	Cyclic	100 ms	1 = Ramp in default (XTIO7.11)
SAFETY_PLC	Navigation PC		0x194	8	Byte	5 B	34	44	Ramp_NOK_for_Traction	Bool	Bool		-	-	-	Cyclic	100 ms	1 = Ramp Not Authorizing traction
SAFETY_PLC	Navigation PC		0x194	8	Byte	5 B	35	45	Suspension_enabled	Bool	Bool	-	-	-	-	Cyclic	100 ms	1 = Suspension activated (when the PLC commands to lower suspension.)
SAFETY_PLC	Navigation PC		0x194	8	Byte	5 B	36	46	Ramp_Not_In	Bool	Bool	•	-	-	-	Cyclic	100 ms	1 = Ramp Not In (XTIO7.I5)
SAFETY_PLC	Navigation PC		0x194	8	Byte	5 B	37	47	Ramp_Not_Out	Bool	Bool	-	-	-	-	Cyclic	100 ms	1 = Ramp Not Out (XTIO7.I6)
SAFETY_PLC	Navigation PC	PC_AUTONOMOUS_ACCESS	0x194	8	Byte	6 B	an	48	(Reserved)									
		ORIES_FEEDBACK			,				,									
SAFETY_PLC	Navigation PC		0x194		,		_	49	(Reserved)									
SAFETY_PLC	Navigation PC		0x194		,	_	_	50	(Reserved)									
SAFETY_PLC	Navigation PC		0x194	8	,		33	51	(Reserved)									
SAFETY_PLC	Navigation PC		0x194		-,		_	52	Alert_Battery_Low	Bool	Bool	-	-	-	-	Cyclic	100 ms	1 = Battery level low
SAFETY_PLC	Navigation PC		0x194		,	_	_	53	(Reserved)									
SAFETY_PLC	Navigation PC		0x194				36	54	(Reserved)									
SAFETY_PLC	Navigation PC		0x194	8	Byte	6 B	37	55	Soft_Stop_Battery_Low	Bool	Bool	-	-	-	-	Cyclic	100 ms	1 = Soft stop required because battery is low
SAFETY_PLC	Navigation PC	PC_AUTONOMOUS_ACCESS	0x194	8	Byte	7 B	30	56	(Reserved)									
		ORIES_FEEDBACK			,				,	n- 1	D. 1					6"	400	A Brownian without
SAFETY_PLC	Navigation PC		0x194		,		31	57	Rearming_Required	Bool	Bool	-	·	•		Cyclic	100 ms	1 = Rearming wished
SAFETY_PLC	Navigation PC		0x194		<u> </u>		32	58	(Reserved)									
SAFETY_PLC	Navigation PC		0x194		,		33	59	(Reserved)									
SAFETY_PLC	Navigation PC		0x194	8	<u> </u>		34	60	(Reserved)				\vdash				-	
SAFETY_PLC	Navigation PC		0x194		<u> </u>		_	61	(Reserved)									
SAFETY_PLC	Navigation PC		0x194	8	,		36	62	(Reserved)									
SAFETY_PLC	Navigation PC		0x194	_	,	_	37	63	(Reserved)				\vdash					
SAFETY_PLC	Navigation PC	PLC_STATE_2	0x294				30	0	Out2_RL	Bool	Bool					Cyclic	100 ms	1 = Out 2 RL Lms activated
SAFETY_PLC	Navigation PC		0x294		,		31	1	Out2_RR	Bool	Bool					Cyclic	100 ms	1 = Out 2 RR Lms activated
SAFETY_PLC	Navigation PC		0x294				32	2	Out2_FL	Bool	Bool		\square			Cyclic	100 ms	1 = Out 2 FL Lms activated
SAFETY_PLC	Navigation PC		0x294		,	_	_	3	Out2_FR	Bool	Bool					Cyclic	100 ms	1 = Out 2 FR Lms activated
SAFETY_PLC	Navigation PC		0x294		,		34	4	Out3_RL	Bool	Bool		\square			Cyclic	100 ms	1 = Out 3 RL Lms activated
SAFETY_PLC	Navigation PC		0x294				_	5	Out3_RR	Bool	Bool					Cyclic	100 ms	1 = Out 3 RR Lms activated
