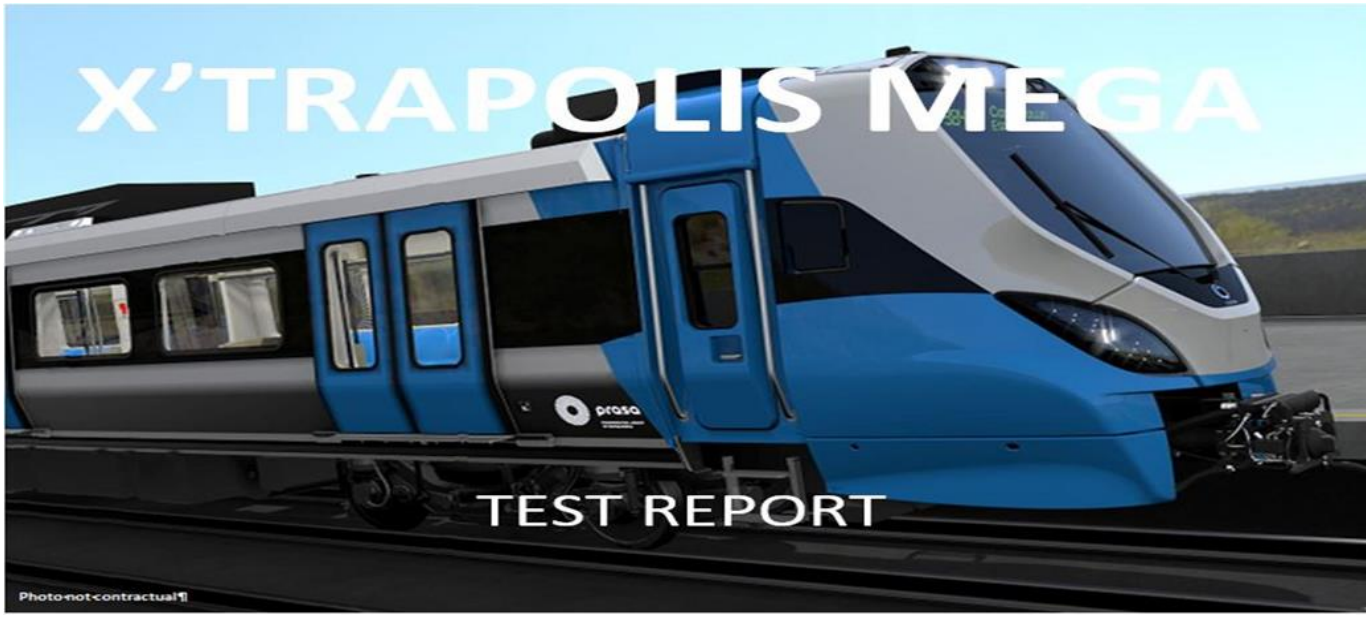
PROJECT	CUSTOMER	VEHICLE
Xtrapolis-PRASA	**PRASA**	**266 – TC1 – VFT**

RTR Vehicle Functional Static Testing TS266 TC1 Report

GIB0000007782



	CREATED	VERIFIED	APPROVED	DISTRIBUTION
Name	Vusumuzi ZULU	Sifiso LUKHELE	Kgomotso NKOANA	Confidentiality Category *Restricted* ☐ *Project* ☐ *Normal* ☑
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Signature				Language **EN**

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Table of modifications

Rev	Date	Modifications Content	Writer
A0	31/1/2025	Creation	Vusumuzi ZULU

Internal validations

	Name	Function	Date	Signature
Creator	Vusumuzi ZULU	EPU Manager	31/1/2025	X Vusumuzi ZULU EPU Manager
Verifier	Sifiso LUKHELE	Serial Test Manager	31/1/2025	X Sifiso LUKHELE Serial Test Manager
Approver	Kgomotso NKOANA	Test Expert	31/1/2025	X Kgomotso NKOANA Test Expert

Execution Plan

Start Date	26/1/2025
End Date	27/1/2025

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Section 1 – Purpose / Objectives

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Ensure the distribution of 110Vdc and 400Vac through the vehicle from the battery and Auxiliary converter
2. TCMS Network
Verify the working of the TCMS network and its core elements, i.e TRS, CRS.
3. Cabin Control
Verify the cabin control functions in both normal and backup modes, their commanding of the train lines, and the TCMS response to each function.
4. Internal Lighting
Verify the working of all internal lighting functions.
5. PACIS System
Verify power supply to all PACIS network equipment.
6. Dead Man
Verify the functioning of the dead man system, its associated components e.g buzzer, and its TCMS responses.
7. External Signalling
Ensure all external signalling functions on the TC car are working, this test excludes the pneumatic horn.
8. Rescue Mode and Emergency Disconnection
Verify the correct operation of the emergency disconnection function, as well as the correct activation of the Back-Up mode.
9. Driver Desk Illumination
Verify the correct operation of all driver desk indicators, as well as auxiliary systems such as the sunblind etc. that assist the driver.
10. Emergency Brake
Verify all electrical components of the Emergency braking system.
11. Service Brake
Verify all electrical components of the Service brake system.
12. Holding and Parking Brake
Verify all electrical components of the Parking/holding brake system.
13. Passenger Doors
Ensure proper operation of the train doors.
14. HVAC
Verify the voltage distribution to and correct operation of the HVAC system
15. Fire Protection
Verify the configuration of the fire detection units, as well as the presence of the safety resistor in the auxiliary converter.
16. Driving Command
Ensure the correct responses via train line and TCMS of all driving command signals.
17. Train-Ground Communication

Setup the Train-to-ground systems, and verify correct installation of the antennas by VSWR test.

18. Vehicle Normalization

Ensure that all connectors, panels, and covers are normalized.

Section 2 – Energy Distribution

2.1 Instructions list

2.1.1 015_NRG-Energy Distribution

I - Information A - Action R - Result NE - Not Executed

N°	Type	Instruction	File	Result status	Result value	Operator	Vehicle
10001	I	Energy Distribution (SPP=013/015/018)		OK		Tebogo Mtombeni - 529938	TC1
10002	I	Initial conditions		OK		Tebogo Mtombeni - 529938	TC1
10003	I	Car should be de-prepared with non active cab		OK		Tebogo Mtombeni - 529938	TC1
10004	I	Car should be without 400Vac shore supply		OK		Tebogo Mtombeni - 529938	TC1
10005	I	All the Circuit Breakers should be OPEN		OK		Tebogo Mtombeni - 529938	TC1
10006	I	Connector XBAT+ Positive and XBAT-2 Negative should not be connected to the battery		OK		Tebogo Mtombeni - 529938	TC1
10007	I	Diodes		OK		Tebogo Mtombeni - 529938	TC1
10008	I	Using a multimeter, check the presence and correct orientation of the diodes by doing the following continuity tests: 1.Continuity/Low resistance measured with Positive led of the multimeter on the Anode (L), and the negative on the Cathode (R) 2.No Continuity/Open circuit /infinite resistance measured with Negative led of the multimeter on the Anode(L), and the Positive on the Cathode(R)		OK		Tebogo Mtombeni - 529938	TC1
10009	R	Diode 15V1, between pins 6L and 7R of terminal block 93XT600 is present and correctly oriented		OK		Tebogo Mtombeni - 529938	TC1
10010	R	Diode 18V3, between pins 1L and 1R of terminal block 93XT102 is present and correctly oriented		OK		Tebogo Mtombeni - 529938	TC1
10011	R	Diode 18V1, between pins 2L and 2R of terminal block 93XT102 is present and correctly oriented		OK		Tebogo Mtombeni - 529938	TC1
10012	R	Diode 18V2, between pins 3L and 3R of terminal block 93XT102 is present and correctly oriented		OK		Tebogo Mtombeni - 529938	TC1

10013	I	Voltage Isolation		OK		Tebogo Mtombeni - 529938	TC1
10014	A	Open the left side cover of the Static Converter (CVS) and check Visually that the cables are correctly connected to the points XBAT+(BCOF) and XBAT-1/ XBAT-2 (ISO_BCM)		OK		Tebogo Mtombeni - 529938	TC1
10015	R	Cables are correctly connected in the Power Bus XBAT+ Positive (BCOF) and XBAT-1/ XBAT-2 Negative (ISO_BCM)		OK		Tebogo Mtombeni - 529938	TC1
10016	A	Check Resistence (Ohm) between point XBAT+ Positive of the power bus (BCOF) and carbody		OK		Tebogo Mtombeni - 529938	TC1
10017	R	Value (Ohm) Should be infinite. There is NO Continuity between point XBAT+ Positive of the power bus (BCOF) and carbody		OK		Tebogo Mtombeni - 529938	TC1
10018	A	Check Resistence (Ohm) between point XBAT-1 Negative of the Power Bus (ISO_BCM) and carbody		OK		Tebogo Mtombeni - 529938	TC1
10019	R	Value (Ohm) Should be about 0 Ohm. There is Continuity between point XBAT-1 Negative of the Power Bus (ISO_BCM) and carbody		OK		Tebogo Mtombeni - 529938	TC1
10020	A	Check Resistence (Ohm) between point XBAT-2 Negative of the Power Bus (ISO_BCM) and carbody		OK		Tebogo Mtombeni - 529938	TC1
10021	R	Value (Ohm) Should be about 0 Ohm. There is Continuity between point XBAT-1 Negative of the Power Bus (ISO_BCM) and carbody		OK		Tebogo Mtombeni - 529938	TC1
10022	I	Close left side cover of the Static Converter (CVS)		OK		Tebogo Mtombeni - 529938	TC1
10023	A	Put Connector XBAT+ Positive and XBAT-2 Negative in the Battery. ENSURE BOTH SIDES OF THE TERMINALS ARE STURDY, CONNECTED CORRECTLY AND FASTENED		OK		Tebogo Mtombeni - 529938	TC1
10024	R	Confirm the presence of battery voltage (above 80Vdc) between Circuit Breaker 15Q2 point 1 and carbody. (Permanent Line)		OK		Tebogo Mtombeni - 529938	TC1
10025	A	Close Circuit Breaker 15Q2 (Permanent Line)		OK		Tebogo Mtombeni - 529938	TC1

10026	A	Close Circuit Breaker 15Q4 (Permanent Line)		OK		Tebogo Mtombeni - 529938	TC1
10027	A	Close Circuit Breaker 15Q1 (Normal Line)		OK		Tebogo Mtombeni - 529938	TC1
10028	A	Close Circuit Breaker 15Q3 (Normal Line)		OK		Tebogo Mtombeni - 529938	TC1
10029	A	Close Circuit Breaker 13Q1 (230Vac)		OK		Tebogo Mtombeni - 529938	TC1
10030	A	Close Circuit Breaker 13Q3 (230Vac)		OK		Tebogo Mtombeni - 529938	TC1
10031	A	Close Circuit Breaker 13Q4		OK		Tebogo Mtombeni - 529938	TC1
10032	I	Permanent and Normal Line		OK		Tebogo Mtombeni - 529938	TC1
10033	A	Close Circuit Breaker 20Q1		OK		Tebogo Mtombeni - 529938	TC1
10034	A	Close Circuit Breaker 18Q1		OK		Tebogo Mtombeni - 529938	TC1
10035	A	Close Circuit Breaker 20Q2		OK		Tebogo Mtombeni - 529938	TC1
10036	A	Close Circuit Breaker 18Q2		OK		Tebogo Mtombeni - 529938	TC1
10037	A	Close Circuit Breaker 25Q6		OK		Tebogo Mtombeni - 529938	TC1
10038	A	Close Circuit Breaker 27Q1		OK		Tebogo Mtombeni - 529938	TC1
10039	A	Prior to Switching the car ON and Plugging the shore supply onto the CVS. Open the CVS Agate cover		OK		Tebogo Mtombeni - 529938	TC1
10040	R	The AGATE is OFF		OK		Tebogo Mtombeni - 529938	TC1
10041	I	MCE Software Upload		OK		Tebogo Mtombeni - 529938	TC1
10042	A	Insert a USB programmed with the latest MCE Software into the MCE		OK		Tebogo Mtombeni - 529938	TC1
10043	A	Close Circuit Breaker 40Q1		OK		Tebogo Mtombeni - 529938	TC1
10044	A	Wait about 8 minutes until the 6 yellow LEDs are blinking		OK		Tebogo Mtombeni - 529938	TC1
10045	A	Open Circuit Breaker 40Q1, remove the USB and Close Circuit Breaker 40Q1		OK		Tebogo Mtombeni - 529938	TC1
10046	I	Low voltage watchdog and battery connection		OK		Tebogo Mtombeni - 529938	TC1
10047	A	Turn the Backup Mode Switch 27S1 to "Back Up" position		OK		Tebogo Mtombeni - 529938	TC1

10048	I	Cab Selected On Train Train Line Dev4/1 = END2 90XP14 pin 3		OK		Tebogo Mtombeni - 529938	TC1
10049	A	Force [NI] Dev4/1 = 1.0		OK		Tebogo Mtombeni - 529938	TC1
10050	I	110Vdc Permanent Train Line Dev5/40 = END2 90XP14 pin 29		OK		Tebogo Mtombeni - 529938	TC1
10051	R	Read Defined Variable [NI] Dev5/40 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10052	I	Cab Selected On Train Train Line Dev4/1 = END2 90XP14 pin 3		OK		Tebogo Mtombeni - 529938	TC1
10053	A	Force [NI] Dev4/1 = 0.0		OK		Tebogo Mtombeni - 529938	TC1
10054	A	Reset circuit breaker 15Q4		OK		Tebogo Mtombeni - 529938	TC1
10055	R	Check that relay 15K2 is not active		OK		Tebogo Mtombeni - 529938	TC1
10056	I	110Vdc Permanent Train Line Dev5/40 = END2 90XP14 pin 29		OK		Tebogo Mtombeni - 529938	TC1
10057	R	Read Defined Variable [NI] Dev5/40 = 0.0		OK	0	Tebogo Mtombeni - 529938	TC1
10058	A	Turn key 30A1.S1 to Active Cabin Position		OK		Tebogo Mtombeni - 529938	TC1
10059	R	Relay 15K2 is active		OK		Tebogo Mtombeni - 529938	TC1
10060	I	110Vdc Permanent Train Line Dev5/40 = END2 90XP14 pin 29		OK		Tebogo Mtombeni - 529938	TC1
10061	R	Read Defined Variable [NI] Dev5/40 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10062	A	Turn and Hold the Battery Contactor Switch 18S1 to ON Position		OK		Tebogo Mtombeni - 529938	TC1
10063	A	Wait only for TCMS to initialise		OK		Tebogo Mtombeni - 529938	TC1
10064	A	Whilst PACIS is still initialising, turn and hold 18S1 to OFF position		OK		Tebogo Mtombeni - 529938	TC1
10065	R	Read Defined Variable [TT] (MPU1)li_nrg_tc1battoffreqr1___1 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10066	R	Read Defined Variable [TT] (MPU1)li_nrg_tc1battoffreqr2___1 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10067	A	Put Battery Contactor Switch 18S1 to normal position		OK		Tebogo Mtombeni - 529938	TC1
10068	I	Battery Connection Train Line Dev2/76 = Coupler pin 012 Dev2/80 = Coupler pin 112		OK		Tebogo Mtombeni - 529938	TC1

		Dev5/79 = END2 90XP14 pin 30					
10069	R	Read Defined Variable [NI] Dev2/76 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10070	R	Read Defined Variable [NI] Dev2/80 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10071	R	Read Defined Variable [NI] Dev5/79 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10072	I	Battery Disconnection Train Line Dev2/77 = Coupler pin 027 Dev2/40 = Coupler pin 127 Dev5/75 = END2 90XP14 pin 31		OK		Tebogo Mtombeni - 529938	TC1
10073	R	Read Defined Variable [NI] Dev2/77 = 0.0		OK	0	Tebogo Mtombeni - 529938	TC1
10074	R	Read Defined Variable [NI] Dev2/40 = 0.0		OK	0	Tebogo Mtombeni - 529938	TC1
10075	R	Read Defined Variable [NI] Dev5/75 = 0.0		OK	0	Tebogo Mtombeni - 529938	TC1
10076	R	Confirm the presence of battery voltage on the Normal line, between pin 2 of terminal block 93XT600 and ground		OK		Tebogo Mtombeni - 529938	TC1
10077	I	CVS Software Upload		OK		Tebogo Mtombeni - 529938	TC1
10078	I	Perform the following steps to prepare for the software upload 1. Connect one side of the RS232 crossed cable to the Laptop and the other side to the Auxiliary Converter electronic at port RS232 2. Configure the RS232 port of the laptop as Com1 3. Open the maintenance software FLASH 32		OK		Tebogo Mtombeni - 529938	TC1
10079	R			OK		Tebogo Mtombeni - 529938	TC1
10080	A	Click on Settings and replicate the image below.		OK		Tebogo Mtombeni - 529938	TC1
10081	A			OK		Tebogo Mtombeni - 529938	TC1
10082	A	After configuration above, click Apply		OK		Tebogo Mtombeni - 529938	TC1
10083	A	Click on Boot loader and follow the picture below (untick the check box)		OK		Tebogo Mtombeni - 529938	TC1
10084	R			OK		Tebogo Mtombeni - 529938	TC1
10085	A	After configuration above, click Apply		OK		Tebogo Mtombeni - 529938	TC1

10086	A	Click on Flash Memory and follow the pictute below		OK		Tebogo Mtombeni - 529938	TC1
10087	R			OK		Tebogo Mtombeni - 529938	TC1
10088	A	After configuration above click Apply, then Ok		OK		Tebogo Mtombeni - 529938	TC1
10089	A	Click on File Open, according picture below		OK		Tebogo Mtombeni - 529938	TC1
10090	R			OK		Tebogo Mtombeni - 529938	TC1
10091	A	Select the File Prasa_3KV_FPGA.S3		OK		Tebogo Mtombeni - 529938	TC1
10092	A			OK		Tebogo Mtombeni - 529938	TC1
10093	A	Reset the 2 circuit breakers located close to Electronic (AA3S) on the CVS		OK		Tebogo Mtombeni - 529938	TC1
10094	A	Timer 10.0 S		OK		Tebogo Mtombeni - 529938	TC1
10095	A	Click on Program, according picture below		OK		Tebogo Mtombeni - 529938	TC1
10096	R			OK		Tebogo Mtombeni - 529938	TC1
10097	R			OK		Tebogo Mtombeni - 529938	TC1
10098	R	Wait for the upload to complete to 100% , then Exit to close the program.		OK		Tebogo Mtombeni - 529938	TC1
10099	I	AC address coding and Shore Supply Mode		OK		Tebogo Mtombeni - 529938	TC1
10100	A	Use the AGATE to shutdown the train by resetting the circuit breakers CC(AL) and CC(ALS) in the AGATE apartment		OK		Tebogo Mtombeni - 529938	TC1
10101	A	Remove connector -18XP11_1 from the Auxiliary Converter		OK		Tebogo Mtombeni - 529938	TC1
10102	A	Check continuity between pins 51 and 63 ; and pins 52 and 64 on connector 18XP11_1		OK		Tebogo Mtombeni - 529938	TC1
10103	R	Pins 51 and 63 are continuos; and pins 52 and 63 are continuous		OK		Tebogo Mtombeni - 529938	TC1
10104	A	Switch ON the IES Status on the test bench to make available the IES STATUS signal in the Auxiliary Converter		OK		Tebogo Mtombeni - 529938	TC1
10105	R	Check continuity between point 65 and point 70 (IES STATUS) on connector -		OK		Tebogo Mtombeni - 529938	TC1

		18XP11_1 from the Auxiliary Converter (ACU)					
10106	A	Return the connector -18XP11_1 into the Auxiliary Converter		OK		Tebogo Mtombeni - 529938	TC1
10107	A	Turn Switch "27S1'' (Backup Mode Position) to 'Normal Mode'		OK		Tebogo Mtombeni - 529938	TC1
10108	I	Turn the ACU Isolation Switch 18S3 to "Normal" position		OK		Tebogo Mtombeni - 529938	TC1
10109	A	Turn Battery Contactor Switch "18S1" to ON Position		OK		Tebogo Mtombeni - 529938	TC1
10110	I	In the LV Box, check the voltage on point 7 of terminal block 93XT600		OK		Tebogo Mtombeni - 529938	TC1
10111	R	Voltage on point 7 of terminal block 93XT600		OK	110.7	Tebogo Mtombeni - 529938	TC1
10112	I	NOTE: When shore supply is connected to Auxilliary Converter, BE CAREFUL not to touch connector -90XR53.X3/-90XR53.X2/-90XR53.X1 (3000Volts) and connector -90XR52.X1/--90XR52.X2/-90XR52.X3 (400Volts) located in the END 2 Intercar Connector of the car.		OK		Tebogo Mtombeni - 529938	TC1
10113	A	Ensure shore supply power source is off. Input Shore Supply Connector on Auxiliary Converter and switch it on		OK		Tebogo Mtombeni - 529938	TC1
10114	R	Auxiliary Converter is working		OK		Tebogo Mtombeni - 529938	TC1
10115	R	In the LV Box, check the voltage on point 7 of terminal block 93XT600, compare with the value read before, and see that the new value is higher than before		OK		Tebogo Mtombeni - 529938	TC1
10116	A	Perform a phase rotation measurement on Connector 90XR52 between phases U(X1),V(X2),W(X3) and ensure the rotation is in the correct direction		OK		Tebogo Mtombeni - 529938	TC1
10117	R	Phase rotation between U,V,W is correct		OK		Tebogo Mtombeni - 529938	TC1
10118	R	Check 230Vac between points L and N of the plug -13XT2		OK		Tebogo Mtombeni - 529938	TC1
10119	R	Check 230Vac between points L and N of the plug -13XT3		OK		Tebogo Mtombeni - 529938	TC1
10120	A	Remove the external shore supply		OK		Tebogo Mtombeni - 529938	TC1