SAFETY_PLC	Navigation PC		0x294				_	6	Out3_FL	Bool	Bool					Cyclic	100 ms	1 = Out 3 FL Lms activated
SAFETY_PLC	Navigation PC		0x294	8	+ /	_	37	7	Out3_FR	Bool	Bool					Cyclic	100 ms	1 = Out 3 FR Lms activated
SAFETY_PLC	Navigation PC	PLC_STATE_2	0x294					8	Front_I1	Bool	Bool					Cyclic	100 ms	1 = Front I1 should be activated
SAFETY_PLC	Navigation PC		0x294	8	,	_		9	Front_I2	Bool	Bool					Cyclic	100 ms	1 = Front I2 should be activated
SAFETY_PLC	Navigation PC		0x294	8	Byte	1 B	32	10	Front_I3	Bool	Bool					Cyclic	100 ms	1 = Front I3 should be activated
SAFETY_PLC	Navigation PC		0x294	8	<u> </u>		33	11	Front_I4	Bool	Bool					Cyclic	100 ms	1 = Front I4 should be activated
SAFETY_PLC	Navigation PC		0x294	8	Byte	1 B	34	12	Rear_I1	Bool	Bool					Cyclic	100 ms	1 = Rear I1 should be activated
SAFETY_PLC	Navigation PC		0x294	8	Byte	1 B	35	13	Rear_I2	Bool	Bool					Cyclic	100 ms	1 = Rear I2 should be activated
SAFETY_PLC	Navigation PC		0x294	8	Byte	1 B	36	14	Rear_I3	Bool	Bool					Cyclic	100 ms	1 = Rear I3 should be activated
SAFETY_PLC	Navigation PC		0x294	8	Byte	1 B	37	15	Rear_I4	Bool	Bool					Cyclic	100 ms	1 = Rear I4 should be activated
SAFETY_PLC	Navigation PC	PLC_STATE_2	0x294	8	Byte	2 B	30	16	(Reserved)									
SAFETY_PLC			0x294		Byte			17	(Reserved)									
					1 ,												l .	1

	ID DLC Byte Bit Position	T 9.4.	T	T 2		D D-4	Disales Bate	0	F	Possitivities .
From To Message SAFETY PLC Navigation PC	ID DLC Byte Bit Position 0x294 8 Byte 2 B2 18	Data	Type	Type 2 L	Init Factor	Raw Data	Display Data	Cyclic or Event	Frequency	Description I
SAFETY_PLC Navigation PC SAFETY PLC Navigation PC	0x294 8 Byte 2 B2 18 0x294 8 Byte 2 B3 19	(Reserved)			_	+	 			
SAFETY_PLC Navigation PC	0x294 8 Byte 2 B4 20	(Reserved)				-	1			
SAFETY_PLC Navigation PC	0x294 8 Byte 2 B5 21	(Reserved)								
SAFETY_PLC Navigation PC	0x294 8 Byte 2 B6 22	(Reserved)								
SAFETY_PLC Navigation PC	0x294 8 Byte 2 B7 23	(Reserved)								
SAFETY_PLC Navigation PC PLC_STATE_2	0x294 8 Byte 3 B0 24	(Reserved)				1				
SAFETY_PLC Navigation PC	0x294 8 Byte 3 B1 25	(Reserved)								
SAFETY_PLC Navigation PC	0x294 8 Byte 3 B2 26	(Reserved)								
SAFETY_PLC Navigation PC	0x294 8 Byte 3 B3 27	(Reserved)								
SAFETY_PLC Navigation PC	0x294 8 Byte 3 B4 28	Automatic_Mode_EStop	Bool	Bool				Cyclic	100 ms	1 = Automatic_Mode_EStop
SAFETY_PLC Navigation PC	0x294 8 Byte 3 B5 29	Automatic_Mode_EStop_Source	Bool	Bool				Cyclic	100 ms	1 = Automatic Mode_EStop_Source
SAFETY_PLC Navigation PC	0x294 8 Byte 3 B6 30	(Reserved)						<u> </u>		
SAFETY_PLC Navigation PC	0x294 8 Byte 3 B7 31	(Reserved)								
SAFETY_PLC Navigation PC PLC_STATE_2	0x294 8 Byte 4 B0 32	(Reserved)			T T	İ	İ		İ	