10121	A	Switch OFF the IES Status on the test bench to normalize the lines of status signal (IES STATUS)		OK		Tebogo Mtombeni - 529938	TC1
10122	R	The battery is no longer being charged		OK		Tebogo Mtombeni - 529938	TC1
10123	R	Check 0Vac between points L and N of the plug -13XT2		OK		Tebogo Mtombeni - 529938	TC1
10124	R	Check 0Vac between points L and N of the plug -13XT3		OK		Tebogo Mtombeni - 529938	TC1
10125	I	Battery Disconection		OK		Tebogo Mtombeni - 529938	TC1
10126	A	Turn Battery Contactor Switch "18S1" to OFF Position		OK		Tebogo Mtombeni - 529938	TC1
10127	R	Battery is still connected to the Permanent Line		OK		Tebogo Mtombeni - 529938	TC1
10128	A	Open the circuit breaker 40Q1		OK		Tebogo Mtombeni - 529938	TC1
10129	A	Turn Switch "27S1'' (Backup Mode Position) to 'Back up Mode'		OK		Tebogo Mtombeni - 529938	TC1
10130	A	Turn Battery Contactor Switch "18S1" to ON Position		OK		Tebogo Mtombeni - 529938	TC1
10131	A	Turn Driver's Master Key 30A1.S1 to Non Active Cabin		OK		Tebogo Mtombeni - 529938	TC1
10132	R	Battery is still connected to the Normal Line		OK		Tebogo Mtombeni - 529938	TC1
10133	A	Turn Driver's Master Key 30A1.S1 to Active Cabin Position		OK		Tebogo Mtombeni - 529938	TC1
10134	A	Disconnect wire 18204LD to the CVS at terminal block -93XT104_5 point 10		OK		Tebogo Mtombeni - 529938	TC1
10135	A	Turn and Hold the Battery Contactor Switch "18S1" to OFF Position		OK		Tebogo Mtombeni - 529938	TC1
10136	A	Close the circuit breaker 40Q1		OK		Tebogo Mtombeni - 529938	TC1
10137	I	Battery Disconnection Train Line Dev2/77 = Coupler pin 027 Dev2/40 = Coupler pin 127 Dev5/75 = END2 90XP14 pin 31		OK		Tebogo Mtombeni - 529938	TC1
10138	R	Read Defined Variable [NI] Dev2/77 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10139	R	Read Defined Variable [NI] Dev2/40 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1

10140	R	Read Defined Variable [NI] Dev5/75 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10141	R	The Normal Line is disconnected from the battery		OK		Tebogo Mtombeni - 529938	TC1
10142	I	Battery Connection Train Line Dev2/76 = Coupler pin 012 Dev2/80 = Coupler pin 112 Dev5/79 = END2 90XP14 pin 30		OK		Tebogo Mtombeni - 529938	TC1
10143	R	Read Defined Variable [NI] Dev2/76 = 0.0		OK	0	Tebogo Mtombeni - 529938	TC1
10144	R	Read Defined Variable [NI] Dev2/80 = 0.0		OK	0	Tebogo Mtombeni - 529938	TC1
10145	R	Read Defined Variable [NI] Dev5/79 = 0.0		OK	0	Tebogo Mtombeni - 529938	TC1
10146	A	Reconnect wire 18204LD to the CVS at terminal block -93XT104_5 point 10		OK		Tebogo Mtombeni - 529938	TC1
10147	I	Shore Supply Power ON		OK		Tebogo Mtombeni - 529938	TC1
10148	A	Turn the IES STATUS toggle switch on the Testbench into IES1		OK		Tebogo Mtombeni - 529938	TC1
10149	A	Ensure shore supply power source is off. Input Shore Supply Connector on Auxiliary Converter and switch it on		OK		Tebogo Mtombeni - 529938	TC1
10150	I	End of test		OK		Tebogo Mtombeni - 529938	TC1

Section 3 – TCMS Network

3.1 Instructions list

3.1.1 025_NET-TCMS Network

I - Information A - Action R - Result NE - Not Executed

N°	Type	Instruction	File	Result status	Result value	Operator	Vehicle
10001	I	TCMS Network (SPP=25)		OK		Anthonia Mabowa - 494131	TC1
10002	I	Initial conditions		OK		Anthonia Mabowa - 494131	TC1
10003	I	Backup Mode Switch 27S1 in "Normal" Position		OK		Anthonia Mabowa - 494131	TC1
10004	I	Car should be prepared (Battery contactor switch 18S1 in ON position)		OK		Anthonia Mabowa - 494131	TC1
10005	I	Vehicle test bench should be configured as TC2: 1. TC2 Dataplugs 2. MCE switch set to TC2		OK		Anthonia Mabowa - 494131	TC1
10006	I	The test bench should be connected to the vehicle		OK		Anthonia Mabowa - 494131	TC1
10007	I	Power supply to the 25A2 BRIOM 32/16 ETH 2		OK		Anthonia Mabowa - 494131	TC1
10008	A	Close Circuit Breaker 25Q2		OK		Anthonia Mabowa - 494131	TC1
10009	R	BRIOM 25A2 is ON		OK		Anthonia Mabowa - 494131	TC1
10010	A	Check visually that ground braid is connected to BRIOM		OK		Anthonia Mabowa - 494131	TC1
10011	I	Power supply to the 25A3 BRIOM 32/16 ETH 3		OK		Anthonia Mabowa - 494131	TC1
10012	A	Close Circuit Breaker 25Q3		OK		Anthonia Mabowa - 494131	TC1
10013	R	BRIOM 25A3 is ON		OK		Anthonia Mabowa - 494131	TC1
10014	A	Check visually that ground braid is connected to BRIOM		OK		Anthonia Mabowa - 494131	TC1
10015	I	Power supply to the 25A4 BRIOM 32/16 ETH 4		OK		Anthonia Mabowa - 494131	TC1
10016	A	Close Circuit Breaker 25Q4		OK		Anthonia Mabowa - 494131	TC1
10017	R	BRIOM 25A4 is ON		OK		Anthonia Mabowa - 494131	TC1

10018	A	Check visually that ground braid is connected to BRIOM		OK		Anthonia Mabowa - 494131	TC1
10019	I	Power supply to the 25A5 BRIOM 32/16 ETH 5		OK		Anthonia Mabowa - 494131	TC1
10020	A	Close Circuit Breaker 25Q5		OK		Anthonia Mabowa - 494131	TC1
10021	R	BRIOM 25A5 is ON		OK		Anthonia Mabowa - 494131	TC1
10022	A	Check visually that ground braid is connected to BRIOM		OK		Anthonia Mabowa - 494131	TC1
10023	I	Power supply to the 25A6 BRIOM 32/16 ETH 6		OK		Anthonia Mabowa - 494131	TC1
10024	A	Close Circuit Breaker 25Q6		OK		Anthonia Mabowa - 494131	TC1
10025	R	BRIOM 25A6 is ON		OK		Anthonia Mabowa - 494131	TC1
10026	A	Check visually that ground braid is connected to BRIOM		OK		Anthonia Mabowa - 494131	TC1
10027	I	Power supply to the 25A7 BRIOM 32/16 ETH 7		OK		Anthonia Mabowa - 494131	TC1
10028	A	Close Circuit Breaker 25Q7		OK		Anthonia Mabowa - 494131	TC1
10029	R	BRIOM 25A7 is ON		OK		Anthonia Mabowa - 494131	TC1
10030	A	Check visually that ground braid is connected to BRIOM		OK		Anthonia Mabowa - 494131	TC1
10031	I	Power supply to the 25A11 SWITCH ETHERNET (CRS2)		OK		Anthonia Mabowa - 494131	TC1
10032	A	Close Circuit Breaker 25Q11		OK		Anthonia Mabowa - 494131	TC1
10033	R	CRS2 25A11 is ON		OK		Anthonia Mabowa - 494131	TC1
10034	I	Power supply to the 25A12 SWITCH ETHERNET (CRS3)		OK		Anthonia Mabowa - 494131	TC1
10035	A	Close Circuit Breaker 25Q12		OK		Anthonia Mabowa - 494131	TC1
10036	R	CRS3 25A12 is ON		OK		Anthonia Mabowa - 494131	TC1
10037	I	Power supply to the 25A15 TRAIN ROUTER SWITCH (TRS)		OK		Anthonia Mabowa - 494131	TC1
10038	A	Close Circuit Breaker 25Q15		OK		Anthonia Mabowa - 494131	TC1

10039	R	TRS 25A15 is ON		OK		Anthonia Mabowa - 494131	TC1
10040	A	Close Circuit Breaker 25Q14		OK		Anthonia Mabowa - 494131	TC1
10041	A	Close Circuit Breaker 25Q13		OK		Anthonia Mabowa - 494131	TC1
10042	A	Close Circuit Breaker 25Q10		OK		Anthonia Mabowa - 494131	TC1
10043	I	Power supply to the 25A13 SWITCH ETHERNET (CRS4)		OK		Anthonia Mabowa - 494131	TC1
10044	R	CRS4 25A13 is ON		OK		Anthonia Mabowa - 494131	TC1
10045	I	Power supply to the 25A10 SWITCH ETHERNET (CRS1)		OK		Anthonia Mabowa - 494131	TC1
10046	R	CRS1 25A10 is ON		OK		Anthonia Mabowa - 494131	TC1
10047	I	Power supply to the 25A14 ETHERNET REPEATER (TBR)		OK		Anthonia Mabowa - 494131	TC1
10048	R	TBR 25A17 is ON		OK		Anthonia Mabowa - 494131	TC1
10049	I	Power supply to the 25A17 DDU ACE		OK		Anthonia Mabowa - 494131	TC1
10050	A	Close Circuit Breaker 25Q17		OK		Anthonia Mabowa - 494131	TC1
10051	R	The DDU is ON		OK		Anthonia Mabowa - 494131	TC1
10052	I	DDU Software Upload		OK		Anthonia Mabowa - 494131	TC1
10053	I	Perform the following procedure to upload software on the DDU		OK		Anthonia Mabowa - 494131	TC1
10054	I	Ethernet Loop		OK		Anthonia Mabowa - 494131	TC1
10055	A	Check that the LED on ETH0 of the TBR is flashing		OK		Anthonia Mabowa - 494131	TC1
10056	R	The TBR has LED on port ETH0 flashing		OK		Anthonia Mabowa - 494131	TC1
10057	A	For each CRS, check that the LEDs on ports X3 and X4 are flashing		OK		Anthonia Mabowa - 494131	TC1
10058	R	CRS1 has LEDs on ports X3 and X4 flashing		OK		Anthonia Mabowa - 494131	TC1
10059	R	CRS4 has ONLY LED on port X4 flashing		OK		Anthonia Mabowa - 494131	TC1
10060	R	CRS2 has LEDs on ports X3 and X4 flashing		OK		Anthonia Mabowa - 494131	TC1

10061	R	CRS3 has LEDs on ports X3 and X4 flashing		OK		Anthonia Mabowa - 494131	TC1
10062	A	Check that the TRS has LEDs on ports ETH4 and ETH5 flashing		OK		Anthonia Mabowa - 494131	TC1
10063	R	The TRS has LEDs on ports ETH4 and ETH5 flashing		OK		Anthonia Mabowa - 494131	TC1
10064	R	Check on the DDU that all Router Switches are available on the network		OK		Anthonia Mabowa - 494131	TC1
10065	I	END OF TEST		OK		Anthonia Mabowa - 494131	TC1

Section 4 – Cabin Control

4.1 Instructions list

4.1.1 020_CAB-Cabin Control

I - Information A - Action R - Result NE - Not Executed

N°	Type	Instruction	File	Result status	Result value	Operator	Vehicle
10001	I	Cabin Control (SPP=020)		OK		Sizwe Sibanyoni - 484647	TC1
10002	I	Initial Conditions		OK		Sizwe Sibanyoni - 484647	TC1
10003	I	Shore supply is connected and ON		OK		Sizwe Sibanyoni - 484647	TC1
10004	I	Car should be prepared		OK		Sizwe Sibanyoni - 484647	TC1
10005	I	Cabin should be active		OK		Sizwe Sibanyoni - 484647	TC1
10006	I	Use the voltage detector/ magnetic stick to check whether a relay is energised or not		OK		Sizwe Sibanyoni - 484647	TC1
10007	I	Normal Mode - Active Cabin		OK		Sizwe Sibanyoni - 484647	TC1
10008	I	Cab Active TC1 Train Line Dev5/2 = END2 90XP14 pin 4		OK		Sizwe Sibanyoni - 484647	TC1
10009	R	Read Defined Variable [NI] Dev5/2 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10010	I	Master Key TC1 Train Line Dev5/17 = END2 90XP14 pin 17		OK		Sizwe Sibanyoni - 484647	TC1
10011	R	Read Defined Variable [NI] Dev5/17 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10012	R	Read Defined Variable [TT] (MPU1)Li_CAB_Tc1KeyRelayR1 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10013	R	Read Defined Variable [TT] (MPU1)li_cab_tc1keyrelayr2 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10014	R	Read Defined Variable [TT] (MPU1)Li_CAB_Tc1KeyRelayR3 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10015	R	Read Defined Variable [TT] (MPU1)Li_CAB_Tc1KeyRelayR4 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10016	R	Read Defined Variable [TT] (MPU1)li_cab_tc1cabinactiver1 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10017	R	Read Defined Variable [TT] (MPU1)li_cab_tc1cabinactiver2 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1

10018	R	Read Defined Variable [TT] (MPU1)li_cab_tc1cabinactiver3 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10019	R	Read Defined Variable [TT] (MPU1)Li_CAB_Tc1CabinActiveR4 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10020	R	Read Defined Variable [TT] (MPU1)Li_CAB_Tc1CabinActiveR5 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10021	R	Read Defined Variable [TT] (MPU1)li_cab_tc1cabinactiveno = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10022	A	Force [TT] (MPU1)lo_cab_tc1cabdisconnectr1 = 1.0		OK		Sizwe Sibanyoni - 484647	TC1
10023	R	Read Defined Variable [TT] (MPU1)li_cab_tc1cabinactiver1 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10024	R	Read Defined Variable [TT] (MPU1)li_cab_tc1cabinactiver2 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10025	R	Read Defined Variable [TT] (MPU1)li_cab_tc1cabinactiver3 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10026	R	Read Defined Variable [TT] (MPU1)Li_CAB_Tc1CabinActiveR4 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10027	R	Read Defined Variable [TT] (MPU1)Li_CAB_Tc1CabinActiveR5 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10028	R	Read Defined Variable [TT] (MPU1)li_cab_tc1cabinactiveno = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10029	I	Cab Active TC1 Train Line Dev5/2 = END2 90XP14 pin 4		OK		Sizwe Sibanyoni - 484647	TC1
10030	R	Read Defined Variable [NI] Dev5/2 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10031	A	Force [TT] (MPU1)lo_cab_tc1cabdisconnectr1 = 0.0		OK		Sizwe Sibanyoni - 484647	TC1
10032	R	Read Defined Variable [TT] (MPU1)li_cab_tc1cabinactiver1 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10033	I	Normal Mode - Non-Active Cabin		OK		Sizwe Sibanyoni - 484647	TC1
10034	A	Turn Driver's Master Key 30A1.S1 to Non-Active Cabin Position		OK		Sizwe Sibanyoni - 484647	TC1
10035	I	Cab Active TC1 Train Line Dev5/2 = END2 90XP14 pin 4		OK		Sizwe Sibanyoni - 484647	TC1
10036	R	Read Defined Variable [NI] Dev5/2 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1

10037	I	Master Key TC1 Train Line Dev5/17 = END2 90XP14 pin 17		OK		Sizwe Sibanyoni - 484647	TC1
10038	R	Read Defined Variable [NI] Dev5/17 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10039	R	Read Defined Variable [TT] (MPU1)li_cab_tc1masterkey___1 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10040	R	Read Defined Variable [TT] (MPU1)Li_CAB_Tc1KeyRelayR1 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10041	R	Read Defined Variable [TT] (MPU1)li_cab_tc1keyrelayr2 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10042	R	Read Defined Variable [TT] (MPU1)Li_CAB_Tc1KeyRelayR3 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10043	R	Read Defined Variable [TT] (MPU1)Li_CAB_Tc1KeyRelayR4 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10044	R	Read Defined Variable [TT] (MPU1)li_cab_tc1cabinactiver1 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10045	R	Read Defined Variable [TT] (MPU1)li_cab_tc1cabinactiver2 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10046	R	Read Defined Variable [TT] (MPU1)li_cab_tc1cabinactiver3 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10047	R	Read Defined Variable [TT] (MPU1)Li_CAB_Tc1CabinActiveR4 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10048	R	Read Defined Variable [TT] (MPU1)Li_CAB_Tc1CabinActiveR5 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10049	R	Read Defined Variable [TT] (MPU1)li_cab_tc1cabinactiveno = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10050	A	Force [TT] (MPU1)lo_cab_tc1cabdisconnectr2 = 1.0		OK		Sizwe Sibanyoni - 484647	TC1
10051	R	Read Defined Variable [TT] (MPU1)li_cab_tc1cabinactiver1 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10052	R	Read Defined Variable [TT] (MPU1)li_cab_tc1cabinactiver2 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10053	R	Read Defined Variable [TT] (MPU1)li_cab_tc1cabinactiver3 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10054	R	Read Defined Variable [TT] (MPU1)Li_CAB_Tc1CabinActiveR4 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10055	R	Read Defined Variable [TT] (MPU1)Li_CAB_Tc1CabinActiveR5 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1

10056	R	Read Defined Variable [TT] (MPU1)li_cab_tc1cabinactiveno = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10057	A	Release [TT] (MPU1)lo_cab_tc1cabdisconnectr1		OK		Sizwe Sibanyoni - 484647	TC1
10058	A	Release [TT] (MPU1)lo_cab_tc1cabdisconnectr2		OK		Sizwe Sibanyoni - 484647	TC1
10059	I	Other Cab Active		OK		Sizwe Sibanyoni - 484647	TC1
10060	R	Read Defined Variable [TT] (MPU1)li_cab_tc1othercabinactive___1 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10061	I	Cab Selected on Train, Train Line Dev4/1 = END2 90XP14 pin 3 Dev2/1 = COUPLER pin 040 Dev2/2 = COUPLER pin 140		OK		Sizwe Sibanyoni - 484647	TC1
10062	A	Force [NI] Dev4/1 = 1.0		OK		Sizwe Sibanyoni - 484647	TC1
10063	R	Read Defined Variable [NI] Dev2/1 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10064	R	Read Defined Variable [TT] (MPU1)li_cab_tc1othercabinactive___1 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10065	R	Read Defined Variable [NI] Dev2/2 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10066	I	Cab Selected on Train, Train Line Dev4/1 = END2 90XP14 pin 3 Dev2/1 = COUPLER pin 040 Dev2/2 = COUPLER pin 140		OK		Sizwe Sibanyoni - 484647	TC1
10067	A	Force [NI] Dev4/1 = 0.0		OK		Sizwe Sibanyoni - 484647	TC1
10068	R	Read Defined Variable [NI] Dev2/1 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10069	R	Read Defined Variable [NI] Dev2/2 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10070	R	Read Defined Variable [TT] (MPU1)li_cab_tc1othercabinactive___1 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10071	I	Backup Mode - Active Cabin		OK		Sizwe Sibanyoni - 484647	TC1
10072	A	Turn Switch '27S1' (Backup Mode Position) to 'BACKUP Position		OK		Sizwe Sibanyoni - 484647	TC1
10073	A	Turn Driver's Master Key 30A1.S1 to Active Cabin Position		OK		Sizwe Sibanyoni - 484647	TC1

10074	I	Cab Selected on Train, Train Line Dev5/1 = END2 90XP14 pin 3		OK		Sizwe Sibanyoni - 484647	TC1
10075	R	Read Defined Variable [NI] Dev5/1 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10076	R	Check Relay "20K1a" is Energized		OK		Sizwe Sibanyoni - 484647	TC1
10077	R	Check Relay "20K1" is Energized		OK		Sizwe Sibanyoni - 484647	TC1
10078	R	Check Relay "20K1b" is Energized		OK		Sizwe Sibanyoni - 484647	TC1
10079	R	Check Relay "20K1c" is Energized		OK		Sizwe Sibanyoni - 484647	TC1
10080	R	Check Relay "20K2" is Energized		OK		Sizwe Sibanyoni - 484647	TC1
10081	R	Check Relay "20K12a" is Energized		OK		Sizwe Sibanyoni - 484647	TC1
10082	R	Check Relay "20K11" is Energized		OK		Sizwe Sibanyoni - 484647	TC1
10083	R	Check Relay "20K12b" is Energized		OK		Sizwe Sibanyoni - 484647	TC1
10084	R	Check Relay "20K10b" is Energized		OK		Sizwe Sibanyoni - 484647	TC1
10085	I	Backup Mode- Non-Active Cabin		OK		Sizwe Sibanyoni - 484647	TC1
10086	A	Turn Driver's Master Key 30A1.S1 to Non-Active Cabin Position		OK		Sizwe Sibanyoni - 484647	TC1
10087	I	Cab Selected on Train, Train Line Dev5/1 = END2 90XP14 pin 3		OK		Sizwe Sibanyoni - 484647	TC1
10088	R	Read Defined Variable [NI] Dev5/1 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10089	R	Check Relay "20K1" is De-energized		OK		Sizwe Sibanyoni - 484647	TC1
10090	R	Check Relay "20K1a" is De-energized		OK		Sizwe Sibanyoni - 484647	TC1
10091	R	Check Relay "20K1b" is De-energized		OK		Sizwe Sibanyoni - 484647	TC1
10092	R	Check Relay "20K1c" is De-energized		OK		Sizwe Sibanyoni - 484647	TC1
10093	R	Check Relay "20K2" is De-energized		OK		Sizwe Sibanyoni - 484647	TC1
10094	R	Check Relay "20K11" is De-energized		OK		Sizwe Sibanyoni - 484647	TC1
10095	R	Check Relay "20K12a" is De-energized		OK		Sizwe Sibanyoni - 484647	TC1
10096	R	Check Relay "20K12b" is De-energized		OK		Sizwe Sibanyoni - 484647	TC1
10097	R	Check Relay "20K10b" is De-energized		OK		Sizwe Sibanyoni - 484647	TC1