SAFETY_PLC Navigation PC	0x294 8 Byte 4 B1 33	(Reserved)								
SAFETY_PLC Navigation PC	0x294 8 Byte 4 B2 34	(Reserved)								
SAFETY_PLC Navigation PC	0x294 8 Byte 4 B3 35	(Reserved)								
SAFETY_PLC Navigation PC	0x294 8 Byte 4 B4 36	(Reserved)								
SAFETY_PLC Navigation PC	0x294 8 Byte 4 B5 37	(Reserved)								
SAFETY_PLC Navigation PC	0x294 8 Byte 4 B6 38	(Reserved)								
SAFETY_PLC Navigation PC	0x294 8 Byte 4 B7 39	(Reserved)								
SAFETY_PLC Navigation PC PLC_STATE_2	0x294 8 Byte 5 B0 40	(Reserved)								
SAFETY_PLC Navigation PC	0x294 8 Byte 5 B1 41	(Reserved)								
SAFETY_PLC Navigation PC	0x294 8 Byte 5 B2 42	(Reserved)								
SAFETY_PLC Navigation PC	0x294 8 Byte 5 B3 43	(Reserved)								
SAFETY_PLC Navigation PC	0x294 8 Byte 5 B4 44	(Reserved)								
SAFETY_PLC Navigation PC	0x294 8 Byte 5 B5 45	(Reserved)								
SAFETY_PLC Navigation PC	0x294 8 Byte 5 B6 46	(Reserved)								
SAFETY_PLC Navigation PC	0x294 8 Byte 5 B7 47	(Reserved)								
SAFETY_PLC Navigation PC PLC_STATE_2	0x294 8 Byte 6 B0 48	(Reserved)								
SAFETY_PLC Navigation PC	0x294 8 Byte 6 B1 49	(Reserved)								
SAFETY_PLC Navigation PC	0x294 8 Byte 6 B2 50	(Reserved)								
SAFETY_PLC Navigation PC	0x294 8 Byte 6 B3 51	(Reserved)								
SAFETY_PLC Navigation PC	0x294 8 Byte 6 B4 52	(Reserved)								
SAFETY_PLC Navigation PC	0x294 8 Byte 6 B5 53	(Reserved)								
SAFETY_PLC Navigation PC	0x294 8 Byte 6 B6 54	(Reserved)								
SAFETY_PLC Navigation PC	0x294 8 Byte 6 B7 55	(Reserved)								
SAFETY_PLC Navigation PC PLC_STATE_2	0x294 8 Byte 7 B0 56	(Reserved)								
SAFETY_PLC Navigation PC	0x294 8 Byte 7 B1 57	(Reserved)								
SAFETY_PLC Navigation PC	0x294 8 Byte 7 B2 58	High_Level_HeadLight_Flash_Command	Bool	Bool		-	-	Cyclic	100 ms	1 = High_Level_HeadLight_Flash_Command
SAFETY_PLC Navigation PC	0x294 8 Byte 7 B3 59	High_Level_Tram_Bell_Command	Bool	Bool		-	-	Cyclic	100 ms	1 = High_Level_Tram_Bell_Command
SAFETY_PLC Navigation PC	0x294 8 Byte 7 B4 60	(Reserved)								
SAFETY_PLC Navigation PC	0x294 8 Byte 7 B5 61	(Reserved)			_					
SAFETY_PLC Navigation PC	0x294 8 Byte 7 B6 62	(Reserved)								
SAFETY_PLC Navigation PC	0x294 8 Byte 7 B7 63	(Reserved)	Bool	Bool	_	+	-	08-	100	1 - High Lavel Degreet Deer wayamant
SAFETY_PLC Navigation PC PLC_STATE_3	0x394 8 Byte 0 B0 0 0x394 8 Byte 0 B1 1	Doors_High_Level_Request	Bool	Bool		+ -	-	Cyclic	100 ms	1 = High Level Request Door movement
SAFETY_PLC Navigation PC		Doors_Mvt_Required	BOOI	ROOI	- -	-	-	Cyclic	100 ms	1 = A door request has been triggered
SAFETY_PLC Navigation PC SAFETY_PLC Navigation PC	0x394 8 Byte 0 B2 2 0x394 8 Byte 0 B3 3	(Reserved)			_		-			
					_	+	-	1	-	