10098	I	Automatic Start		OK		Sizwe Sibanyoni - 484647	TC1
10099	A	Turn Battery Contactor Switch 18S1" to OFF position		OK		Sizwe Sibanyoni - 484647	TC1
10100	A	Turn Switch '27S1' (Backup Mode Position) to 'Normal' Position		OK		Sizwe Sibanyoni - 484647	TC1
10101	A	Turn Driver's Master Key 30A1.S1 to Active Cabin Position		OK		Sizwe Sibanyoni - 484647	TC1
10102	A	Turn Battery Contactor Switch 18S1" to ON position - Allow time for TCMS to start up		OK		Sizwe Sibanyoni - 484647	TC1
10103	A	Close Circuit Breaker 84Q1		OK		Sizwe Sibanyoni - 484647	TC1
10104	A	Press and hold the Automatic Start Pushbutton 20S1		OK		Sizwe Sibanyoni - 484647	TC1
10105	R	Read Defined Variable [TT] (MPU1)li_cab_tc1automaticstartr1 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10106	R	Read Defined Variable [TT] (MPU1)li_cab_tc1automaticstartr2 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10107	R	Read Defined Variable [TT] (MPU1)lo_cab_tc1automaticstartr1 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10108	R	Read Defined Variable [TT] (MPU1)lo_cab_tc1automaticstartr2 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10109	R	Check that the pushbutton lamp on 20S1 is ON		OK		Sizwe Sibanyoni - 484647	TC1
10110	A	Release the Automatic Start Pushbutton 20S1		OK		Sizwe Sibanyoni - 484647	TC1
10111	R	Read Defined Variable [TT] (MPU1)li_cab_tc1automaticstartr1 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10112	R	Read Defined Variable [TT] (MPU1)li_cab_tc1automaticstartr2 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10113	R	Read Defined Variable [TT] (MPU1)lo_cab_tc1automaticstartr1 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10114	R	Read Defined Variable [TT] (MPU1)lo_cab_tc1automaticstartr2 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10115	I	Standby Mode		OK		Sizwe Sibanyoni - 484647	TC1
10116	A	Turn Driver's Master Key 30A1.S1 to Non-Active Cabin Position		OK		Sizwe Sibanyoni - 484647	TC1

10117	A	Press and hold the Standby State pushbutton 20S2		OK		Sizwe Sibanyoni - 484647	TC1
10118	R	Read Defined Variable [TT] (MPU1)Li_CAB_Tc1ISMR1___1 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10119	R	Read Defined Variable [TT] (MPU1)Li_CAB_Tc1ISMR2___1 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10120	A	Release the Standby State pushbutton 20S2		OK		Sizwe Sibanyoni - 484647	TC1
10121	R	Read Defined Variable [TT] (MPU1)Li_CAB_Tc1ISMR1___1 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10122	R	Read Defined Variable [TT] (MPU1)Li_CAB_Tc1ISMR2___1 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10123	A	Force [TT] (MPU1)lo_cab_tc1ismlamp = 1.0		OK		Sizwe Sibanyoni - 484647	TC1
10124	R	The Standby State pushbutton lamp 20S2 is ON		OK		Sizwe Sibanyoni - 484647	TC1
10125	A	Release [TT] (MPU1)lo_cab_tc1ismlamp		OK		Sizwe Sibanyoni - 484647	TC1
10126	R	The Standby State pushbutton lamp 20S2 is OFF		OK		Sizwe Sibanyoni - 484647	TC1
10127	A	Turn Driver's Master Key 30A1.S1 to Active Cabin Position		OK		Sizwe Sibanyoni - 484647	TC1
10128	I	END OF TEST		OK		Sizwe Sibanyoni - 484647	TC1

Section 5 – Internal Lighting

5.1 Instructions list

5.1.1 052_LGT-Internal Lighting

I - Information A - Action R - Result NE - Not Executed

N°	Type	Instruction	File	Result status	Result value	Operator	Vehicle
10001	I	Internal Lighting (SPP=52)		OK		Tebogo Mtombeni - 529938	TC1
10002	I	Initial Conditions		OK		Tebogo Mtombeni - 529938	TC1
10003	I	Car should be prepared		OK		Tebogo Mtombeni - 529938	TC1
10004	I	Key 30A1.S1 should be in Active Cabin position		OK		Tebogo Mtombeni - 529938	TC1
10005	I	Circuit Breakers		OK		Tebogo Mtombeni - 529938	TC1
10006	A	Close Circuit Breaker 52Q1		OK		Tebogo Mtombeni - 529938	TC1
10007	A	Close Circuit Breaker 52Q2		OK		Tebogo Mtombeni - 529938	TC1
10008	A	Close Circuit Breaker 52Q3		OK		Tebogo Mtombeni - 529938	TC1
10009	A	Close Circuit Breaker 52Q4		OK		Tebogo Mtombeni - 529938	TC1
10010	A	Close Circuit Breaker 52Q5		OK		Tebogo Mtombeni - 529938	TC1
10011	A	Close Circuit Breaker 52Q6		OK		Tebogo Mtombeni - 529938	TC1
10012	I	Cab Ceiling Lighting		OK		Tebogo Mtombeni - 529938	TC1
10013	A	Turn battery contactor switch 18S1 to OFF position		OK		Tebogo Mtombeni - 529938	TC1
10014	A	Wait 3 minutes for cab lights to switch off		OK		Tebogo Mtombeni - 529938	TC1
10015	R	All cabin ceiling lights are OFF (52U40, 52U41,52U42)		OK		Tebogo Mtombeni - 529938	TC1
10016	R	Both cab ceiling light pushbutton lamps are OFF (52S3 Left and 52S4 Right)		OK		Tebogo Mtombeni - 529938	TC1
10017	A	Push the cab lighting LEFT side button (52S3)		OK		Tebogo Mtombeni - 529938	TC1
10018	I	Wait 3 minutes for the lights to turn off. Continue with the following steps while waiting		OK		Tebogo Mtombeni - 529938	TC1
10019	R	Cabin ceiling light 52U40 is ON		OK		Tebogo Mtombeni - 529938	TC1

10020	R	Cabin ceiling light 52U41 is ON		OK		Tebogo Mtombeni - 529938	TC1
10021	R	Cabin ceiling light 52U42 is ON		OK		Tebogo Mtombeni - 529938	TC1
10022	R	Left pushbutton lamp 52S3 is ON		OK		Tebogo Mtombeni - 529938	TC1
10023	R	Right pushbutton lamp 52S4 is ON		OK		Tebogo Mtombeni - 529938	TC1
10024	A	Press and hold the cab lighting LEFT side button (52S3)		OK		Tebogo Mtombeni - 529938	TC1
10025	R	The intensity of cabin ceiling light 52U40 decreases		OK		Tebogo Mtombeni - 529938	TC1
10026	R	The intensity of cabin ceiling light 52U41 decreases		OK		Tebogo Mtombeni - 529938	TC1
10027	R	The intensity of cabin ceiling light 52U42 decreases		OK		Tebogo Mtombeni - 529938	TC1
10028	A	Release cab lighting LEFT side button (52S3)		OK		Tebogo Mtombeni - 529938	TC1
10029	I	After the 180s (3 min) timer is expired		OK		Tebogo Mtombeni - 529938	TC1
10030	R	Cabin ceiling light 52U40 is OFF		OK		Tebogo Mtombeni - 529938	TC1
10031	R	Cabin ceiling light 52U41 is OFF		OK		Tebogo Mtombeni - 529938	TC1
10032	R	Cabin ceiling light 52U42 is OFF		OK		Tebogo Mtombeni - 529938	TC1
10033	R	Left pushbutton lamp 52S3 is OFF		OK		Tebogo Mtombeni - 529938	TC1
10034	R	Right pushbutton lamp 52S4 is OFF		OK		Tebogo Mtombeni - 529938	TC1
10035	A	Push the cab lighting RIGHT side button (52S4)		OK		Tebogo Mtombeni - 529938	TC1
10036	R	Cabin ceiling light 52U40 is ON		OK		Tebogo Mtombeni - 529938	TC1
10037	R	Cabin ceiling light 52U41 is ON		OK		Tebogo Mtombeni - 529938	TC1
10038	R	Cabin ceiling light 52U42 is ON		OK		Tebogo Mtombeni - 529938	TC1
10039	R	Right pushbutton lamp 52S4 is ON		OK		Tebogo Mtombeni - 529938	TC1
10040	A	Wait 3 minutes for the light to switch off		OK		Tebogo Mtombeni - 529938	TC1
10041	R	Cabin ceiling light 52U40 is OFF		OK		Tebogo Mtombeni - 529938	TC1
10042	R	Cabin ceiling light 52U41 is OFF		OK		Tebogo Mtombeni - 529938	TC1

10043	R	Cabin ceiling light 52U42 is OFF		OK		Tebogo Mtombeni - 529938	TC1
10044	R	Right pushbutton lamp 52S4 is OFF		OK		Tebogo Mtombeni - 529938	TC1
10045	I	Turn battery contactor switch 18S1 to ON position		OK		Tebogo Mtombeni - 529938	TC1
10046	R	In the saloon, all right-side emergency lights are "ON" on all light modules		OK		Tebogo Mtombeni - 529938	TC1
10047	R	In the saloon, all LEFT side emergency lights are "ON" on all light modules		OK		Tebogo Mtombeni - 529938	TC1
10048	R	Both cab ceiling light pushbutton lamps are ON (52S3 Left and 52S4 Right)		OK		Tebogo Mtombeni - 529938	TC1
10049	A	Press and hold the cab lighting RIGHT side button (52S4)		OK		Tebogo Mtombeni - 529938	TC1
10050	R	The intensity of cabin ceiling light 52U40 decreases		OK		Tebogo Mtombeni - 529938	TC1
10051	R	The intensity of cabin ceiling light 52U41 decreases		OK		Tebogo Mtombeni - 529938	TC1
10052	R	The intensity of cabin ceiling light 52U42 decreases		OK		Tebogo Mtombeni - 529938	TC1
10053	A	Release cab lighting RIGHT side button (52S4)		OK		Tebogo Mtombeni - 529938	TC1
10054	A	Open Circuit Breaker 52Q6		OK		Tebogo Mtombeni - 529938	TC1
10055	A	Press and hold the Lamp Test pushbutton 84S1		OK		Tebogo Mtombeni - 529938	TC1
10056	R	Both cab ceiling light pushbutton lamps are ON (52S3 Left and 52S4 Right)		OK		Tebogo Mtombeni - 529938	TC1
10057	A	Release the Lamp Test pushbutton 84S1		OK		Tebogo Mtombeni - 529938	TC1
10058	R	Both cab ceiling light pushbutton lamps are OFF (52S3 Left and 52S4 Right)		OK		Tebogo Mtombeni - 529938	TC1
10059	A	Close Circuit Breaker 52Q6		OK		Tebogo Mtombeni - 529938	TC1
10060	I	Cleaning Lighting Command		OK		Tebogo Mtombeni - 529938	TC1
10061	I	Turn battery contactor switch 18S1 to OFF position		OK		Tebogo Mtombeni - 529938	TC1
10062	A	Turn Cleaning Staff Lights Switch 52S6 to ON position		OK		Tebogo Mtombeni - 529938	TC1

10063	R	The saloon RIGHT side emergency lights (low intensity) are "ON" on all light modules		OK		Tebogo Mtombeni - 529938	TC1
10064	R	The saloon LEFT side emergency lights (low intensity) are "ON" on all light modules		OK		Tebogo Mtombeni - 529938	TC1
10065	A	Open Circuit Breaker 52Q5		OK		Tebogo Mtombeni - 529938	TC1
10066	R	The saloon RIGHT side emergency lights (low intensity) are OFF on all light modules		OK		Tebogo Mtombeni - 529938	TC1
10067	R	The saloon LEFT side emergency lights (low intensity) are OFF on all light modules		OK		Tebogo Mtombeni - 529938	TC1
10068	A	Close Circuit Breaker 52Q5		OK		Tebogo Mtombeni - 529938	TC1
10069	I	Main Lighting Command		OK		Tebogo Mtombeni - 529938	TC1
10070	A	Turn Cleaning Staff Lights Switch 52S6 to ON position		OK		Tebogo Mtombeni - 529938	TC1
10071	R	All saloon emergency lights (low intensity) are "ON" on all light modules (Left & right)		OK		Tebogo Mtombeni - 529938	TC1
10072	I	Turn battery contactor switch 18S1 to ON position - allow time for TCMS to initialize		OK		Tebogo Mtombeni - 529938	TC1
10073	A	Force [TT] (MPU1)Io_lgt_tc1mainlgtcmd = 1.0		OK		Tebogo Mtombeni - 529938	TC1
10074	R	The saloon RIGHT side main lighting (high intensity) is "ON" on all light modules		OK		Tebogo Mtombeni - 529938	TC1
10075	R	The saloon LEFT side main lighting (high intensity) is O"N" on all light modules		OK		Tebogo Mtombeni - 529938	TC1
10076	A	Release [TT] (MPU1)Io_lgt_tc1mainlgtcmd		OK		Tebogo Mtombeni - 529938	TC1
10077	R	All saloon emergency lights (low intensity) are "ON" on all light modules (Left & Right)		OK		Tebogo Mtombeni - 529938	TC1
10078	I	END OF TEST		OK		Tebogo Mtombeni - 529938	TC1

Section 6 – PACIS System

6.1 Instructions list

6.1.1 054_PIS-PACIS System

I - Information A - Action R - Result NE - Not Executed

N°	Type	Instruction	File	Result status	Result value	Operator	Vehicle
10001	I	PACIS System (SPP=054)		OK		Sizwe Sibanyoni - 484647	TC1
10002	I	Initial conditions		OK		Sizwe Sibanyoni - 484647	TC1
10003	I	Car must be prepared - battery contactor 18S1 closed		OK		Sizwe Sibanyoni - 484647	TC1
10004	I	Circuit Breakers		OK		Sizwe Sibanyoni - 484647	TC1
10005	A	Close Circuit Breaker 54Q1		OK		Sizwe Sibanyoni - 484647	TC1
10006	A	Close Circuit Breaker 54Q2		OK		Sizwe Sibanyoni - 484647	TC1
10007	A	Close Circuit Breaker 54Q3		OK		Sizwe Sibanyoni - 484647	TC1
10008	A	Close Circuit Breaker 54Q10		OK		Sizwe Sibanyoni - 484647	TC1
10009	A	Close Circuit Breaker 54Q11		OK		Sizwe Sibanyoni - 484647	TC1
10010	A	Close Circuit Breaker 54Q13		OK		Sizwe Sibanyoni - 484647	TC1
10011	A	Close Circuit Breaker 54Q15		OK		Sizwe Sibanyoni - 484647	TC1
10012	A	Close Circuit Breaker 55Q1		OK		Sizwe Sibanyoni - 484647	TC1
10013	A	Close Circuit Breaker 55Q2		OK		Sizwe Sibanyoni - 484647	TC1
10014	A	Close Circuit Breaker 55Q3		OK		Sizwe Sibanyoni - 484647	TC1
10015	I	Train Router Switch 'TRS'		OK		Sizwe Sibanyoni - 484647	TC1
10016	R	TRS1 is ON		OK		Sizwe Sibanyoni - 484647	TC1
10017	I	Power Supply to UMC Rack		OK		Sizwe Sibanyoni - 484647	TC1
10018	R	All cards on the UMC Rack are ON - PS, EBM, DPC-IOC, NVR, Media Server		OK		Sizwe Sibanyoni - 484647	TC1
10019	I	Driver Control Panel		OK		Sizwe Sibanyoni - 484647	TC1
10020	R	Driver Control Panel is ON		OK		Sizwe Sibanyoni - 484647	TC1
10021	I	Ethernet Switch 'CRS1'		OK		Sizwe Sibanyoni - 484647	TC1

10022	R	CRS1 is ON		OK		Sizwe Sibanyoni - 484647	TC1
10023	I	DPAI-1		OK		Sizwe Sibanyoni - 484647	TC1
10024	R	DPAI-1 is ON		OK		Sizwe Sibanyoni - 484647	TC1
10025	I	DPAI-2		OK		Sizwe Sibanyoni - 484647	TC1
10026	R	DPAI-2 is ON		OK		Sizwe Sibanyoni - 484647	TC1
10027	I	Impedance of Loudspeaker		OK		Sizwe Sibanyoni - 484647	TC1
10028	I	Saloon Speakers Commanded by DPAI-1		OK		Sizwe Sibanyoni - 484647	TC1
10029	A	Measure the impedance on connector '54XP1_X4' between pins: z32(+) and z30 (-)		OK		Sizwe Sibanyoni - 484647	TC1
10030	R	Impedance Result Max : x <= 24 ()		OK	24	Sizwe Sibanyoni - 484647	TC1
10031	I	Saloon Speakers Commanded by DPAI-2		OK		Sizwe Sibanyoni - 484647	TC1
10032	A	Measure the impedance on connector '54XP2_X4' between pins: z32(+) and z30 (-)		OK		Sizwe Sibanyoni - 484647	TC1
10033	R	Impedance Result Max : x <= 32 ()		OK	30.2	Sizwe Sibanyoni - 484647	TC1
10034	I	Front Display 'FRT1'		OK		Sizwe Sibanyoni - 484647	TC1
10035	R	The PWR (power) LED is "ON" on the Front Display FRT1		OK		Sizwe Sibanyoni - 484647	TC1
10036	I	Lateral Display 'LAT1'		OK		Sizwe Sibanyoni - 484647	TC1
10037	R	The PWR (power) LED is "ON" on the Lateral Display LAT1		OK		Sizwe Sibanyoni - 484647	TC1
10038	I	Lateral Display 'LAT2'		OK		Sizwe Sibanyoni - 484647	TC1
10039	R	The PWR (power) LED is "ON" on the Lateral Display LAT2		OK		Sizwe Sibanyoni - 484647	TC1
10040	I	Interior Display 'INT1'		OK		Sizwe Sibanyoni - 484647	TC1
10041	R	The PWR (power) LED is "ON" on the Interior Display INT1		OK		Sizwe Sibanyoni - 484647	TC1
10042	I	Interior Display 'INT2'		OK		Sizwe Sibanyoni - 484647	TC1
10043	R	The PWR (power) LED is "ON" on the Interior Display INT2		OK		Sizwe Sibanyoni - 484647	TC1

10044	I	END OF TEST		OK		Sizwe Sibanyoni - 484647	TC1

Section 7 – Dead Man

7.1 Instructions list

7.1.1 060_DSD-Dead Man

I - Information A - Action R - Result NE - Not Executed

N°	Type	Instruction	File	Result status	Result value	Operator	Vehicle
10001	I	Dead Man (SPP=60)		OK		Dilikani Ngubane - 526515	TC1
10002	I	Initial conditions		OK		Dilikani Ngubane - 526515	TC1
10003	I	TC car is in service and cabin should be active		OK		Dilikani Ngubane - 526515	TC1
10004	A	Position the "Dead Man Override" switch to "Normal" position.		OK		Dilikani Ngubane - 526515	TC1
10005	I	Circuit Breakers		OK		Dilikani Ngubane - 526515	TC1
10006	A	Close Circuit Breaker 60Q1		OK		Dilikani Ngubane - 526515	TC1
10007	A	Close Circuit Breaker 30Q3		OK		Dilikani Ngubane - 526515	TC1
10008	I	Buzzer 60W1		OK		Dilikani Ngubane - 526515	TC1
10009	A	Force [TT] (MPU1)lo_dsd_tc1dmbuzzerr1 = 1.0		OK		Dilikani Ngubane - 526515	TC1
10010	R	The buzzer 60W1 is ON. A noise coming from the buzzer can be clearly heard in the cabin.		OK		Dilikani Ngubane - 526515	TC1
10011	A	Release [TT] (MPU1)lo_dsd_tc1dmbuzzerr1		OK		Dilikani Ngubane - 526515	TC1
10012	R	The buzzer 60W1 is OFF. No noise coming from buzzer.		OK		Dilikani Ngubane - 526515	TC1
10013	A	Force [TT] (MPU1)lo_dsd_tc1dmbuzzerr2 = 1.0		OK		Dilikani Ngubane - 526515	TC1
10014	R	The buzzer 60W1 is ON. A noise coming from the buzzer can be clearly heard in the cabin.		OK		Dilikani Ngubane - 526515	TC1
10015	A	Release [TT] (MPU1)lo_dsd_tc1dmbuzzerr2		OK		Dilikani Ngubane - 526515	TC1
10016	R	The buzzer 60W1 is OFF. No noise coming from buzzer.		OK		Dilikani Ngubane - 526515	TC1
10017	I	Dead Man Lamp		OK		Dilikani Ngubane - 526515	TC1

10018	A	Position the Running Direction switch to "FORWARD"		OK		Dilikani Ngubane - 526515	TC1
10019	R	Read Defined Variable [TT] (MPU1)li_dsd_tc1ebdeadmanrelayr1 = 1.0		OK	1	Dilikani Ngubane - 526515	TC1
10020	R	Read Defined Variable [TT] (MPU1)li_dsd_tc1ebdeadmanrelayr2 = 1.0		OK	1	Dilikani Ngubane - 526515	TC1
10021	A	Position the Running Direction switch 30A1.S1 in "Neutral"		OK		Dilikani Ngubane - 526515	TC1
10022	R	Read Defined Variable [TT] (MPU1)li_dsd_tc1ebdeadmanrelayr1 = 0.0		OK	0	Dilikani Ngubane - 526515	TC1
10023	R	Read Defined Variable [TT] (MPU1)li_dsd_tc1ebdeadmanrelayr2 = 0.0		OK	0	Dilikani Ngubane - 526515	TC1
10024	R	On the alarm module, check the Dead man deactivated symbol is OFF.		OK		Dilikani Ngubane - 526515	TC1
10025	A	Force [TT] (MPU1)lo_dsd_tc1deadmanlampr1 = 1.0		OK		Dilikani Ngubane - 526515	TC1
10026	R	On the alarm module, check the Dead man deactivated symbol is ON		OK		Dilikani Ngubane - 526515	TC1
10027	A	Release [TT] (MPU1)lo_dsd_tc1deadmanlampr1		OK		Dilikani Ngubane - 526515	TC1
10028	R	On the alarm module, check the Dead man deactivated symbol is OFF.		OK		Dilikani Ngubane - 526515	TC1
10029	A	Force [TT] (MPU1)lo_dsd_tc1deadmanlampr2 = 1.0		OK		Dilikani Ngubane - 526515	TC1
10030	R	On the alarm module, check the Dead man deactivated symbol is ON		OK		Dilikani Ngubane - 526515	TC1
10031	A	Release [TT] (MPU1)lo_dsd_tc1deadmanlampr2		OK		Dilikani Ngubane - 526515	TC1
10032	R	On the alarm module, check the Dead man deactivated symbol is OFF.		OK		Dilikani Ngubane - 526515	TC1
10033	I	DSD function		OK		Dilikani Ngubane - 526515	TC1
10034	A	Position the Running Direction switch to "FORWARD"		OK		Dilikani Ngubane - 526515	TC1