	0x394 8 Byte 0 B4 4 0x394 8 Byte 0 B5 5	(Reserved)					1	1		
SAFETY_PLC Navigation PC SAFETY_PLC Navigation PC	0x394 8 Byte 0 B5 5	(Reserved)			_	+	1	 		
SAFETY_PLC Navigation PC	0x394 8 Byte 0 B7 7	Light_Door_Button	Bool	Bool		+ -	-	Cyclic	100 ms	1 = Light door button is ON
SAFETY_PLC Navigation PC PLC_STATE_3	0x394 8 Byte 1 B0 8	Ramp_High_Level_Request	Bool	Bool		+ -	1	Cyclic	100 ms	1 = High Level Request Ramp Movement
SAFETY_PLC Navigation PC PLC_STATE_3 SAFETY_PLC Navigation PC	0x394 8 Byte 1 B0 8	Ramp_High_Level_Request Ramp_Mvt_Required	Bool	Bool		+ -	1	Cyclic	100 ms	1 = A ramp request has been triggered by the PLC
SAFETY_PLC Navigation PC SAFETY_PLC Navigation PC	0x394 8 Byte 1 B1 9 0x394 8 Byte 1 B2 10	Ramp_Mvt_Required Ramp_Mat_Activated	Bool	Bool		+ -	-	Cyclic	100 ms	1 = Ramp Mat has been activated
SAFETY_PLC Navigation PC SAFETY_PLC Navigation PC	0x394 8 Byte 1 B2 10 0x394 8 Byte 1 B3 11	Ramp_Mat_Activated Ramp_In_or_Bumper_Activ	Bool	Bool		+ :-	1 -	Cyclic		1 = Ramp Mat has been activated 1 = Ramp is IN or bumper has been activated
SAFETY_PLC Navigation PC	0x394 8 Byte 1 B4 12	(Reserved)	5001	DOOI		1 -	1	Cyclic	100 1113	1 = nomp is not or oumper nos ocen detivated
SAFETY_PLC Navigation PC	0x394 8 Byte 1 B5 13	(Reserved)				1	1			
SAFETY PLC Navigation PC	0x394 8 Byte 1 B6 14	Light Ramp Button	Bool	Bool		+ -	-	Cyclic	100 ms	1 = Light ramp button ON
SAFETY_PLC Navigation PC	0x394 8 Byte 1 B7 15	Ramp Button Authorized	Bool	Bool	. -	-		Cyclic	100 ms	1 = Action on ramp button will be taken into account
SAFETY_PLC Navigation PC PLC_STATE_3	0x394 8 Byte 2 B0 16	(Reserved)	5551	5001		1	1	- Cyclic	1003	
SAFETY_PLC Navigation PC	0x394 8 Byte 2 B1 17	(Reserved)				1	1	1		
SAFETY_PLC Navigation PC SAFETY_PLC Navigation PC	0x394 8 Byte 2 B1 17 0x394 8 Byte 2 B2 18	(Reserved)			_	1	1	1	1	
SAFETY_PLC Navigation PC	0x394 8 Byte 2 B3 19	(Reserved)				+	<u> </u>			
SAFETY_PLC Navigation PC	0x394 8 Byte 2 B4 20	(Reserved)								
SAFETY_PLC Navigation PC	0x394 8 Byte 2 B5 21	(Reserved)								
SAFETY_PLC Navigation PC	0x394 8 Byte 2 B6 22	(Reserved)								
SAFETY_PLC Navigation PC	0x394 8 Byte 2 B7 23	(Reserved)								
SAFETY_PLC Navigation PC PLC_STATE_3	0x394 8 Byte 3 B0 24	(Reserved)			_	1	1	1		
SALETTE INGNIBATION LC LCC STRIC S	0 Dyte 3 D0 24	(neserveu)								

From	To	Message	ID	DLC	Byte	Bit	Position	Data	Туре	Type 2	Unit	Factor	Raw Data	Display Data	Cyclic or Event	Frequency	Description
SAFETY_PLC	Navigation PC		0x394	8	Byte 3	B1	25	Use_Ramp	Bool	Bool	-	-	-	-	Cyclic	100 ms	1 = We can use the ramp
SAFETY_PLC	Navigation PC		0x394	8	Byte 3	B2	26	Use_Led_Column	Bool	Bool		-	-	-	Cyclic	100 ms	1 = We should use led columns