10035	R	Read Defined Variable [TT] (MPU1)li_dsd_tc1ebdeadmanrelayr1 = 0.0		OK	0	Dilikani Ngubane - 526515	TC1
10036	R	Read Defined Variable [TT] (MPU1)li_dsd_tc1ebdeadmanrelayr2 = 0.0		OK	0	Dilikani Ngubane - 526515	TC1
10037	A	Timer 5.0 S		OK		Dilikani Ngubane - 526515	TC1
10038	R	Read Defined Variable [TT] (MPU1)li_dsd_tc1ebdeadmanrelayr1 = 1.0		OK	1	Dilikani Ngubane - 526515	TC1
10039	R	Read Defined Variable [TT] (MPU1)li_dsd_tc1ebdeadmanrelayr2 = 1.0		OK	1	Dilikani Ngubane - 526515	TC1
10040	R	On alarm module, check the Dead Man deactivated symbol is ON		OK		Dilikani Ngubane - 526515	TC1
10041	A	Press and hold the dead man button 60S3 on the driver desk		OK		Dilikani Ngubane - 526515	TC1
10042	R	Read Defined Variable [TT] (MPU1)li_dsd_tc1ebdeadmanrelayr1 = 0.0		OK	0	Dilikani Ngubane - 526515	TC1
10043	R	Read Defined Variable [TT] (MPU1)li_dsd_tc1deadmanr1 = 1.0		OK	1	Dilikani Ngubane - 526515	TC1
10044	R	Read Defined Variable [TT] (MPU1)li_dsd_tc1deadmanr2 = 1.0		OK	1	Dilikani Ngubane - 526515	TC1
10045	R	On alarm module, check the Dead man deactivated symbol is OFF.		OK		Dilikani Ngubane - 526515	TC1
10046	A	Release the dead man button 60S3		OK		Dilikani Ngubane - 526515	TC1
10047	A	Timer 5.0 S		OK		Dilikani Ngubane - 526515	TC1
10048	R	Read Defined Variable [TT] (MPU1)li_dsd_tc1ebdeadmanrelayr1 = 1.0		OK	1	Dilikani Ngubane - 526515	TC1
10049	R	Read Defined Variable [TT] (MPU1)li_dsd_tc1deadmanr1 = 0.0		OK	0	Dilikani Ngubane - 526515	TC1
10050	R	Read Defined Variable [TT] (MPU1)li_dsd_tc1deadmanr2 = 0.0		OK	0	Dilikani Ngubane - 526515	TC1
10051	R	On alarm module, check the Dead man deactivated symbol is ON		OK		Dilikani Ngubane - 526515	TC1

10052	A	Press and hold the dead man switch, which is positioned on master controller.		OK		Dilikani Ngubane - 526515	TC1
10053	R	Read Defined Variable [TT] (MPU1)li_dsd_tc1ebdeadmanrelayr1 = 0.0		OK	0	Dilikani Ngubane - 526515	TC1
10054	R	Read Defined Variable [TT] (MPU1)li_dsd_tc1deadmanr1 = 1.0		OK	1	Dilikani Ngubane - 526515	TC1
10055	R	On the alarm module, check the Dead man deactivated symbol is OFF.		OK		Dilikani Ngubane - 526515	TC1
10056	A	Release the dead man button on the master controller		OK		Dilikani Ngubane - 526515	TC1
10057	A	Timer 5.0 S		OK		Dilikani Ngubane - 526515	TC1
10058	R	Read Defined Variable [TT] (MPU1)li_dsd_tc1ebdeadmanrelayr1 = 1.0		OK	1	Dilikani Ngubane - 526515	TC1
10059	R	Read Defined Variable [TT] (MPU1)li_dsd_tc1deadmanr1 = 0.0		OK	0	Dilikani Ngubane - 526515	TC1
10060	R	On alarm module, check the Dead Man deactivated symbol is ON		OK		Dilikani Ngubane - 526515	TC1
10061	I	DSD Override indication		OK		Dilikani Ngubane - 526515	TC1
10062	R	On the alarm module, verify that the Dead Man override (60H2) symbol is OFF.		OK		Dilikani Ngubane - 526515	TC1
10063	A	Press and hold dead man button 60S3		OK		Dilikani Ngubane - 526515	TC1
10064	A	Position the "Dead Man Override" switch to "Override" position (do not release the dead man device actuated in the previous step).		OK		Dilikani Ngubane - 526515	TC1
10065	R	On the alarm module, verify that the Dead Man override (60H2) symbol is ON		OK		Dilikani Ngubane - 526515	TC1
10066	R	Read Defined Variable [TT] (MPU1)li_dsd_tc1ebdeadmanrelayr1 = 1.0		OK	1	Dilikani Ngubane - 526515	TC1
10067	R	Read Defined Variable [TT] (MPU1)li_dsd_tc1deadmanoverridr1 = 1.0		OK	1	Dilikani Ngubane - 526515	TC1
10068	R	Read Defined Variable [TT] (MPU1)li_dsd_tc1deadmanoverridr2 = 1.0		OK	1	Dilikani Ngubane - 526515	TC1

10069	A	Release the dead man button		OK		Dilikani Ngubane - 526515	TC1
10070	A	Position the "Dead Man Override" switch to "Normal" position.		OK		Dilikani Ngubane - 526515	TC1
10071	R	On the alarm module, verify that the Dead Man override (60H2) symbol is OFF		OK		Dilikani Ngubane - 526515	TC1
10072	R	Read Defined Variable [TT] (MPU1)li_dsd_tc1deadmanoverridr1 = 0.0		OK	0	Dilikani Ngubane - 526515	TC1
10073	R	Read Defined Variable [TT] (MPU1)li_dsd_tc1deadmanoverridr2 = 0.0		OK	0	Dilikani Ngubane - 526515	TC1
10074	R	On alarm module, check the Dead man deactivated (60H1)symbol is ON		OK		Dilikani Ngubane - 526515	TC1
10075	A	Position the Running Direction switch 30A1.S1 in "Neutral"		OK		Dilikani Ngubane - 526515	TC1
10076	R	On alarm module, check the Dead man deactivated symbol is OFF		OK		Dilikani Ngubane - 526515	TC1
10077	I	END OF TEST		OK		Dilikani Ngubane - 526515	TC1

Section 8 – External Signalling

8.1 Instructions list

8.1.2 070_SIG_2-Warning Hooters

I - Information A - Action R - Result NE - Not Executed

N°	Type	Instruction	File	Result status	Result value	Operator	Vehicle
10001	I	Warning Hooters SPP=071		OK		Mphato Mphahlele - 480716	TC1
10002	I	Initial Conditions		OK		Mphato Mphahlele - 480716	TC1
10003	I	The air in the main pipe should be at least 4 bar		OK		Mphato Mphahlele - 480716	TC1
10004	I	For this test wear earplugs.		OK		Mphato Mphahlele - 480716	TC1
10005	I	Start of Test		OK		Mphato Mphahlele - 480716	TC1
10006	R	The pressure setting of point H1.12 must be 4 bar Result Min/Max : 4<= x<= 8 (Bar)		OK	4.2	Mphato Mphahlele - 480716	TC1
10007	R	Read Defined Variable [TT] (MPU1)Li_SGL_Tc1WarningHootersR1 = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10008	R	Read Defined Variable [TT] (MPU1)Li_SGL_Tc1WarningHootersR2 = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10009	A	Press the foot pedal 57A13.S1 to actuate the horn and maintain it		OK		Mphato Mphahlele - 480716	TC1
10010	R	Read Defined Variable [TT] (MPU1)Li_SGL_Tc1WarningHootersR1 = 0.0		OK	0	Mphato Mphahlele - 480716	TC1
10011	R	Read Defined Variable [TT] (MPU1)Li_SGL_Tc1WarningHootersR2 = 0.0		OK	0	Mphato Mphahlele - 480716	TC1
10012	I	The pressure setting of point H1.12 remain at 4 bar		OK		Mphato Mphahlele - 480716	TC1
10013	A	Release the foot heater pedal		OK		Mphato Mphahlele - 480716	TC1
10014	R	Horn sound can be heard at 100m distance from the cab		OK		Mphato Mphahlele - 480716	TC1
10015	A	Release the foot heater pedal		OK		Mphato Mphahlele - 480716	TC1
10016	R	Horn sound stops		OK		Mphato Mphahlele - 480716	TC1
10017	R	Read Defined Variable [TT]		OK	1	Mphato Mphahlele - 480716	TC1

		(MPU1)Li_SGL_Tc1WarningHootersR1 = 1.0					
10018	R	Read Defined Variable [TT] (MPU1)Li_SGL_Tc1WarningHootersR2 = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10019	A	Actuate the low pitch horn by pressing down the valve H1.3.1 under the driver's desk		OK		Alleta Sekgololo - 417407	TC1
10020	R	The horn sound can be heard in low pitch		OK		Alleta Sekgololo - 417407	TC1
10021	A	Release the valve H1.3.1		OK		Alleta Sekgololo - 417407	TC1
10022	R	Horn sound stops		OK		Alleta Sekgololo - 417407	TC1
10023	I	Electric Horn Test		OK		Mphato Mphahlele - 480716	TC1
10024	A	Press the button 71S1 and maintain it		OK		Mphato Mphahlele - 480716	TC1
10025	R	The sound of the whistle can be heard at least 20m from the cab		OK		Mphato Mphahlele - 480716	TC1
10026	R	Read Defined Variable [TT] (MPU1)Li_SGL_Tc1WarningWhistleR1 = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10027	R	Read Defined Variable [TT] (MPU1)Li_SGL_Tc1WarningWhistleR2 = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10028	A	Release the button 71S1		OK		Mphato Mphahlele - 480716	TC1
10029	R	Whistle sound stops		OK		Mphato Mphahlele - 480716	TC1
10030	R	Read Defined Variable [TT] (MPU1)Li_SGL_Tc1WarningWhistleR1 = 0.0		OK	0	Mphato Mphahlele - 480716	TC1
10031	R	Read Defined Variable [TT] (MPU1)Li_SGL_Tc1WarningWhistleR2 = 0.0		OK	0	Mphato Mphahlele - 480716	TC1
10032	I	END OF TEST		OK		Mphato Mphahlele - 480716	TC1

8.1.1 070_SIG-External Signalling

I - Information A - Action R - Result NE - Not Executed

N°	Type	Instruction	File	Result status	Result value	Operator	Vehicle
10001	I	External Signalling (SPP=70)		OK		Tebogo Mtombeni - 529938	TC1
10002	I	Use the image below for reference throughout the procedure		OK		Tebogo Mtombeni - 529938	TC1
10003	I	Initial Conditions		OK		Tebogo Mtombeni - 529938	TC1
10004	A	Turn IES switch on Test bench to ON position		OK		Tebogo Mtombeni - 529938	TC1
10005	I	Shore Supply is connected to the car		OK		Tebogo Mtombeni - 529938	TC1
10006	I	TC1 car prepared and cab active		OK		Tebogo Mtombeni - 529938	TC1
10007	A	Check if the mirrors do not have cracks or is not chipped.		OK		Tebogo Mtombeni - 529938	TC1
10008	I	Circuit Breakers		OK		Tebogo Mtombeni - 529938	TC1
10009	A	Close Circuit Breaker 70Q1		OK		Tebogo Mtombeni - 529938	TC1
10010	A	Close Circuit Breaker 70Q2		OK		Tebogo Mtombeni - 529938	TC1
10011	A	Close Circuit Breaker 70Q3		OK		Tebogo Mtombeni - 529938	TC1
10012	A	Close Circuit Breaker 72Q4		OK		Tebogo Mtombeni - 529938	TC1
10013	A	Close Circuit Breaker 75Q1		OK		Tebogo Mtombeni - 529938	TC1
10014	A	Close Circuit Breaker 72Q2		OK		Tebogo Mtombeni - 529938	TC1
10015	I	Left Platform and Head Lights		OK		Tebogo Mtombeni - 529938	TC1
10016	A	Check that the following external lights on the LEFT are ON:		OK		Tebogo Mtombeni - 529938	TC1
10017	R	Platform lights 70H12 white LEDs		OK		Tebogo Mtombeni - 529938	TC1
10018	R	Platform lights 70H5 while light		OK		Tebogo Mtombeni - 529938	TC1
10019	R	Head lights 70H3 white light		OK		Tebogo Mtombeni - 529938	TC1
10020	I	Right Platform and Head Lights		OK		Tebogo Mtombeni - 529938	TC1

10021	A	Check that the following external lights on the RIGHT are on:		OK		Tebogo Mtombeni - 529938	TC1
10022	R	Platform lights 70H11 white LEDs		OK		Tebogo Mtombeni - 529938	TC1
10023	R	Platform lights 70H6 while light		OK		Tebogo Mtombeni - 529938	TC1
10024	R	Head lights 70H4 white light		OK		Tebogo Mtombeni - 529938	TC1
10025	I	Back Lights		OK		Tebogo Mtombeni - 529938	TC1
10026	A	Turn key 30A1.S1 to Non-Active Cabin Position		OK		Tebogo Mtombeni - 529938	TC1
10027	A	Reset Circuit Breaker 20Q2 (On and Off)		OK		Tebogo Mtombeni - 529938	TC1
10028	R	All white lights, on the LEFT and Right side are OFF		OK		Tebogo Mtombeni - 529938	TC1
10029	R	Left red light 70H7 is ON		OK		Tebogo Mtombeni - 529938	TC1
10030	R	Right red light 70H9 is ON		OK		Tebogo Mtombeni - 529938	TC1
10031	R	Red LEDs on Platform light 70H11 are ON		OK		Tebogo Mtombeni - 529938	TC1
10032	I	Main lights and dimming		OK		Tebogo Mtombeni - 529938	TC1
10033	A	Switch the External lights switch 70S2 to "Bright Light" position		OK		Tebogo Mtombeni - 529938	TC1
10034	R	The External lights switch 70S2 lamp is ON		OK		Tebogo Mtombeni - 529938	TC1
10035	R	Read Defined Variable [TT] (MPU1)li_sgl_tc1headlight1 = 0.0		OK	0	Tebogo Mtombeni - 529938	TC1
10036	R	Read Defined Variable [TT] (MPU1)li_sgl_tc1headlight2 = 0.0		OK	0	Tebogo Mtombeni - 529938	TC1
10037	R	The headlights 70H3 and 70H4 are in bright light configuration		OK		Tebogo Mtombeni - 529938	TC1
10038	A	Switch the External lights switch 70S2 to "Normal" or "Dimmed" position		OK		Tebogo Mtombeni - 529938	TC1
10039	R	Read Defined Variable [TT] (MPU1)li_sgl_tc1headlight1 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10040	R	Read Defined Variable [TT] (MPU1)li_sgl_tc1headlight2 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1

10041	R	The External lights switch lamp 70S2 is OFF		OK		Tebogo Mtombeni - 529938	TC1
10042	R	The headlights 70H3 and 70H4 are in normal/dimmed configuration		OK		Tebogo Mtombeni - 529938	TC1
10043	I	Sunshade adjustment settings		OK		Tebogo Mtombeni - 529938	TC1
10044	I	To set the limits, it must be done using the appropriate tool (square torx/ screwdriver). The white nut moves the limit down and the red one moves up.		OK		Tebogo Mtombeni - 529938	TC1
10045	A	Look at the picture below for upper limit and the lower limit. The yellow line represents the upper limit, and the green one represents the lower limit.		OK		Tebogo Mtombeni - 529938	TC1
10046	A	Rotate the red nut with a square torx either clockwise or ant-clockwise until the upper limit is set to the desired position as shown on the picture above.		OK		Tebogo Mtombeni - 529938	TC1
10047	A	Turn the Sunshade Control Switch 72S3 to position 1 (Up) and maintain it		OK		Tebogo Mtombeni - 529938	TC1
10048	R	The sunshade stops at the upper position that was set above.		OK		Tebogo Mtombeni - 529938	TC1
10049	A	Rotate the white nut with a square torx either clockwise or anti-clockwise until the lower limit is set to the desired position as shown on the picture above.		OK		Tebogo Mtombeni - 529938	TC1
10050	A	Turn the Sunshade Control Switch 72S3 to position 2 (down) and maintain it		OK		Tebogo Mtombeni - 529938	TC1
10051	R	The sunshade stops at the lower position that was set above.		OK		Tebogo Mtombeni - 529938	TC1
10052	I	Coupled train		OK		Tebogo Mtombeni - 529938	TC1
10053	A	Turn key 30A1.S1 to Active cabin Position		OK		Tebogo Mtombeni - 529938	TC1
10054	R	All white lights are "ON", and red lights are OFF.		OK		Tebogo Mtombeni - 529938	TC1
10055	I	Coupling Relay Train Line Dev1/62 = Coupler Pin 103		OK		Tebogo Mtombeni - 529938	TC1
10056	A	Force [NI] Dev1/62 = 1		OK		Tebogo Mtombeni - 529938	TC1
10057	R	All External lights are "OFF".		OK		Tebogo Mtombeni - 529938	TC1

10058	I	Coupling Relay Train Line Dev1/62 = Coupler Pin 103		OK		Tebogo Mtombeni - 529938	TC1
10059	R	All White lights are "NO", and red Lights are OFF.		OK		Tebogo Mtombeni - 529938	TC1
10060	A	Force [NI] Dev1/62 = 0		OK		Tebogo Mtombeni - 529938	TC1
10061	I	END OF TEST		OK		Tebogo Mtombeni - 529938	TC1

Section 9 – Rescue Mode and Emergency Disconnection

9.1 Instructions list

9.1.1 027_ERM-Rescue Mode and Emergency Disconnection

I - Information A - Action R - Result NE - Not Executed

N°	Type	Instruction	File	Result status	Result value	Operator	Vehicle
10001	I	Rescue Mode and Emergency Disconnection (SPP=27)		OK		Mphato Mphahlele - 480716	TC1
10002	I	Initial Conditions		OK		Mphato Mphahlele - 480716	TC1
10003	I	Car is powered OFF		OK		Mphato Mphahlele - 480716	TC1
10004	I	Backup Mode		OK		Mphato Mphahlele - 480716	TC1
10005	A	Turn Switch '27S1' (Backup Mode Position) to 'BACKUP Position		OK		Mphato Mphahlele - 480716	TC1
10006	A	Turn Driver's Master Key 30A1.S1 to Active Cabin Position		OK		Mphato Mphahlele - 480716	TC1
10007	A	Turn Battery contactor Switch 18S1 to ON position		OK		Mphato Mphahlele - 480716	TC1
10008	I	Backup Mode Train Lines Dev5/33 = END2 90XP15 pin 23 Dev2/67 = Coupler pin 007 Dev2/25 = Coupler pin 107		OK		Mphato Mphahlele - 480716	TC1
10009	R	Read Defined Variable [NI] Dev5/33 = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10010	R	Read Defined Variable [NI] Dev2/25 = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10011	R	Read Defined Variable [NI] Dev2/67 = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10012	R	Relay 27K1 is energised		OK		Mphato Mphahlele - 480716	TC1
10013	R	Relay 27K2 is De-energised		OK		Mphato Mphahlele - 480716	TC1
10014	A	Timer 30.0 S		OK		Mphato Mphahlele - 480716	TC1
10015	R	Relay 27K2 is De-energised		OK		Mphato Mphahlele - 480716	TC1
10016	A	Timer 30.0 S		OK		Mphato Mphahlele - 480716	TC1
10017	R	Relay 27K2 is energised		OK		Mphato Mphahlele - 480716	TC1
10018	I	Check that the Backup mode LED 27H2 is ON		OK		Mphato Mphahlele - 480716	TC1

10019	A	Turn Driver's Master Key 30A1.S1 to Non-Active Cabin Position		OK		Mphato Mphahlele - 480716	TC1
10020	I	Backup Mode Train Lines Dev5/33 = END2 90XP15 pin 23 Dev2/67 = Coupler pin 007 Dev2/25 = Coupler pin 107		OK		Mphato Mphahlele - 480716	TC1
10021	R	Read Defined Variable [NI] Dev5/33 = 0.0		OK	0	Mphato Mphahlele - 480716	TC1
10022	R	Read Defined Variable [NI] Dev2/25 = 0.0		OK	0	Mphato Mphahlele - 480716	TC1
10023	R	Read Defined Variable [NI] Dev2/67 = 0.0		OK	0	Mphato Mphahlele - 480716	TC1
10024	R	Relay 27K1 is De-energised		OK		Mphato Mphahlele - 480716	TC1
10025	R	Relay 27K2 is De-energised		OK		Mphato Mphahlele - 480716	TC1
10026	A	Turn Driver's Master Key 30A1.S1 to Active Cabin Position		OK		Mphato Mphahlele - 480716	TC1
10027	A	Turn Battery contactor Switch 18S1 to OFF position		OK		Mphato Mphahlele - 480716	TC1
10028	I	Turn ERTMS Isolation Switch 62S1 to Normal position		OK		Mphato Mphahlele - 480716	TC1
10029	A	Turn Switch '27S1' (Backup Mode Position) to Normal Position		OK		Mphato Mphahlele - 480716	TC1
10030	A	Turn Battery contactor Switch 18S1 to ON position		OK		Mphato Mphahlele - 480716	TC1
10031	A	Check continuity between point 20 on Backup State Switch 27S1 and ground		OK		Mphato Mphahlele - 480716	TC1
10032	R	The points are continuous		OK		Mphato Mphahlele - 480716	TC1
10033	I	Backup Mode Train Line Dev5/33 = END2 90XP15 pin 23		OK		Mphato Mphahlele - 480716	TC1
10034	R	Read Defined Variable [NI] Dev5/33 = 0.0		OK	0	Mphato Mphahlele - 480716	TC1
10035	I	Emergency Disconnection		OK		Mphato Mphahlele - 480716	TC1
10036	I	Emergency Disconnection Train Lines Dev5/34 = END2 90XP15 pin 24 Dev2/79 = Coupler pin 019 Dev2/75 = Coupler pin 119		OK		Mphato Mphahlele - 480716	TC1
10037	R	Read Defined Variable [NI] Dev5/34 = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10038	R	Read Defined Variable [NI] Dev2/79 = 1.0		OK	1	Mphato Mphahlele - 480716	TC1

10039	R	Read Defined Variable [NI] Dev2/75 = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10040	I	Emergency Brake ERTMS 1 Train Line Dev4/88 = END2 90XP14 pin 18		OK		Mphato Mphahlele - 480716	TC1
10041	A	Force [NI] Dev4/88 = 1.0		OK		Mphato Mphahlele - 480716	TC1
10042	I	Emergency Disconnection Train Lines Dev5/34 = END2 90XP15 pin 24 Dev2/79 = Coupler pin 019 Dev2/75 = Coupler pin 119		OK		Mphato Mphahlele - 480716	TC1
10043	R	Read Defined Variable [NI] Dev5/34 = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10044	R	Read Defined Variable [NI] Dev2/79 = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10045	R	Read Defined Variable [NI] Dev2/75 = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10046	I	Emergency Brake ERTMS 2 Train Line Dev4/80 = END2 90XP14 pin 20		OK		Mphato Mphahlele - 480716	TC1
10047	A	Force [NI] Dev4/80 = 1.0		OK		Mphato Mphahlele - 480716	TC1
10048	I	Emergency Disconnection Train Lines Dev5/34 = END2 90XP15 pin 24 Dev2/79 = Coupler pin 019 Dev2/75 = Coupler pin 119		OK		Mphato Mphahlele - 480716	TC1
10049	R	Read Defined Variable [NI] Dev5/34 = 0.0		OK	0	Mphato Mphahlele - 480716	TC1
10050	R	Read Defined Variable [NI] Dev2/79 = 0.0		OK	0	Mphato Mphahlele - 480716	TC1
10051	R	Read Defined Variable [NI] Dev2/75 = 0.0		OK	0	Mphato Mphahlele - 480716	TC1
10052	I	Emergency Brake ERTMS 1 Train Line Dev4/88 = END2 90XP14 pin 18		OK		Mphato Mphahlele - 480716	TC1
10053	A	Force [NI] Dev4/88 = 0.0		OK		Mphato Mphahlele - 480716	TC1
10054	I	Emergency Brake ERTMS 2 Train Line Dev4/80 = END2 90XP14 pin 20		OK		Mphato Mphahlele - 480716	TC1
10055	A	Force [NI] Dev4/80 = 0.0		OK		Mphato Mphahlele - 480716	TC1
10056	I	Emergency Disconnection Train Lines Dev5/34 = END2 90XP15 pin 24		OK		Mphato Mphahlele - 480716	TC1
10057	R	Read Defined Variable [NI] Dev5/34 = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10058	I	V<3km/h Train Line Dev4/39 = END2 90XP15 pin 29		OK		Mphato Mphahlele - 480716	TC1
10059	A	Force [NI] Dev4/39 = 1.0		OK		Mphato Mphahlele - 480716	TC1

10060	I	Emergency Disconnection Train Lines Dev5/34 = END2 90XP15 pin 24		OK		Mphato Mphahlele - 480716	TC1
10061	R	Read Defined Variable [NI] Dev5/34 = 0.0		OK	0	Mphato Mphahlele - 480716	TC1
10062	I	V<3km/h Train Line Dev4/39 = END2 90XP15 pin 29		OK		Mphato Mphahlele - 480716	TC1
10063	A	Force [NI] Dev4/39 = 0.0		OK		Mphato Mphahlele - 480716	TC1
10064	I	Emergency Disconnection Train Lines Dev5/34 = END2 90XP15 pin 24		OK		Mphato Mphahlele - 480716	TC1
10065	R	Read Defined Variable [NI] Dev5/34 = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10066	A	Place ERTMS Isolation Switch in "Isolation" position		OK		Mphato Mphahlele - 480716	TC1
10067	R	Read Defined Variable [TT] (MPU1)li_erm_tc1noemerdiscr1 = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10068	R	Read Defined Variable [TT] (MPU1)li_erm_tc1noemerdiscr2 = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10069	I	Emergency Disconnection Train Lines Dev5/34 = END2 90XP15 pin 24		OK		Mphato Mphahlele - 480716	TC1
10070	R	Read Defined Variable [NI] Dev5/34 = 0.0		OK	0	Mphato Mphahlele - 480716	TC1
10071	A	Push the blue "Emergency Pantograph Down" pushbutton		OK		Mphato Mphahlele - 480716	TC1
10072	R	Read Defined Variable [TT] (MPU1)li_erm_tc1noemerdiscr1 = 0.0		OK	0	Mphato Mphahlele - 480716	TC1
10073	R	Read Defined Variable [TT] (MPU1)li_erm_tc1noemerdiscr2 = 0.0		OK	0	Mphato Mphahlele - 480716	TC1
10074	I	Emergency Disconnection Train Lines Dev5/34 = END2 90XP15 pin 24		OK		Mphato Mphahlele - 480716	TC1
10075	R	Read Defined Variable [NI] Dev5/34 = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10076	A	Release the "Emergency Pantograph Down" pushbutton		OK		Mphato Mphahlele - 480716	TC1
10077	R	Read Defined Variable [TT] (MPU1)li_erm_tc1noemerdiscr1 = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10078	R	Read Defined Variable [TT] (MPU1)li_erm_tc1noemerdiscr2 = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10079	I	Emergency Disconnection Train Lines Dev5/34 = END2 90XP15 pin 24		OK		Mphato Mphahlele - 480716	TC1

10080	R	Read Defined Variable [NI] Dev5/34 = 0.0		OK	0	Mphato Mphahlele - 480716	TC1
10081	I	END OF TEST		OK		Mphato Mphahlele - 480716	TC1

Section 10 – Driver Desk Illumination

10.1 Instructions list

10.1.1 084_DDK-Driver Desk Illumination

I - Information A - Action R - Result NE - Not Executed

N°	Type	Instruction	File	Result status	Result value	Operator	Vehicle
10001	I	Driver Desk Illumination (SPP=084)		OK		Dilikani Ngubane - 526515	TC1
10002	I	Initial Conditions:		OK		Dilikani Ngubane - 526515	TC1
10003	I	Car is prepared and cab is active		OK		Dilikani Ngubane - 526515	TC1
10004	A	Close Circuit Breaker 81Q1		OK		Dilikani Ngubane - 526515	TC1
10005	I	Indicator Modules		OK		Dilikani Ngubane - 526515	TC1
10006	R	Check that the Line Indicator Module 81A1 is ON		OK		Dilikani Ngubane - 526515	TC1
10007	R	Check that the Pressure gauge 84P1 is ON		OK		Dilikani Ngubane - 526515	TC1
10008	R	Check that the light of the Speed Indicator 61A2 is ON		OK		Dilikani Ngubane - 526515	TC1
10009	I	Lamp Test		OK		Dilikani Ngubane - 526515	TC1
10010	A	Press and hold the Lamp Test pushbutton 84S1		OK		Dilikani Ngubane - 526515	TC1
10011	R	Check that the White Lamp Test pushbutton Lamp 84S1 is ON		OK		Dilikani Ngubane - 526515	TC1
10012	R	Check that the White Automatic Start pushbutton lamp 20S1 is ON		OK		Dilikani Ngubane - 526515	TC1
10013	R	Check that the orange Standby State pushbutton lamp 20S2 is ON		OK		Dilikani Ngubane - 526515	TC1
10014	R	Check that the White Pantograph Up/Down pushbutton lamp 21S1 is ON		OK		Dilikani Ngubane - 526515	TC1
10015	R	Check that the White Close Main Circuit Breaker pushbutton lamp 22S11 is ON		OK		Dilikani Ngubane - 526515	TC1
10016	R	Check that the Red Open Main Circuit Breaker pushbutton lamp 22S12 is ON		OK		Dilikani Ngubane - 526515	TC1
10017	R	Check that the White Reduced Power lamp 30S2 is ON		OK		Dilikani Ngubane - 526515	TC1

10018	R	Check that the Red Override Passenger Emergency Alarm pushbutton lamp 44S5 is ON		OK		Dilikani Ngubane - 526515	TC1
10019	R	Check that the Yellow Door Auth Left pushbutton lamp 50S5 is ON		OK		Dilikani Ngubane - 526515	TC1
10020	R	Check that the Yellow Door Auth Right pushbutton lamp 50S6 is ON		OK		Dilikani Ngubane - 526515	TC1
10021	R	Check that the White Door Open Left pushbutton lamp 50S1 is ON		OK		Dilikani Ngubane - 526515	TC1
10022	R	Check that the White Door Open Right pushbutton lamp 50S2 is ON		OK		Dilikani Ngubane - 526515	TC1
10023	R	Check that the Blue Door Close Left pushbutton lamp 50S3 is ON		OK		Dilikani Ngubane - 526515	TC1
10024	R	Check that the Blue Door Close Right pushbutton lamp 50S4 is ON		OK		Dilikani Ngubane - 526515	TC1
10025	R	Check that the White Cab Lighting Left Side pushbutton lamp 52S3 is ON		OK		Dilikani Ngubane - 526515	TC1
10026	R	Check that the White Cab Lighting Right Side pushbutton lamp 52S4 is ON		OK		Dilikani Ngubane - 526515	TC1
10027	R	Check that the White Foot Heater pushbutton lamp 57S3 is ON		OK		Dilikani Ngubane - 526515	TC1
10028	R	Check that the Red Front CCTV Event pushbutton lamp 66S1 is ON		OK		Dilikani Ngubane - 526515	TC1
10029	R	Check that the White Windscreen Demister pushbutton lamp 72S2 is ON		OK		Dilikani Ngubane - 526515	TC1
10030	I	Use the following image to verify the train status LEDs 84A1		OK		Dilikani Ngubane - 526515	TC1
10031	R	Check that 31H1 is ON		OK		Dilikani Ngubane - 526515	TC1
10032	R	Check that 60H1 is ON		OK		Dilikani Ngubane - 526515	TC1
10033	R	Check that 18H1 is ON		OK		Dilikani Ngubane - 526515	TC1
10034	R	Check that 44H4 is ON		OK		Dilikani Ngubane - 526515	TC1
10035	R	Check that 44H1 is ON		OK		Dilikani Ngubane - 526515	TC1
10036	R	Check that 51H1 is ON		OK		Dilikani Ngubane - 526515	TC1
10037	R	Check that 45H2 is ON		OK		Dilikani Ngubane - 526515	TC1

10038	R	Check that 40H2 is ON		OK		Dilikani Ngubane - 526515	TC1
10039	R	Check that 40H1 is ON		OK		Dilikani Ngubane - 526515	TC1
10040	R	Check that 41H1 is ON		OK		Dilikani Ngubane - 526515	TC1
10041	R	Check that 60H2 is ON		OK		Dilikani Ngubane - 526515	TC1
10042	R	Check that 27H2 is ON		OK		Dilikani Ngubane - 526515	TC1
10043	R	Check that 62H1 is ON		OK		Dilikani Ngubane - 526515	TC1
10044	R	Check that 44H5 is ON		OK		Dilikani Ngubane - 526515	TC1
10045	R	Check that 31H2 is ON		OK		Dilikani Ngubane - 526515	TC1
10046	R	Check that 67H1 is ON		OK		Dilikani Ngubane - 526515	TC1
10047	A	Release the Lamp Test pushbutton 84S1		OK		Dilikani Ngubane - 526515	TC1
10048	I	Dimmer Switch Adjustment		OK		Dilikani Ngubane - 526515	TC1
10049	I	Open the driver desk plate on which the dimmer switch 84S2 is located to access the bottom of the dimmer switch. Use the image below to identify the trimmer screw which is used to adjust the limits of the dimmer		OK		Dilikani Ngubane - 526515	TC1
10050	A	Adjust the trimmer (potentiometer) to increase the lower limit of the dimmer- allowing the cab lights to dim to a minimum lighting that is still visible and not zero. Then, reassemble the driver desk plate in location		OK		Dilikani Ngubane - 526515	TC1
10051	A	Press the Lamp Test pushbutton 84S1 and maintain it		OK		Dilikani Ngubane - 526515	TC1
10052	A	While pressing 84S1, turn the dimmer switch and observe that the brightness of all the following lamps increases and decreases accordingly		OK		Dilikani Ngubane - 526515	TC1
10053	R	Check that 61A2 (Speed Indicator) can be dimmed		OK		Dilikani Ngubane - 526515	TC1
10054	R	Check that the Line Indicator Module 81A1 can be dimmed		OK		Dilikani Ngubane - 526515	TC1
10055	R	Check that the Pressure gauge 84P1 can be dimmed		OK		Dilikani Ngubane - 526515	TC1

10056	R	Check that the Train Status LEDs 84A1 can be dimmed		OK		Dilikani Ngubane - 526515	TC1
10057	R	Check that 84S1 can be dimmed		OK		Dilikani Ngubane - 526515	TC1
10058	R	Check that 20S1 can be dimmed		OK		Dilikani Ngubane - 526515	TC1
10059	R	Check that 20S2 can be dimmed		OK		Dilikani Ngubane - 526515	TC1
10060	R	Check that 21S1 can be dimmed		OK		Dilikani Ngubane - 526515	TC1
10061	R	Check that 22S11 can be dimmed		OK		Dilikani Ngubane - 526515	TC1
10062	R	Check that 22S12 can be dimmed		OK		Dilikani Ngubane - 526515	TC1
10063	R	Check that 30S2 can be dimmed		OK		Dilikani Ngubane - 526515	TC1
10064	R	Check that 44S5 can be dimmed		OK		Dilikani Ngubane - 526515	TC1
10065	R	Check that 50S5 can be dimmed		OK		Dilikani Ngubane - 526515	TC1
10066	R	Check that 50S6 can be dimmed		OK		Dilikani Ngubane - 526515	TC1
10067	R	Check that 50S1 can be dimmed		OK		Dilikani Ngubane - 526515	TC1
10068	R	Check that 50S2 can be dimmed		OK		Dilikani Ngubane - 526515	TC1
10069	R	Check that 50S3 can be dimmed		OK		Dilikani Ngubane - 526515	TC1
10070	R	Check that 50S4 can be dimmed		OK		Dilikani Ngubane - 526515	TC1
10071	R	Check that 52S3 can be dimmed		OK		Dilikani Ngubane - 526515	TC1
10072	R	Check that 52S4 can be dimmed		OK		Dilikani Ngubane - 526515	TC1
10073	R	Check that 57S3 can be dimmed		OK		Dilikani Ngubane - 526515	TC1
10074	R	Check that 66S1 can be dimmed		OK		Dilikani Ngubane - 526515	TC1
10075	R	Check that 67S1 can be dimmed		OK		Dilikani Ngubane - 526515	TC1
10076	R	Check that 72S2 can be dimmed		OK		Dilikani Ngubane - 526515	TC1
10077	I	END OF TEST		OK		Dilikani Ngubane - 526515	TC1

Section 11 – Emergency Brake

11.1 Instructions list

11.1.1 044_UBK-Emergency Brake

I - Information A - Action R - Result NE - Not Executed

N°	Type	Instruction	File	Result status	Result value	Operator	Vehicle
10001	I	Emergency Brake (SPP=044)		OK		Mphato Mphahlele - 480716	TC1
10002	I	Initial Conditions		OK		Mphato Mphahlele - 480716	TC1
10003	I	No air connected to the vehicle OR main pipe pressure below 6Bar		OK		Mphato Mphahlele - 480716	TC1
10004	I	No PEAs are activated		OK		Mphato Mphahlele - 480716	TC1
10005	I	Battery Contactor Switch 18S1 in ON position		OK		Mphato Mphahlele - 480716	TC1
10006	A	Turn Driver's Master Key 30A1.S1 to Non-Active Cabin Position		OK		Mphato Mphahlele - 480716	TC1
10007	I	Direction Switch 30A1.S2 in "Neutral" position		OK		Mphato Mphahlele - 480716	TC1
10008	A	Open and Close (Reset) Circuit breaker 20Q2		OK		Mphato Mphahlele - 480716	TC1
10009	I	Back Up mode switch 27S1 in Normal position		OK		Mphato Mphahlele - 480716	TC1
10010	I	Visual Inspection		OK		Mphato Mphahlele - 480716	TC1
10011	A	Physically and visually inspect all the Disk Break Units (DBU) and brake pads, to ensure they are securely fitted		OK		Mphato Mphahlele - 480716	TC1
10012	R	All the brake DBUs are correctly installed, and all the brake pads are correctly installed and locked		OK		Mphato Mphahlele - 480716	TC1
10013	A	Check the piping installation		OK		Mphato Mphahlele - 480716	TC1
10014	R	All the pipes are installed on the vehicle		OK		Mphato Mphahlele - 480716	TC1
10015	A	Check all the Passenger Emergency Alarm handles, and ensure they are connected to their respective connectors		OK		Mphato Mphahlele - 480716	TC1
10016	R	All the PEAs are installed and connected		OK		Mphato Mphahlele - 480716	TC1
10017	I	Circuit Breakers		OK		Mphato Mphahlele - 480716	TC1

10018	A	Close Circuit Breaker 44Q1		OK		Mphato Mphahlele - 480716	TC1
10019	A	Close Circuit Breaker 44Q2		OK		Mphato Mphahlele - 480716	TC1
10020	A	Close Circuit Breaker 44Q3		OK		Mphato Mphahlele - 480716	TC1
10021	A	Close Circuit Breaker 44Q4		OK		Mphato Mphahlele - 480716	TC1
10022	I	Emergency Brake Loop		OK		Mphato Mphahlele - 480716	TC1
10023	I	Emergency Brake Loop Train Line Dev2/3 = coupler pin 005 Dev2/4 = coupler pin 105 Dev5/5 = END2 90XP14 pin 8		OK		Mphato Mphahlele - 480716	TC1
10024	R	Read Defined Variable [NI] Dev2/3 = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10025	R	Read Defined Variable [NI] Dev2/4 = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10026	R	Read Defined Variable [NI] Dev5/5 = 0.0		OK	0	Mphato Mphahlele - 480716	TC1
10027	A	Close the Isolation cock to the coupler F2.1/1; and connect the air supply to the vehicle coupling flexible hose F3/1.Turn on the air supply and allow the pressure to reach 7Bar. Check the pressure on test point C 1.1 test point: BRTP		OK		Mphato Mphahlele - 480716	TC1
10028	R	The pressure on test point C 1.1 >=7 Bar		OK		Mphato Mphahlele - 480716	TC1
10029	I	Emergency Brake Loop Train Line Dev5/5 = END2 90XP14 pin 8		OK		Mphato Mphahlele - 480716	TC1
10030	R	Read Defined Variable [NI] Dev5/5 = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10031	A	Push the Emergency Brake Mushroom 44S1		OK		Mphato Mphahlele - 480716	TC1
10032	I	Emergency Brake Loop Train Line Dev2/4 = coupler pin 105 Dev5/5 = END2 90XP14 pin 8		OK		Mphato Mphahlele - 480716	TC1
10033	R	Read Defined Variable [NI] Dev2/4 = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10034	R	Read Defined Variable [NI] Dev5/5 = 0.0		OK	0	Mphato Mphahlele - 480716	TC1
10035	A	Release the Emergency Brake Mushroom 44S1		OK		Mphato Mphahlele - 480716	TC1
10036	I	Emergency Brake Loop Train Line Dev5/5 = END2 90XP14 pin 8		OK		Mphato Mphahlele - 480716	TC1
10037	R	Read Defined Variable [NI] Dev5/5 = 1.0		OK	1	Mphato Mphahlele - 480716	TC1

10038	I	Coupling		OK		Mphato Mphahlele - 480716	TC1
10039	I	Coupling Relay Train Line Dev1/62 = coupler pin 103		OK		Mphato Mphahlele - 480716	TC1
10040	A	Force [NI] Dev1/62 = 1.0		OK		Mphato Mphahlele - 480716	TC1
10041	R	Read Defined Variable [TT] (MPU1)Li_CPM_Tc1CoupDetec1 = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10042	I	Emergency Brake Loop Train Line Dev2/3 = coupler pin 005 Dev2/4 = coupler pin 105 Dev5/5 = END2 90XP14 pin 8		OK		Mphato Mphahlele - 480716	TC1
10043	R	Read Defined Variable [NI] Dev2/3 = 0.0		OK	0	Mphato Mphahlele - 480716	TC1
10044	R	Read Defined Variable [NI] Dev2/4 = 0.0		OK	0	Mphato Mphahlele - 480716	TC1
10045	R	Read Defined Variable [NI] Dev5/5 = 0.0		OK	0	Mphato Mphahlele - 480716	TC1
10046	I	Coupling Relay Train Line Dev1/62 = coupler pin 103		OK		Mphato Mphahlele - 480716	TC1
10047	A	Force [NI] Dev1/62 = 0.0		OK		Mphato Mphahlele - 480716	TC1
10048	R	Read Defined Variable [TT] (MPU1)Li_CPM_Tc1CoupDetec1 = 0.0		OK	0	Mphato Mphahlele - 480716	TC1
10049	I	Emergency Brake Loop Train Line Dev2/4 = coupler pin 105 Dev5/5 = END2 90XP14 pin 8		OK		Mphato Mphahlele - 480716	TC1
10050	R	Read Defined Variable [NI] Dev2/4 = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10051	R	Read Defined Variable [NI] Dev5/5 = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10052	I	Loop Override		OK		Mphato Mphahlele - 480716	TC1
10053	A	Turn Driver's Master Key 30A1.S1 to Active Cabin Position		OK		Mphato Mphahlele - 480716	TC1
10054	A	Force [TT] (BCU2)li_mp_ps_ok = 1.0		OK		Mphato Mphahlele - 480716	TC1
10055	R	Read Defined Variable [TT] (MPU1)li_ubk_tc1ebloopoverrider1 = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10056	R	Read Defined Variable [TT] (MPU1)li_ubk_tc1ebloopoverrider2 = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10057	A	Turn the Emergency Braking Loop Override Switch 44S2 to "Override/Bypass" position		OK		Mphato Mphahlele - 480716	TC1