SAFETY_PLC	Navigation PC		0x394	8	Byte 3	B3	27	(Reserved)									
SAFETY_PLC	Navigation PC		0x394	8	Byte 3	B4	28	(Reserved)									
SAFETY_PLC	Navigation PC		0x394	8	Byte 3	B5	29	(Reserved)									
SAFETY_PLC	Navigation PC		0x394	8	Byte 3		30	(Reserved)									
SAFETY_PLC	Navigation PC		0x394	8	Byte 3	B7	31	(Reserved)									
SAFETY_PLC	Navigation PC	PLC_STATE_3	0x394	8	Byte 4	B0	32	(Reserved)									
SAFETY_PLC	Navigation PC		0x394	8	Byte 4	B1	33	(Reserved)									
SAFETY_PLC	Navigation PC		0x394	8	Byte 4	B2	34	(Reserved)									
SAFETY_PLC	Navigation PC		0x394	8	Byte 4	B3	35	(Reserved)									
SAFETY_PLC	Navigation PC		0x394	8	Byte 4	B4	36	(Reserved)									
SAFETY_PLC	Navigation PC		0x394	8	Byte 4	B5	37	(Reserved)									
SAFETY_PLC	Navigation PC		0x394	8	Byte 4	B6	38	(Reserved)									
SAFETY_PLC	Navigation PC		0x394	8	Byte 4	B7	39	(Reserved)									
SAFETY_PLC	Navigation PC	PLC_STATE_3	0x394	8	Byte 5	B0	40	Door_Button_Authorized	Bool	Bool	-	-	-	-	Cyclic	100 ms	1 = Action on door button will be taken into account
SAFETY_PLC	Navigation PC		0x394	8	Byte 5	B1	41	(Reserved)									
SAFETY_PLC	Navigation PC		0x394	8	Byte 5	B2	42	(Reserved)									
SAFETY_PLC	Navigation PC		0x394	8	Byte 5	B3	43	Safety Disabled	Bool	Bool	-	-	-	-	Cyclic	100 ms	1 = Safety chain is disabled
SAFETY_PLC	Navigation PC		0x394	8	Byte 5	B4	44	Safety Button OFF	Bool	Bool		-	-	-	Cyclic	100 ms	1 = Safety Button is on safety chain OFF (XTIO5.11)
SAFETY_PLC	Navigation PC		0x394	8	Byte 5	B5	45										
SAFETY_PLC	Navigation PC		0x394	8	Byte 5	B6	46										
SAFETY_PLC	Navigation PC		0x394	8	Byte 5	B7	47	s_EStop_PCNav_Not_Requested	Bool	Bool	-	-	-	-	Cyclic	100 ms	1 = Estop requested by navigation computer
SAFETY_PLC	Navigation PC	PLC_STATE_3	0x394	8	Byte 6	B0	48										
SAFETY_PLC	Navigation PC		0x394	8	Byte 6	B1	49										
SAFETY_PLC	Navigation PC		0x394	8	Byte 6	B2	50										
SAFETY_PLC	Navigation PC		0x394	8	Byte 6	B3	51										
SAFETY_PLC	Navigation PC		0x394	8	Byte 6	B4	52										
SAFETY_PLC	Navigation PC		0x394	8	Byte 6	B5	53										
SAFETY_PLC	Navigation PC		0x394	8	Byte 6	B6	54										
SAFETY_PLC	Navigation PC		0x394	8	Byte 6	B7	55										
SAFETY_PLC	Navigation PC	PLC_STATE_3	0x394	8	Byte 7	B0	56										
SAFETY_PLC	Navigation PC		0x394	8	Byte 7	B1	57										
SAFETY_PLC	Navigation PC		0x394	8	Byte 7	B2	58										
SAFETY_PLC	Navigation PC		0x394	8	Byte 7	B3	59										
SAFETY_PLC	Navigation PC		0x394	8	Byte 7	B4	60										
SAFETY_PLC	Navigation PC		0x394	8	Byte 7	B5	61										
SAFETY_PLC	Navigation PC		0x394	8	Byte 7	B6	62										
SAFETY_PLC	Navigation PC		0x394	8	Byte 7	B7	63										