10058	R	Check that the Emergency Braking Loop Override Lamp 44H5 is ON		OK		Mphato Mphahlele - 480716	TC1
10059	I	Emergency Brake Loop Override Train Line Dev5/6 = END2 90XP14 pin 9		OK		Mphato Mphahlele - 480716	TC1
10060	R	Read Defined Variable [NI] Dev5/6 = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10061	R	Read Defined Variable [TT] (MPU1)li_ubk_tc1ebloopoverrider1 = 0.0		OK	0	Mphato Mphahlele - 480716	TC1
10062	R	Read Defined Variable [TT] (MPU1)li_ubk_tc1ebloopoverrider2 = 0.0		OK	0	Mphato Mphahlele - 480716	TC1
10063	A	Return the Emergency Braking Loop Override Switch 44S2 to "Normal" position		OK		Mphato Mphahlele - 480716	TC1
10064	R	Check that the Emergency Braking Loop Override Lamp 44H5 is OFF		OK		Mphato Mphahlele - 480716	TC1
10065	I	Emergency Brake Loop Override Train Line Dev5/6 = END2 90XP14 pin 9		OK		Mphato Mphahlele - 480716	TC1
10066	R	Read Defined Variable [NI] Dev5/6 = 0.0		OK	0	Mphato Mphahlele - 480716	TC1
10067	R	Read Defined Variable [TT] (MPU1)li_ubk_tc1ebloopoverrider1 = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10068	I	Reset Emergency Brake		OK		Mphato Mphahlele - 480716	TC1
10069	R	Read Defined Variable [TT] (MPU1)li_ubk_tc1rearmebrelayr1 = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10070	R	Read Defined Variable [TT] (MPU1)li_ubk_tc1rearmebrelayr2 = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10071	I	Turn Direction Switch 30A1.S2 to "Forward" position		OK		Mphato Mphahlele - 480716	TC1
10072	R	Read Defined Variable [TT] (MPU1)li_ubk_tc1rearmebrelayr1 = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10073	I	Emergency Brake Train Line		OK		Mphato Mphahlele - 480716	TC1
10074	I	Emergency Brake Loop Train Line Dev4/5 = END2 90XP14 pin 8		OK		Mphato Mphahlele - 480716	TC1
10075	A	Force [NI] Dev4/5 = 1.0		OK		Mphato Mphahlele - 480716	TC1
10076	A	Force [TT] (MPU1)lo_ubk_tc1emergbraker1 = 1.0		OK		Mphato Mphahlele - 480716	TC1

10077	A	Press and hold the Dead Man pushbutton 60S3		OK		Mphato Mphahlele - 480716	TC1
10078	R	Read Defined Variable [TT] (MPU1)li_dsd_tc1ebdeadmanrelayr1 = 0.0		OK	0	Mphato Mphahlele - 480716	TC1
10079	A	Ensure the Master Controller S3.3 (3.4) is NOT in Emergency Brake position		OK		Mphato Mphahlele - 480716	TC1
10080	I	Emergency Brake ERTMS1 Train Line Dev4/88 = END2 90XP14 pin 18		OK		Mphato Mphahlele - 480716	TC1
10081	A	Force [NI] Dev4/88 = 1.0		OK		Mphato Mphahlele - 480716	TC1
10082	R	Read Defined Variable [TT] (MPU1)li_ubk_tc1emergrelay1 = 0.0		OK	0	Mphato Mphahlele - 480716	TC1
10083	R	Read Defined Variable [TT] (MPU1)li_ubk_tc1emergrelay2 = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10084	R	Read Defined Variable [TT] (MPU1)li_ubk_tc1rearmebrelayr1 = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10085	R	Read Defined Variable [TT] (MPU1)li_ubk_tc1rearmebrelayr2 = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10086	I	Emergency Brake ERTMS2 Train Line Dev4/80 = END2 90XP14 pin 20		OK		Mphato Mphahlele - 480716	TC1
10087	A	Force [NI] Dev4/80 = 1.0		OK		Mphato Mphahlele - 480716	TC1
10088	R	Read Defined Variable [TT] (MPU1)li_ubk_tc1emergrelay1 = 0.0		OK	0	Mphato Mphahlele - 480716	TC1
10089	R	Read Defined Variable [TT] (MPU1)li_ubk_tc1emergrelay2 = 0.0		OK	0	Mphato Mphahlele - 480716	TC1
10090	R	Read Defined Variable [TT] (MPU1)li_ubk_tc1rearmebrelayr1 = 0.0		OK	0	Mphato Mphahlele - 480716	TC1
10091	R	Read Defined Variable [TT] (MPU1)li_ubk_tc1rearmebrelayr2 = 0.0		OK	0	Mphato Mphahlele - 480716	TC1
10092	I	Emergency Brake Train Line Dev2/84 = coupler pin 038 Dev2/85 = coupler pin 138 Dev5/61 = END2 90XP15 pin 67		OK		Mphato Mphahlele - 480716	TC1
10093	R	Read Defined Variable [NI] Dev2/84 = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10094	R	Read Defined Variable [NI] Dev2/85 = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10095	R	Read Defined Variable [NI] Dev5/61 = 1.0		OK	1	Mphato Mphahlele - 480716	TC1

10096	R	Check that the Emergency Brake Loop Lamp 44H4 is OFF		OK		Mphato Mphahlele - 480716	TC1
10097	A	Measure the voltage across Resistor 44R1 between pins 8A and 8B of terminal block 93XT202		OK		Mphato Mphahlele - 480716	TC1
10098	R	Battery Voltage (above 80Vdc) is measured across Resistor 44R1 between pins 8A and 8B of terminal block 93XT202		OK		Mphato Mphahlele - 480716	TC1
10099	R	Read Defined Variable [TT] (BCU1)LI_NEB = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10100	A	Force [TT] (MPU1)lo_ubk_tc1emergbraker1 = 0.0		OK		Mphato Mphahlele - 480716	TC1
10101	I	Emergency Brake Train Line Dev2/84 = coupler pin 038 Dev2/85 = coupler pin 138 Dev5/61 = END2 90XP15 pin 67		OK		Mphato Mphahlele - 480716	TC1
10102	R	Read Defined Variable [NI] Dev2/84 = 0.0		OK	0	Mphato Mphahlele - 480716	TC1
10103	R	Read Defined Variable [NI] Dev2/85 = 0.0		OK	0	Mphato Mphahlele - 480716	TC1
10104	R	Read Defined Variable [NI] Dev5/61 = 0.0		OK	0	Mphato Mphahlele - 480716	TC1
10105	R	Check that the Emergency Brake Loop Lamp 44H4 is ON		OK		Mphato Mphahlele - 480716	TC1
10106	A	Force [TT] (MPU1)lo_ubk_tc1emergbraker2 = 1.0		OK		Mphato Mphahlele - 480716	TC1
10107	I	Emergency Brake Train Line Dev5/61 = END2 90XP15 pin 67		OK		Mphato Mphahlele - 480716	TC1
10108	R	Read Defined Variable [NI] Dev5/61 = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10109	A	Release the Dead Man pushbutton 60S3		OK		Mphato Mphahlele - 480716	TC1
10110	I	Emergency Brake ERTMS1 Train Line Dev4/88 = END2 90XP14 pin 18		OK		Mphato Mphahlele - 480716	TC1
10111	A	Force [NI] Dev4/88 = 0.0		OK		Mphato Mphahlele - 480716	TC1
10112	I	Emergency Brake ERTMS2 Train Line Dev4/80 = END2 90XP14 pin 20		OK		Mphato Mphahlele - 480716	TC1
10113	A	Force [NI] Dev4/80 = 0.0		OK		Mphato Mphahlele - 480716	TC1
10114	I	Emergency Brake Train Line Dev5/61 = END2 90XP15 pin 67		OK		Mphato Mphahlele - 480716	TC1

10115	R	Read Defined Variable [NI] Dev5/61 = 0.0		OK	0	Mphato Mphahlele - 480716	TC1
10116	A	Turn the ERTMS Isolation switch 62S1 to "Isolation" position		OK		Mphato Mphahlele - 480716	TC1
10117	A	Turn the Dead Man Override switch 60S1 to "Override" position		OK		Mphato Mphahlele - 480716	TC1
10118	I	Emergency Brake Train Line Dev5/61 = END2 90XP15 pin 67		OK		Mphato Mphahlele - 480716	TC1
10119	R	Read Defined Variable [NI] Dev5/61 = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10120	I	Emergency Brake Pushbutton		OK		Mphato Mphahlele - 480716	TC1
10121	A	Push the Emergency Brake Mushroom 44S1		OK		Mphato Mphahlele - 480716	TC1
10122	I	Emergency Brake Train Line Dev5/61 = END2 90XP15 pin 67		OK		Mphato Mphahlele - 480716	TC1
10123	R	Read Defined Variable [NI] Dev5/61 = 0.0		OK	0	Mphato Mphahlele - 480716	TC1
10124	R	Read Defined Variable [TT] (MPU1)li_ubk_tc1emgcybrkpbr1 = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10125	R	Read Defined Variable [TT] (MPU1)li_ubk_tc1emgcybrkpbr2 = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10126	A	Check continuity between 93XT104_5 pin 36 and 93XT103 pin 28		OK		Mphato Mphahlele - 480716	TC1
10127	A	The points are continuous		OK		Mphato Mphahlele - 480716	TC1
10128	A	Release the Emergency Brake Mushroom 44S1		OK		Mphato Mphahlele - 480716	TC1
10129	R	Read Defined Variable [TT] (MPU1)li_ubk_tc1emgcybrkpbr1 = 0.0		OK	0	Mphato Mphahlele - 480716	TC1
10130	R	Read Defined Variable [TT] (MPU1)li_ubk_tc1emgcybrkpbr2 = 0.0		OK	0	Mphato Mphahlele - 480716	TC1
10131	A	Force [TT] (MPU1)lo_ubk_tc1emergbraker2 = 0.0		OK		Mphato Mphahlele - 480716	TC1
10132	A	Return the Dead Man Override switch 60S1 to "Normal" position		OK		Mphato Mphahlele - 480716	TC1
10133	A	Return the ERTMS Isolation switch 62S1 to "Normal" position		OK		Mphato Mphahlele - 480716	TC1
10134	I	Emergency Brake Loop Train Line Dev4/5 = END2 90XP14 pin 8		OK		Mphato Mphahlele - 480716	TC1

10135	A	Force [NI] Dev4/5 = 0.0		OK		Mphato Mphahlele - 480716	TC1
10136	A	Turn the Emergency Braking Loop Override Switch 44S2 to "Override/Bypass" position		OK		Mphato Mphahlele - 480716	TC1
10137	A	Press and hold the Dead Man pushbutton 60S3		OK		Mphato Mphahlele - 480716	TC1
10138	I	Emergency Brake Train Line Dev5/61 = END2 90XP15 pin 67		OK		Mphato Mphahlele - 480716	TC1
10139	R	Read Defined Variable [NI] Dev5/61 = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10140	A	Release the Dead Man pushbutton 60S3		OK		Mphato Mphahlele - 480716	TC1
10141	A	Return the Emergency Braking Loop Override Switch 44S2 to "Normal" position		OK		Mphato Mphahlele - 480716	TC1
10142	A	Turn Driver's Master Key 30A1.S1 to Non-Active Cabin Position		OK		Mphato Mphahlele - 480716	TC1
10143	I	Emergency Brake Train Line Dev4/61 = END2 90XP15 pin 67		OK		Mphato Mphahlele - 480716	TC1
10144	A	Force [NI] Dev4/61 = 1.0		OK		Mphato Mphahlele - 480716	TC1
10145	A	Measure the voltage on terminal block 93XT104_2 at pin 34, and pin 35		OK		Mphato Mphahlele - 480716	TC1
10146	R	Battery voltage (above 80Vdc) measured on terminal block 93XT104_2 at pin 34, and pin 35		OK		Mphato Mphahlele - 480716	TC1
10147	I	Emergency Brake Train Line Dev4/61 = END2 90XP15 pin 67		OK		Mphato Mphahlele - 480716	TC1
10148	A	Force [NI] Dev4/61 = 0.0		OK		Mphato Mphahlele - 480716	TC1
10149	A	Turn Driver's Master Key 30A1.S1 to Active Cabin Position		OK		Mphato Mphahlele - 480716	TC1
10150	I	Return the Direction Switch 30A1.S2 to "Neutral" position		OK		Mphato Mphahlele - 480716	TC1
10151	I	PEA Loop		OK		Mphato Mphahlele - 480716	TC1
10152	A	Check all the Passenger Emergency Alarm handles, and ensure they are connected to their respective connectors		OK		Mphato Mphahlele - 480716	TC1
10153	R	All the PEAs are installed and connected		OK		Mphato Mphahlele - 480716	TC1

10154	A	Open and Close (Reset) Circuit breaker 20Q2		OK		Mphato Mphahlele - 480716	TC1
10155	I	PEA Loop Train Lines Dev2/58 = coupler pin 017 Dev2/59 = coupler pin 117 Dev5/62 = END2 90XP15 pin 95		OK		Mphato Mphahlele - 480716	TC1
10156	R	Read Defined Variable [NI] Dev2/58 = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10157	R	Read Defined Variable [NI] Dev2/59 = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10158	R	Read Defined Variable [NI] Dev5/62 = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10159	A	Turn Driver's Master Key 30A1.S1 to Active Cabin Position		OK		Mphato Mphahlele - 480716	TC1
10160	R	Check that the PEA Lamp 44H1 is ON		OK		Mphato Mphahlele - 480716	TC1
10161	I	PEA Loop Train Lines Dev5/62 = END2 90XP15 pin 95		OK		Mphato Mphahlele - 480716	TC1
10162	R	Read Defined Variable [NI] Dev5/62 = 0.0		OK	0	Mphato Mphahlele - 480716	TC1
10163	R	Read Defined Variable [TT] (MPU1)li_ubk_tc1pealoop = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10164	I	PEA Loop OTDR Train Line Dev5/7 = END2 90XP14 pin 10		OK		Mphato Mphahlele - 480716	TC1
10165	R	Read Defined Variable [NI] Dev5/7 = 0.0		OK	0	Mphato Mphahlele - 480716	TC1
10166	I	PEA Loop Train Lines Dev4/62 = END2 90XP15 pin 95		OK		Mphato Mphahlele - 480716	TC1
10167	A	Force [NI] Dev4/62 = 1.0		OK		Mphato Mphahlele - 480716	TC1
10168	I	PEA Loop Train Lines Dev2/58 = coupler pin 017		OK		Mphato Mphahlele - 480716	TC1
10169	R	Read Defined Variable [NI] Dev2/58 = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10170	R	Read Defined Variable [TT] (MPU1)li_ubk_tc1pealoop = 0.0		OK	0	Mphato Mphahlele - 480716	TC1
10171	I	PEA Loop OTDR Train Line Dev5/7 = END2 90XP14 pin 10		OK		Mphato Mphahlele - 480716	TC1
10172	R	Read Defined Variable [NI] Dev5/7 = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10173	R	Check that the PEA Lamp 44H1 is OFF		OK		Mphato Mphahlele - 480716	TC1
10174	I	PEA Reset		OK		Mphato Mphahlele - 480716	TC1

10175	A	Activate the PEA on door 1 (44S11)		OK		Mphato Mphahlele - 480716	TC1
10176	I	PEA Loop Train Lines Dev2/58 = coupler pin 017		OK		Mphato Mphahlele - 480716	TC1
10177	R	Read Defined Variable [NI] Dev2/58 = 0.0		OK	0	Mphato Mphahlele - 480716	TC1
10178	R	Read Defined Variable [TT] (MPU1)Li_UBK_Tc1StateResetPea = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10179	A	Turn and hold the PEA Reset Switch 44S6 in Reset position		OK		Mphato Mphahlele - 480716	TC1
10180	R	Read Defined Variable [TT] (MPU1)li_ubk_tc1restpeaswitch = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10181	R	Read Defined Variable [TT] (MPU1)lo_ubk_tc1resetpea = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10182	R	Read Defined Variable [TT] (MPU1)Li_UBK_Tc1StateResetPea = 0.0		OK	0	Mphato Mphahlele - 480716	TC1
10183	A	Release the PEA Reset Switch 44S6		OK		Mphato Mphahlele - 480716	TC1
10184	R	Read Defined Variable [TT] (MPU1)li_ubk_tc1restpeaswitch = 0.0		OK	0	Mphato Mphahlele - 480716	TC1
10185	A	Timer 5.0 S		OK		Mphato Mphahlele - 480716	TC1
10186	R	Read Defined Variable [TT] (MPU1)Li_UBK_Tc1StateResetPea = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10187	R	Read Defined Variable [TT] (MPU1)lo_ubk_tc1resetpea = 0.0		OK	0	Mphato Mphahlele - 480716	TC1
10188	I	PEA Loop Train Lines Dev2/58 = coupler pin 017		OK		Mphato Mphahlele - 480716	TC1
10189	R	Read Defined Variable [NI] Dev2/58 = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10190	A	Activate the PEA on door 2 (44S12)		OK		Mphato Mphahlele - 480716	TC1
10191	I	PEA Loop Train Lines Dev2/58 = coupler pin 017		OK		Mphato Mphahlele - 480716	TC1
10192	R	Read Defined Variable [NI] Dev2/58 = 0.0		OK	0	Mphato Mphahlele - 480716	TC1
10193	A	Turn the PEA Reset Switch 44S6 to Reset position, and release it		OK		Mphato Mphahlele - 480716	TC1
10194	I	PEA Loop Train Lines Dev2/58 = coupler pin 017		OK		Mphato Mphahlele - 480716	TC1
10195	R	Read Defined Variable [NI] Dev2/58 = 1.0		OK	1	Mphato Mphahlele - 480716	TC1

10196	A	Activate the PEA on door 3 (44S13)		OK		Mphato Mphahlele - 480716	TC1
10197	I	PEA Loop Train Lines Dev2/58 = coupler pin 017		OK		Mphato Mphahlele - 480716	TC1
10198	R	Read Defined Variable [NI] Dev2/58 = 0.0		OK	0	Mphato Mphahlele - 480716	TC1
10199	A	Turn the PEA Reset Switch 44S6 to Reset position, and release it		OK		Mphato Mphahlele - 480716	TC1
10200	I	PEA Loop Train Lines Dev2/58 = coupler pin 017		OK		Mphato Mphahlele - 480716	TC1
10201	R	Read Defined Variable [NI] Dev2/58 = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10202	A	Activate the PEA on door 4 (44S14)		OK		Mphato Mphahlele - 480716	TC1
10203	I	PEA Loop Train Lines Dev2/58 = coupler pin 017		OK		Mphato Mphahlele - 480716	TC1
10204	R	Read Defined Variable [NI] Dev2/58 = 0.0		OK	0	Mphato Mphahlele - 480716	TC1
10205	A	Turn the PEA Reset Switch 44S6 to Reset position, and release it		OK		Mphato Mphahlele - 480716	TC1
10206	I	PEA Loop Train Lines Dev2/58 = coupler pin 017		OK		Mphato Mphahlele - 480716	TC1
10207	R	Read Defined Variable [NI] Dev2/58 = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10208	A	Activate the PEA on door 5 (44S15)		OK		Mphato Mphahlele - 480716	TC1
10209	I	PEA Loop Train Lines Dev2/58 = coupler pin 017		OK		Mphato Mphahlele - 480716	TC1
10210	R	Read Defined Variable [NI] Dev2/58 = 0.0		OK	0	Mphato Mphahlele - 480716	TC1
10211	A	Turn the PEA Reset Switch 44S6 to Reset position, and release it		OK		Mphato Mphahlele - 480716	TC1
10212	I	PEA Loop Train Lines Dev2/58 = coupler pin 017		OK		Mphato Mphahlele - 480716	TC1
10213	R	Read Defined Variable [NI] Dev2/58 = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10214	A	Activate the PEA on door 6 (44S16)		OK		Mphato Mphahlele - 480716	TC1
10215	I	PEA Loop Train Lines Dev2/58 = coupler pin 017		OK		Mphato Mphahlele - 480716	TC1
10216	R	Read Defined Variable [NI] Dev2/58 = 0.0		OK	0	Mphato Mphahlele - 480716	TC1

10217	A	Turn the PEA Reset Switch 44S6 to Reset position, and release it		OK		Mphato Mphahlele - 480716	TC1
10218	I	PEA Loop Train Lines Dev2/58 = coupler pin 017		OK		Mphato Mphahlele - 480716	TC1
10219	R	Read Defined Variable [NI] Dev2/58 = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10220	I	PEA Loop Train Lines Dev4/64 = END2 90XP15 pin 95		OK		Mphato Mphahlele - 480716	TC1
10221	A	Force [NI] Dev4/62 = 0.0		OK		Mphato Mphahlele - 480716	TC1
10222	I	PEA Override		OK		Mphato Mphahlele - 480716	TC1
10223	A	Press and hold the Override PEA pushbutton 44S5		OK		Mphato Mphahlele - 480716	TC1
10224	R	Read Defined Variable [TT] (MPU1)li_ubk_tc1peaoverridebuttr1 = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10225	R	Read Defined Variable [TT] (MPU1)li_ubk_tc1peaoverridebuttr2 = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10226	R	Read Defined Variable [TT] (MPU1)lo_ubk_tc1peaoverrider1 = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10227	R	Read Defined Variable [TT] (MPU1)lo_ubk_tc1peaoverrider2 = 1.0		OK	1	Mphato Mphahlele - 480716	TC1
10228	R	Check that the Override PEA pushbutton lamp 44S5 turns ON		OK		Mphato Mphahlele - 480716	TC1
10229	A	Release the Override PEA pushbutton 44S5		OK		Mphato Mphahlele - 480716	TC1
10230	R	Read Defined Variable [TT] (MPU1)li_ubk_tc1peaoverridebuttr1 = 0.0		OK	0	Mphato Mphahlele - 480716	TC1
10231	R	Read Defined Variable [TT] (MPU1)li_ubk_tc1peaoverridebuttr2 = 0.0		OK	0	Mphato Mphahlele - 480716	TC1
10232	A	Force [TT] (MPU1)lo_ubk_tc1peaoverrider1 = 0.0		OK		Mphato Mphahlele - 480716	TC1
10233	A	Force [TT] (MPU1)lo_ubk_tc1peaoverrider2 = 0.0		OK		Mphato Mphahlele - 480716	TC1
10234	R	Check that the Override PEA pushbutton lamp 44S5 turns OFF		OK		Mphato Mphahlele - 480716	TC1

10235	I	END OF TEST		OK		Mphato Mphahlele - 480716	TC1

Section 12 – Service Brake

12.1 Instructions list

12.1.1 040_SBK-Service Brake

I - Information A - Action R - Result NE - Not Executed

N°	Type	Instruction	File	Result status	Result value	Operator	Vehicle
10001	I	Service Brake (SPP = 040)		OK		Dilikani Ngubane - 526515	TC1
10002	I	Initial Conditions		OK		Dilikani Ngubane - 526515	TC1
10003	I	No air supply to the vehicle - pressure in tank <6Bar		OK		Dilikani Ngubane - 526515	TC1
10004	I	All brake panel cocks are in normal position (not isolated)		OK		Dilikani Ngubane - 526515	TC1
10005	I	The Service Brake Isolation Switch 40S2 should be in Normal position		OK		Dilikani Ngubane - 526515	TC1
10006	I	Circuit Breakers		OK		Dilikani Ngubane - 526515	TC1
10007	A	Close Circuit Breaker 40Q2		OK		Dilikani Ngubane - 526515	TC1
10008	A	Close Circuit Breaker 40Q3		OK		Dilikani Ngubane - 526515	TC1
10009	A	Close Circuit Breaker 40Q4		OK		Dilikani Ngubane - 526515	TC1
10010	A	Close Circuit Breaker 40Q5		OK		Dilikani Ngubane - 526515	TC1
10011	I	Brake Air Supply and Brake Application		OK		Dilikani Ngubane - 526515	TC1
10012	I	EB Reduced Train Lines Dev2/78 = Coupler pin 031 Dev2/81 = Coupler pin 131 Dev5/51 = END2 90XP15 pin 60		OK		Dilikani Ngubane - 526515	TC1
10013	R	Read Defined Variable [NI] Dev2/78 = 1.0		OK	1	Dilikani Ngubane - 526515	TC1
10014	R	Read Defined Variable [NI] Dev2/81 = 1.0		OK	1	Dilikani Ngubane - 526515	TC1
10015	R	Read Defined Variable [NI] Dev5/51 = 1.0		OK	1	Dilikani Ngubane - 526515	TC1
10016	I	Brake Applied Train Lines Dev2/36 = Coupler pin 010 Dev2/37 = Coupler pin 110 Dev5/49 = END2 90XP15 pin 50		OK		Dilikani Ngubane - 526515	TC1
10017	R	Read Defined Variable [NI] Dev2/36 = 0.0		OK	0	Dilikani Ngubane - 526515	TC1
10018	R	Read Defined Variable [NI] Dev2/37 = 0.0		OK	0	Dilikani Ngubane - 526515	TC1

10019	R	Read Defined Variable [NI] Dev5/49 = 0.0		OK	0	Dilikani Ngubane - 526515	TC1
10020	R	Read Defined Variable [TT] (MPU1)li_sbk_tc1brakeairsuppokr1 = 0.0		OK	0	Dilikani Ngubane - 526515	TC1
10021	R	Read Defined Variable [TT] (MPU1)li_sbk_tc1brakeairsuppokr2 = 0.0		OK	0	Dilikani Ngubane - 526515	TC1
10022	R	Read Defined Variable [TT] (BCU1)LI_BRPS_NOK = 1.0		OK	1	Dilikani Ngubane - 526515	TC1
10023	R	Read Defined Variable [TT] (BCU1)LI_BRAKE_NOT_APPLED = 1.0		OK	1	Dilikani Ngubane - 526515	TC1
10024	R	The Reduced Brake Lamp 40H2 on the indicator module 84A1 is ON		OK		Dilikani Ngubane - 526515	TC1
10025	A	Close/Isolate the coupler Isolation cock F2.1/1		OK		Dilikani Ngubane - 526515	TC1
10026	A	Open the Isolation cock F2.2/1		OK		Dilikani Ngubane - 526515	TC1
10027	A	Connect the air supply to the vehicle main pipe coupling flexible hose F3/1, and switch the supply ON		OK		Dilikani Ngubane - 526515	TC1
10028	I	Take note of any air leaks in the pipes or valves		OK		Dilikani Ngubane - 526515	TC1
10029	A	Allow the pressure to go above 6 bar. The pressure can be checked at the BRTP test point		OK		Dilikani Ngubane - 526515	TC1
10030	R	BRTP pressure is measured >=6 Bar		OK		Dilikani Ngubane - 526515	TC1
10031	I	EB Reduced Train Lines Dev2/78 = Coupler pin 031 Dev2/81 = Coupler pin 131 Dev5/51 = END2 90XP15 pin 60		OK		Dilikani Ngubane - 526515	TC1
10032	R	Read Defined Variable [NI] Dev2/78 = 0.0		OK	0	Dilikani Ngubane - 526515	TC1
10033	R	Read Defined Variable [NI] Dev2/81 = 0.0		OK	0	Dilikani Ngubane - 526515	TC1
10034	R	Read Defined Variable [NI] Dev5/51 = 0.0		OK	0	Dilikani Ngubane - 526515	TC1
10035	I	Brake Applied Train Lines Dev2/36 = Coupler pin 010 Dev2/37 = Coupler pin 110 Dev5/49 = END2 90XP15 pin 50		OK		Dilikani Ngubane - 526515	TC1
10036	R	Read Defined Variable [NI] Dev2/36 = 1.0		OK	1	Dilikani Ngubane - 526515	TC1
10037	R	Read Defined Variable [NI] Dev2/37 = 1.0		OK	1	Dilikani Ngubane - 526515	TC1

10038	R	Read Defined Variable [NI] Dev5/49 = 1.0		OK	1	Dilikani Ngubane - 526515	TC1
10039	R	Read Defined Variable [TT] (MPU1)li_sbk_tc1brakeairsuppokr1 = 1.0		OK	1	Dilikani Ngubane - 526515	TC1
10040	R	Read Defined Variable [TT] (MPU1)li_sbk_tc1brakeairsuppokr2 = 1.0		OK	1	Dilikani Ngubane - 526515	TC1
10041	R	Read Defined Variable [TT] (BCU1)LI_BRPS_NOK = 0.0		OK	0	Dilikani Ngubane - 526515	TC1
10042	R	Read Defined Variable [TT] (BCU1)LI_BRAKE_NOT_APPLED = 0.0		OK	0	Dilikani Ngubane - 526515	TC1
10043	R	The Reduced Brake Lamp 40H2 on the indicator module 84A1 is OFF		OK		Dilikani Ngubane - 526515	TC1
10044	A	Put the Master controller in 100% Traction position		OK		Dilikani Ngubane - 526515	TC1
10045	I	V>5km/h Train Line Dev4/38 = END2 90XP15 pin 28		OK		Dilikani Ngubane - 526515	TC1
10046	A	Force [NI] Dev4/38 = 1.0		OK		Dilikani Ngubane - 526515	TC1
10047	R	Lamp 40H1 on the indicator module 84A1 is ON		OK		Dilikani Ngubane - 526515	TC1
10048	A	Return the Master controller to Normal position (Coasting)		OK		Dilikani Ngubane - 526515	TC1
10049	I	V>5km/h Train Line Dev4/38 = END2 90XP15 pin 28		OK		Dilikani Ngubane - 526515	TC1
10050	A	Force [NI] Dev4/38 = 0.0		OK		Dilikani Ngubane - 526515	TC1
10051	R	Lamp 40H1 on the Indicator module 84A1 is OFF		OK		Dilikani Ngubane - 526515	TC1
10052	I	Remote Isolation		OK		Dilikani Ngubane - 526515	TC1
10053	A	Turn the key 30A1.S1 to Non-active cab position		OK		Dilikani Ngubane - 526515	TC1
10054	R	Read Defined Variable [TT] (BCU1)LI_BRAKE_ISO = 1.0		OK	1	Dilikani Ngubane - 526515	TC1
10055	I	Remote Isolation Train Lines Dev4/50 = END2 90XP15 pin 59 Dev2/38 = Coupler pin 025 Dev2/39 = Coupler pin 125		OK		Dilikani Ngubane - 526515	TC1
10056	A	Force [NI] Dev4/50 = 1.0		OK		Dilikani Ngubane - 526515	TC1

10057	R	Read Defined Variable [NI] Dev2/38 = 1.0		OK	1	Mbavhalelo Funyufunyu - 484649	TC1
10058	R	Read Defined Variable [NI] Dev2/39 = 1.0		OK	1	Mbavhalelo Funyufunyu - 484649	TC1
10059	I	Remote Isolation Train Lines Dev4/50 = END2 90XP15 pin 59 Dev2/38 = Coupler pin 025 Dev2/39 = Coupler pin 125		OK		Dilikani Ngubane - 526515	TC1
10060	A	Force [NI] Dev4/50 = 0.0		OK		Dilikani Ngubane - 526515	TC1
10061	R	Read Defined Variable [NI] Dev2/38 = 0.0		OK	0	Dilikani Ngubane - 526515	TC1
10062	R	Read Defined Variable [NI] Dev2/39 = 0.0		OK	0	Dilikani Ngubane - 526515	TC1
10063	A	Turn the key 30A1.S1 to Active cab position		OK		Dilikani Ngubane - 526515	TC1
10064	A	Turn the Service Brake Isolation Switch 40S2 to Isolation position		OK		Dilikani Ngubane - 526515	TC1
10065	R	Read Defined Variable [TT] (MPU1)li_sbk_tc1remoteisoswitchr1 = 1.0		OK	1	Dilikani Ngubane - 526515	TC1
10066	R	Read Defined Variable [TT] (MPU1)li_sbk_tc1remoteisoswitchr2 = 1.0		OK	1	Dilikani Ngubane - 526515	TC1
10067	I	EB Reduced Train Lines Dev5/51 = END2 90XP15 pin 60		OK		Dilikani Ngubane - 526515	TC1
10068	R	Read Defined Variable [NI] Dev5/51 = 1.0		OK	1	Dilikani Ngubane - 526515	TC1
10069	A	Force [TT] (MPU1)lo_sbk_tc1isobrake = 1.0		OK		Dilikani Ngubane - 526515	TC1
10070	R	Read Defined Variable [TT] (BCU1)LI_BRAKE_ISO = 0.0		OK	0	Dilikani Ngubane - 526515	TC1
10071	I	Remote Isolation Train Lines Dev5/50 = END2 90XP15 pin 59 Dev2/39 = Coupler pin 125		OK		Dilikani Ngubane - 526515	TC1
10072	R	Read Defined Variable [NI] Dev2/39 = 1.0		OK	1	Dilikani Ngubane - 526515	TC1
10073	R	Read Defined Variable [NI] Dev5/50 = 0.0		OK	0	Dilikani Ngubane - 526515	TC1
10074	R	The Remote Isolation relay valve C1.1_SERC is actuated, and the service brake is isolated (confirm that air is released from the valve)		OK		Dilikani Ngubane - 526515	TC1
10075	A	Release [TT] (MPU1)lo_sbk_tc1isobrake		OK		Dilikani Ngubane - 526515	TC1

10076	A	Turn the Service Brake Isolation Switch 40S2 to Normal position		OK		Dilikani Ngubane - 526515	TC1
10077	I	EB Reduced Train Lines Dev5/51 = END2 90XP15 pin 60		OK		Dilikani Ngubane - 526515	TC1
10078	R	Read Defined Variable [NI] Dev5/51 = 0.0		OK	0	Dilikani Ngubane - 526515	TC1
10079	I	Manual Isolation		OK		Dilikani Ngubane - 526515	TC1
10080	A	Turn the Manual Isolation Cock C1.3.1 to Isolated position		OK		Dilikani Ngubane - 526515	TC1
10081	I	EB Reduced Train Lines Dev5/51 = END2 90XP15 pin 60		OK		Dilikani Ngubane - 526515	TC1
10082	R	Read Defined Variable [NI] Dev5/51 = 1.0		OK	1	Dilikani Ngubane - 526515	TC1
10083	R	Read Defined Variable [TT] (MPU1)li_sbk_tc1servicebrakedc = 1.0		OK	1	Dilikani Ngubane - 526515	TC1
10084	R	Read Defined Variable [TT] (BCU1)LI_SERVICE_BR_DC = 1.0		OK	1	Dilikani Ngubane - 526515	TC1
10085	A	Turn the Manual Isolation Cock C1.3.1 to Normal position		OK		Dilikani Ngubane - 526515	TC1
10086	I	EB Reduced Train Lines Dev5/51 = END2 90XP15 pin 60		OK		Dilikani Ngubane - 526515	TC1
10087	R	Read Defined Variable [NI] Dev5/51 = 0.0		OK	0	Dilikani Ngubane - 526515	TC1
10088	R	Read Defined Variable [TT] (MPU1)li_sbk_tc1servicebrakedc = 0.0		OK	0	Dilikani Ngubane - 526515	TC1
10089	R	Read Defined Variable [TT] (BCU1)LI_SERVICE_BR_DC = 0.0		OK	0	Dilikani Ngubane - 526515	TC1
10090	I	MCE Fault		OK		Dilikani Ngubane - 526515	TC1
10091	A	Force [TT] (BCU1)LO_BRK_FLT = 1.0		OK		Dilikani Ngubane - 526515	TC1
10092	R	Read Defined Variable [TT] (MPU1)li_sbk_tc1bcufault = 1.0		OK	1	Dilikani Ngubane - 526515	TC1
10093	A	Force [TT] (BCU1)LO_BRK_FLT = 0.0		OK		Dilikani Ngubane - 526515	TC1
10094	R	Read Defined Variable [TT] (MPU1)li_sbk_tc1bcufault = 0.0		OK	0	Dilikani Ngubane - 526515	TC1
10095	A	Release [TT] (BCU1)LO_BRK_FLT		OK		Dilikani Ngubane - 526515	TC1
10096	I	Speed sensor TC1		OK		Dilikani Ngubane - 526515	TC1

10097	A	All connectors from speed sensor (one per axle) are connected to its axle in TC1 car.		OK		Dilikani Ngubane - 526515	TC1
10098	R	Read Defined Variable [TT] (MPU1)bcu1_bcuspdsenswsp1flt = 0.0		OK	0	Dilikani Ngubane - 526515	TC1
10099	R	Read Defined Variable [TT] (MPU1)bcu1_bcuspdsenswsp2flt = 0.0		OK	0	Dilikani Ngubane - 526515	TC1
10100	R	Read Defined Variable [TT] (MPU1)bcu1_bcuspdsenswsp3flt = 0.0		OK	0	Dilikani Ngubane - 526515	TC1
10101	R	Read Defined Variable [TT] (MPU1)bcu1_bcuspdsenswsp4flt = 0.0		OK	0	Dilikani Ngubane - 526515	TC1
10102	I	End of test		OK		Dilikani Ngubane - 526515	TC1

Section 13 – Holding and Parking Brake

13.1 Instructions list

13.1.1 045_PBK-Holding and Parking Brake

I - Information A - Action R - Result NE - Not Executed

N°	Type	Instruction	File	Result status	Result value	Operator	Vehicle
10001	I	Holding and Parking Brake (SPP = 045)		OK		Sizwe Sibanyoni - 484647	TC1
10002	I	Initial Conditions		OK		Sizwe Sibanyoni - 484647	TC1
10003	A	Using the tools list on the side of your screen, record the serial number of the manometer that will be used during this test		OK		Sizwe Sibanyoni - 484647	TC1
10004	I	Confirm the presence of air supply to the vehicle. The pressure can be checked at test point BRTP > 4.8 Bar		OK		Sizwe Sibanyoni - 484647	TC1
10005	I	Ensure that the Parking Brake Switch 45S1 is in "Normal" position		OK		Sizwe Sibanyoni - 484647	TC1
10006	I	Parking Brake Pressure Switch		OK		Sizwe Sibanyoni - 484647	TC1
10007	A	Turn the key 30A1.S1 to Active cab position		OK		Sizwe Sibanyoni - 484647	TC1
10008	R	Check that the pressure on test point C1.11/1 is >4.8 Bar Result Min : 4.8<= x ()		OK	4.9	Sizwe Sibanyoni - 484647	TC1
10009	R	Read Defined Variable [TT] (BCU1)LI_PARK_BR_RELEASE = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10010	R	Read Defined Variable [TT] (BCU1)LI_PARK_BR_DC = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10011	R	Read Defined Variable [TT] (MPU1)bcu1_parkbrakerelease = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10012	R	Read Defined Variable [TT] (MPU1)bcu1_parkbrakeisoldc = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10013	I	Parking Brake Applied Train Lines Dev2/74 = Coupler pin 018 Dev2/49 = Coupler pin 118 Dev5/58 = END2 90XP15 pin 77		OK		Sizwe Sibanyoni - 484647	TC1
10014	R	Read Defined Variable [NI] Dev2/74 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10015	R	Read Defined Variable [NI] Dev2/49 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10016	R	Read Defined Variable [NI] Dev5/58 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1

10017	R	Check that the Parking Brake Applied Lamp 45H2 on the indicator module 84A1 is OFF		OK		Sizwe Sibanyoni - 484647	TC1
10018	I	Remote Parking Brake Command		OK		Sizwe Sibanyoni - 484647	TC1
10019	A	Turn the Parking Brake Switch 45S1 to "Parking Brake" position		OK		Sizwe Sibanyoni - 484647	TC1
10020	R	Confirm that the parking brake is applied, and air is released from electro valve C1.5		OK		Sizwe Sibanyoni - 484647	TC1
10021	I	Remote Parking Brake Command Train lines Dev2/86 = Coupler pin 030 Dev2/87 = Coupler pin 130 Dev5/57 = END2 90XP15 pin 68		OK		Sizwe Sibanyoni - 484647	TC1
10022	R	Read Defined Variable [NI] Dev2/86 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10023	R	Read Defined Variable [NI] Dev2/87 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10024	R	Read Defined Variable [NI] Dev5/57 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10025	A	Allow the air to reach below 4.8 Bar - verify on test point C1.11/1		OK		Sizwe Sibanyoni - 484647	TC1
10026	R	Read Defined Variable [TT] (BCU1)LI_PARK_BR_RELEASE = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10027	R	Read Defined Variable [TT] (MPU1)bcu1_parkbrakerelease = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10028	I	Parking Brake Applied Train Lines Dev2/74 = Coupler pin 018 Dev2/49 = Coupler pin 118 Dev5/58 = END2 90XP15 pin 77		OK		Sizwe Sibanyoni - 484647	TC1
10029	R	Read Defined Variable [NI] Dev2/74 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10030	R	Read Defined Variable [NI] Dev2/49 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10031	R	Read Defined Variable [NI] Dev5/58 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10032	R	Check that the Parking Brake Applied Lamp 45H2 on the indicator module 84A1 turns ON		OK		Sizwe Sibanyoni - 484647	TC1
10033	A	Turn the Parking Brake Switch 45S1 to "Normal" position		OK		Sizwe Sibanyoni - 484647	TC1
10034	I	Remote Parking Brake Command Train lines Dev2/86 = Coupler pin 030 Dev2/87 = Coupler pin 130		OK		Sizwe Sibanyoni - 484647	TC1

		Dev5/57 = END2 90XP15 pin 68					
10035	R	Read Defined Variable [NI] Dev2/86 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10036	R	Read Defined Variable [NI] Dev2/87 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10037	R	Read Defined Variable [NI] Dev5/57 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10038	I	Parking Brake Manual Isolation		OK		Sizwe Sibanyoni - 484647	TC1
10039	A	Turn the Parking Brake Isolation cock C1.3.2 to "Isolated" position		OK		Sizwe Sibanyoni - 484647	TC1
10040	R	Read Defined Variable [TT] (BCU1)LI_PARK_BR_DC = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10041	R	Read Defined Variable [TT] (MPU1)bcu1_parkbrakeisoldc = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10042	R	Read Defined Variable [TT] (MPU1)li_pbk_tc1parkbrakeisol = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10043	I	Parking Brake Applied Train Lines Dev2/74 = Coupler pin 018 Dev2/49 = Coupler pin 118 Dev5/58 = END2 90XP15 pin 77		OK		Sizwe Sibanyoni - 484647	TC1
10044	R	Read Defined Variable [NI] Dev2/74 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10045	R	Read Defined Variable [NI] Dev2/49 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10046	R	Read Defined Variable [NI] Dev5/58 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10047	A	Return the Parking Brake Isolation cock C1.3.2 to "Normal" position		OK		Sizwe Sibanyoni - 484647	TC1
10048	R	Read Defined Variable [TT] (BCU1)LI_PARK_BR_DC = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10049	R	Read Defined Variable [TT] (MPU1)bcu1_parkbrakeisoldc = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10050	R	Read Defined Variable [TT] (MPU1)li_pbk_tc1parkbrakeisol = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10051	I	Parking Brake Applied Train Lines Dev2/74 = Coupler pin 018		OK		Sizwe Sibanyoni - 484647	TC1
10052	R	Read Defined Variable [NI] Dev2/74 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10053	I	END OF TEST		OK		Sizwe Sibanyoni - 484647	TC1

Section 14 – Passenger Doors

14.1 Instructions list

14.1.1 050_DOR-Passenger Doors

I - Information A - Action R - Result NE - Not Executed

N°	Type	Instruction	File	Result status	Result value	Operator	Vehicle
10001	I	Passenger Doors (SPP=050)		OK		Sizwe Sibanyoni - 484647	TC1
10002	I	Initial Conditions:		OK		Sizwe Sibanyoni - 484647	TC1
10003	A	Turn Driver's Master Key 30A1.S1 to Active Cabin Position		OK		Sizwe Sibanyoni - 484647	TC1
10004	I	Car Should be Prepared (closed battery contacts)		OK		Sizwe Sibanyoni - 484647	TC1
10005	I	Cab door windows should be closed		OK		Sizwe Sibanyoni - 484647	TC1
10006	I	Cab doors should be closed and unlocked		OK		Sizwe Sibanyoni - 484647	TC1
10007	I	Cab Door Windows		OK		Sizwe Sibanyoni - 484647	TC1
10008	A	Open and close both the LEFT and RIGHT cab door windows		OK		Sizwe Sibanyoni - 484647	TC1
10009	R	The LEFT cab door window opens and closes correctly		OK		Sizwe Sibanyoni - 484647	TC1
10010	R	The RIGHT cab door window opens and closes correctly		OK		Sizwe Sibanyoni - 484647	TC1
10011	I	Cabin Doors		OK		Sizwe Sibanyoni - 484647	TC1
10012	A	Open all 3 cab doors (LEFT, RIGHT, and saloon access) and close them		OK		Sizwe Sibanyoni - 484647	TC1
10013	R	The LEFT cab door can open fully and close shut		OK		Sizwe Sibanyoni - 484647	TC1
10014	R	The RIGHT cab door can open fully and close shut		OK		Sizwe Sibanyoni - 484647	TC1
10015	R	The saloon access door can open fully and close shut		OK		Sizwe Sibanyoni - 484647	TC1
10016	A	Lock the 3 doors with their respective keys		OK		Sizwe Sibanyoni - 484647	TC1
10017	R	The LEFT cab door is locked, the lock is functioning correctly, and the door cannot be opened		OK		Sizwe Sibanyoni - 484647	TC1

10018	R	The RIGHT cab door is locked, the lock is functioning correctly, and the door cannot be opened		OK		Sizwe Sibanyoni - 484647	TC1
10019	R	The Saloon access door is locked, the lock is functioning correctly, and the door cannot be opened		OK		Sizwe Sibanyoni - 484647	TC1
10020	A	Unlock the doors with their respective keys		OK		Sizwe Sibanyoni - 484647	TC1
10021	A	Repeat the open, close and lock operations from the outside of the vehicle		OK		Sizwe Sibanyoni - 484647	TC1
10022	R	Both cab doors can be opened, closed and locked from the outside		OK		Sizwe Sibanyoni - 484647	TC1
10023	I	External access locks		OK		Sizwe Sibanyoni - 484647	TC1
10024	I	Ensure Door 1 and Door 2 are closed		OK		Sizwe Sibanyoni - 484647	TC1
10025	A	Insert a square key into the external access lock of Door 1, and unlock the door		OK		Sizwe Sibanyoni - 484647	TC1
10026	A	The door is unlocked and can be opened freely.		OK		Sizwe Sibanyoni - 484647	TC1
10027	A	Close the door, and lock the external access lock with the square key		OK		Sizwe Sibanyoni - 484647	TC1
10028	R	The door is locked and can no longer be opened manually		OK		Sizwe Sibanyoni - 484647	TC1
10029	A	Insert a square key into the external access lock of Door 2, and unlock the door		OK		Sizwe Sibanyoni - 484647	TC1
10030	R	The door is unlocked and can be opened freely		OK		Sizwe Sibanyoni - 484647	TC1
10031	A	Close the door, and lock the external access lock with the square key		OK		Sizwe Sibanyoni - 484647	TC1
10032	R	The door is locked and can no longer be opened manually		OK		Sizwe Sibanyoni - 484647	TC1
10033	I	Circuit Breakers		OK		Sizwe Sibanyoni - 484647	TC1
10034	A	Close Circuit Breaker 50Q1		OK		Sizwe Sibanyoni - 484647	TC1
10035	R	DCU 1 is powered ON		OK		Sizwe Sibanyoni - 484647	TC1
10036	R	Check on the DDU that DCU1 is online		OK		Sizwe Sibanyoni - 484647	TC1

10037	A	Close Circuit Breaker 50Q2		OK		Sizwe Sibanyoni - 484647	TC1
10038	R	DCU 2 is powered ON		OK		Sizwe Sibanyoni - 484647	TC1
10039	R	Check on the DDU that DCU2 is online		OK		Sizwe Sibanyoni - 484647	TC1
10040	A	Close Circuit Breaker 50Q3		OK		Sizwe Sibanyoni - 484647	TC1
10041	R	DCU 3 is powered ON		OK		Sizwe Sibanyoni - 484647	TC1
10042	R	Check on the DDU that DCU3 is online		OK		Sizwe Sibanyoni - 484647	TC1
10043	A	Close Circuit Breaker 50Q4		OK		Sizwe Sibanyoni - 484647	TC1
10044	R	DCU 4 is powered ON		OK		Sizwe Sibanyoni - 484647	TC1
10045	R	Check on the DDU that DCU4 is online		OK		Sizwe Sibanyoni - 484647	TC1
10046	A	Close Circuit Breaker 50Q5		OK		Sizwe Sibanyoni - 484647	TC1
10047	R	DCU 5 is powered ON		OK		Sizwe Sibanyoni - 484647	TC1
10048	R	Check on the DDU that DCU5 is online		OK		Sizwe Sibanyoni - 484647	TC1
10049	A	Close Circuit Breaker 50Q6		OK		Sizwe Sibanyoni - 484647	TC1
10050	R	DCU 6 is powered ON		OK		Sizwe Sibanyoni - 484647	TC1
10051	R	Check on the DDU that DCU6 is online		OK		Sizwe Sibanyoni - 484647	TC1
10052	A	Close Circuit Breaker 50Q7		OK		Sizwe Sibanyoni - 484647	TC1
10053	I	Car ID Code		OK		Sizwe Sibanyoni - 484647	TC1
10054	A	Using the Door Status screen on the DDU, check that all the doors on TC1 are available - as in the picture below		OK		Sizwe Sibanyoni - 484647	TC1
10055	R	All doors are available		OK		Sizwe Sibanyoni - 484647	TC1
10056	I	Left Side Doors		OK		Sizwe Sibanyoni - 484647	TC1
10057	I	Ensure that all doors are CLOSED before proceeding to the next steps		OK		Sizwe Sibanyoni - 484647	TC1
10058	I	Door Authorization		OK		Sizwe Sibanyoni - 484647	TC1
10059	I	V<3km/h Train Line Dev4/39 = END2 90XP15 pin 29		OK		Sizwe Sibanyoni - 484647	TC1
10060	A	Force [NI] Dev4/39 = 1.0		OK		Sizwe Sibanyoni - 484647	TC1

10061	A	Switch Door Authorization Selector 50S7 to DRIVER		OK		Sizwe Sibanyoni - 484647	TC1
10062	R	Read Defined Variable [TT] (MPU1)li_dor_tc1ertmsauthdoorr1 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10063	R	Read Defined Variable [TT] (MPU1)li_dor_tc1ertmsauthdoorr2 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10064	R	Read Defined Variable [TT] (MPU1)li_dor_tc1authdoorpbleft = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10065	R	Read Defined Variable [TT] (MPU1)li_dor_tc1doorauthdleftr1 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10066	R	Read Defined Variable [TT] (MPU1)li_dor_tc1doorauthdleftr2 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10067	I	Door Auth Left Train Lines Dev2/56 = Coupler pin 009 Dev2/57 = Coupler pin 124 Dev5/64 = END2 90XP15 pin 85		OK		Sizwe Sibanyoni - 484647	TC1
10068	R	Read Defined Variable [NI] Dev2/56 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10069	R	Read Defined Variable [NI] Dev2/57 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10070	R	Read Defined Variable [NI] Dev5/64 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10071	A	Press the Doors LEFT Side Authorization button 50S5		OK		Sizwe Sibanyoni - 484647	TC1
10072	R	Check that the YELLOW LEFT Side Authorization pushbutton lamp 50S5 turns ON		OK		Sizwe Sibanyoni - 484647	TC1
10073	R	Read Defined Variable [TT] (MPU1)li_dor_tc1authdoorpbleft = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10074	R	Read Defined Variable [TT] (MPU1)li_dor_tc1doorauthdleftr1 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10075	R	Read Defined Variable [TT] (MPU1)li_dor_tc1doorauthdleftr2 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10076	I	Door Auth Left Train Lines Dev2/56 = Coupler pin 009 Dev2/57 = Coupler pin 124 Dev5/64 = END2 90XP15 pin 85		OK		Sizwe Sibanyoni - 484647	TC1
10077	R	Read Defined Variable [NI] Dev2/56 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10078	R	Read Defined Variable [NI] Dev2/57 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10079	R	Read Defined Variable [NI] Dev5/64 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1

10080	A	Turn Driver's Master Key 30A1.S1 to NON-Active Cabin Position		OK		Sizwe Sibanyoni - 484647	TC1
10081	R	Read Defined Variable [TT] (MPU1)li_dor_tc1dooruthdleftr1 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10082	A	Turn Driver's Master Key 30A1.S1 to Active Cabin Position		OK		Sizwe Sibanyoni - 484647	TC1
10083	I	Door Open		OK		Sizwe Sibanyoni - 484647	TC1
10084	R	Read Defined Variable [TT] (MPU1)li_dor_tc1opendoorpbleftr1 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10085	R	Read Defined Variable [TT] (MPU1)li_dor_tc1opendoorpbleftr2 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10086	R	Read Defined Variable [TT] (MPU1)lo_dor_tc1opendoorlgtleftr1 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10087	R	Read Defined Variable [TT] (MPU1)lo_dor_tc1opendoorlgtleftr2 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10088	A	Press and hold the LEFT side Door Open pushbutton 50S1		OK		Sizwe Sibanyoni - 484647	TC1
10089	R	Check that the WHITE LEFT Side Door Open pushbutton lamp 50S1 turns ON		OK		Sizwe Sibanyoni - 484647	TC1
10090	R	Check that door 1, 3 and 5 (LEFT SIDE) open		OK		Sizwe Sibanyoni - 484647	TC1
10091	R	Read Defined Variable [TT] (MPU1)lo_dor_tc1opendoorleft = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10092	R	Read Defined Variable [TT] (MPU1)li_dor_tc1opendoorpbleftr1 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10093	R	Read Defined Variable [TT] (MPU1)li_dor_tc1opendoorpbleftr2 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10094	R	Read Defined Variable [TT] (MPU1)lo_dor_tc1opendoorlgtleftr1 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10095	R	Read Defined Variable [TT] (MPU1)lo_dor_tc1opendoorlgtleftr2 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10096	A	Release the LEFT side Door Open pushbutton 50S1		OK		Sizwe Sibanyoni - 484647	TC1

10097	I	Door Closing		OK		Sizwe Sibanyoni - 484647	TC1
10098	R	Read Defined Variable [TT] (MPU1)li_dor_tc1closedoorpbleftr1 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10099	R	Read Defined Variable [TT] (MPU1)li_dor_tc1closedoorpbleftr2 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10100	R	Read Defined Variable [TT] (MPU1)lo_dor_tc1closedoorlgtleftr1 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10101	R	Read Defined Variable [TT] (MPU1)lo_dor_tc1closedoorlgtleftr2 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10102	R	Read Defined Variable [TT] (MPU1)li_dor_tc1closedoorlineleft = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10103	I	Door Close Left Train Lines Dev2/50 = Coupler pin 004 Dev2/51 = Coupler pin 137 Dev5/60 = END2 90XP15 pin 79		OK		Sizwe Sibanyoni - 484647	TC1
10104	R	Read Defined Variable [NI] Dev2/50 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10105	R	Read Defined Variable [NI] Dev2/51 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10106	R	Read Defined Variable [NI] Dev5/60 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10107	A	Press and hold the LEFT side Door Close pushbutton 50S3		OK		Sizwe Sibanyoni - 484647	TC1
10108	R	Check that the BLUE LEFT Side Door Close pushbutton lamp 50S3 turns ON		OK		Sizwe Sibanyoni - 484647	TC1
10109	R	Check that door 1, 3 and 5 (LEFT SIDE) close		OK		Sizwe Sibanyoni - 484647	TC1
10110	R	Read Defined Variable [TT] (MPU1)li_dor_tc1closedoorpbleftr1 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10111	R	Read Defined Variable [TT] (MPU1)li_dor_tc1closedoorpbleftr2 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10112	R	Read Defined Variable [TT] (MPU1)lo_dor_tc1closedoorlgtleftr1 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10113	R	Read Defined Variable [TT] (MPU1)lo_dor_tc1closedoorlgtleftr2 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10114	R	Read Defined Variable [TT] (MPU1)li_dor_tc1closedoorlineleft = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1

10115	I	Door Close Left Train Lines Dev2/50 = Coupler pin 004 Dev2/51 = Coupler pin 137 Dev5/60 = END2 90XP15 pin 79		OK		Sizwe Sibanyoni - 484647	TC1
10116	R	Read Defined Variable [NI] Dev2/50 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10117	R	Read Defined Variable [NI] Dev2/51 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10118	R	Read Defined Variable [NI] Dev5/60 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10119	R	Read Defined Variable [TT] (MPU1)li_dor_tc1doorauthdleftr1 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10120	A	Release the LEFT side Door Close pushbutton 50S3		OK		Sizwe Sibanyoni - 484647	TC1
10121	I	Right Side Doors		OK		Sizwe Sibanyoni - 484647	TC1
10122	I	Door Authorization		OK		Sizwe Sibanyoni - 484647	TC1
10123	R	Read Defined Variable [TT] (MPU1)li_dor_tc1authdoorpbright = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10124	R	Read Defined Variable [TT] (MPU1)li_dor_tc1doorauthdrightr1 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10125	R	Read Defined Variable [TT] (MPU1)li_dor_tc1doorauthdrightr2 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10126	I	Door Auth Right Train Lines Dev2/54 = Coupler pin 024 Dev2/64 = Coupler pin 109 Dev5/56 = END2 90XP15 pin 84		OK		Sizwe Sibanyoni - 484647	TC1
10127	R	Read Defined Variable [NI] Dev2/54 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10128	R	Read Defined Variable [NI] Dev2/64 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10129	R	Read Defined Variable [NI] Dev5/56 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10130	A	Press and hold the Doors RIGHT Side Authorization button 50S6		OK		Sizwe Sibanyoni - 484647	TC1
10131	R	Check that the YELLOW RIGHT Side Authorization pushbutton lamp 50S6 turns ON		OK		Sizwe Sibanyoni - 484647	TC1
10132	R	Read Defined Variable [TT] (MPU1)li_dor_tc1authdoorpbright = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10133	R	Read Defined Variable [TT] (MPU1)li_dor_tc1doorauthdrightr1 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1

10134	R	Read Defined Variable [TT] (MPU1)li_dor_tc1doorauthdrightr2 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10135	I	Door Auth Right Train Lines Dev2/54 = Coupler pin 024 Dev2/64 = Coupler pin 109 Dev5/56 = END2 90XP15 pin 84		OK		Sizwe Sibanyoni - 484647	TC1
10136	R	Read Defined Variable [NI] Dev2/54 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10137	R	Read Defined Variable [NI] Dev2/64 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10138	R	Read Defined Variable [NI] Dev5/56 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10139	A	Release the Doors RIGHT Side Authorization button 50S6		OK		Sizwe Sibanyoni - 484647	TC1
10140	A	Turn Driver's Master Key 30A1.S1 to NON-Active Cabin Position		OK		Sizwe Sibanyoni - 484647	TC1
10141	R	Read Defined Variable [TT] (MPU1)li_dor_tc1doorauthdrightr1 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10142	A	Turn Driver's Master Key 30A1.S1 to Active Cabin Position		OK		Sizwe Sibanyoni - 484647	TC1
10143	I	Door Open		OK		Sizwe Sibanyoni - 484647	TC1
10144	R	Read Defined Variable [TT] (MPU1)li_dor_tc1opendoorpbrightr1 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10145	R	Read Defined Variable [TT] (MPU1)li_dor_tc1opendoorpbrightr2 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10146	R	Read Defined Variable [TT] (MPU1)lo_dor_tc1opendoorlgtrightr1 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10147	R	Read Defined Variable [TT] (MPU1)lo_dor_tc1opendoorlgtrightr2 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10148	A	Press and hold the right-side Door Open pushbutton 50S2		OK		Sizwe Sibanyoni - 484647	TC1
10149	R	Check that the WHITE right-side Door Open pushbutton lamp 50S2 turns ON		OK		Sizwe Sibanyoni - 484647	TC1
10150	R	Check that door 2, 4 and 6 (RIGHT SIDE) open		OK		Sizwe Sibanyoni - 484647	TC1

10151	R	Read Defined Variable [TT] (MPU1)lo_dor_tc1opendoorright = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10152	R	Read Defined Variable [TT] (MPU1)li_dor_tc1opendoorpbrightr1 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10153	R	Read Defined Variable [TT] (MPU1)li_dor_tc1opendoorpbrightr2 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10154	R	Read Defined Variable [TT] (MPU1)lo_dor_tc1opendoorlgtrightr1 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10155	R	Read Defined Variable [TT] (MPU1)lo_dor_tc1opendoorlgtrightr2 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10156	A	Release the right-side Door Open pushbutton 50S2		OK		Sizwe Sibanyoni - 484647	TC1
10157	I	Door Closing		OK		Sizwe Sibanyoni - 484647	TC1
10158	R	Read Defined Variable [TT] (MPU1)li_dor_tc1closedoorpbrightr1 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10159	R	Read Defined Variable [TT] (MPU1)li_dor_tc1closedoorpbrightr2 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10160	R	Read Defined Variable [TT] (MPU1)lo_dor_tc1closedoorlgtrightr1 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10161	R	Read Defined Variable [TT] (MPU1)lo_dor_tc1closedoorlgtrightr2 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10162	R	Read Defined Variable [TT] (MPU1)li_dor_tc1closedoorlineright = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10163	I	Door Close Right Train Lines Dev2/52 = Coupler pin 037 Dev2/53 = Coupler pin 104 Dev5/59 = END2 90XP15 pin 78		OK		Sizwe Sibanyoni - 484647	TC1
10164	R	Read Defined Variable [NI] Dev2/52 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10165	R	Read Defined Variable [NI] Dev2/53 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10166	R	Read Defined Variable [NI] Dev5/59 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1

10167	A	Press and hold the right-side Door Close pushbutton 50S4		OK		Sizwe Sibanyoni - 484647	TC1
10168	R	Check that the BLUE RIGHT Side Door Close pushbutton lamp 50S4 turns ON		OK		Sizwe Sibanyoni - 484647	TC1
10169	R	Check that door 2, 4 and 6 (RIGHT SIDE) close		OK		Sizwe Sibanyoni - 484647	TC1
10170	R	Read Defined Variable [TT] (MPU1)li_dor_tc1closedoorpbrightr1 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10171	R	Read Defined Variable [TT] (MPU1)li_dor_tc1closedoorpbrightr2 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10172	R	Read Defined Variable [TT] (MPU1)lo_dor_tc1closedoorlgtrightr1 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10173	R	Read Defined Variable [TT] (MPU1)lo_dor_tc1closedoorlgtrightr2 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10174	R	Read Defined Variable [TT] (MPU1)li_dor_tc1closedoorlineright = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10175	I	Door Close Right Train Lines Dev2/52 = Coupler pin 037 Dev2/53 = Coupler pin 104 Dev5/59 = END2 90XP15 pin 78		OK		Sizwe Sibanyoni - 484647	TC1
10176	R	Read Defined Variable [NI] Dev2/52 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10177	R	Read Defined Variable [NI] Dev2/53 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10178	R	Read Defined Variable [NI] Dev5/59 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10179	R	Read Defined Variable [TT] (MPU1)li_dor_tc1doorauthdrightr1 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10180	A	Release the right-side Door Close pushbutton 50S4		OK		Sizwe Sibanyoni - 484647	TC1
10181	I	Closing Conditions		OK		Sizwe Sibanyoni - 484647	TC1
10182	A	Press the Doors LEFT Side Authorization button 50S5		OK		Sizwe Sibanyoni - 484647	TC1
10183	I	Door Close Left Train Line Dev5/60 = END2 90XP15 pin 79		OK		Sizwe Sibanyoni - 484647	TC1

10184	R	Read Defined Variable [NI] Dev5/60 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10185	A	Press the Doors right-side Authorization button 50S6		OK		Sizwe Sibanyoni - 484647	TC1
10186	I	Door Close Right Train Lines Dev5/59 = END2 90XP15 pin 78		OK		Sizwe Sibanyoni - 484647	TC1
10187	R	Read Defined Variable [NI] Dev5/59 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10188	A	Press the LEFT side Door Open pushbutton 50S1		OK		Sizwe Sibanyoni - 484647	TC1
10189	A	Press the right-side Door Open pushbutton 50S2		OK		Sizwe Sibanyoni - 484647	TC1
10190	I	V>5km/h Train Line Dev4/38 = END2 90XP15 pin 28		OK		Sizwe Sibanyoni - 484647	TC1
10191	A	Force [NI] Dev4/38 = 1.0		OK		Sizwe Sibanyoni - 484647	TC1
10192	R	Read Defined Variable [TT] (MPU1)li_rec_tc1thresholdfive1 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10193	R	Read Defined Variable [TT] (MPU1)li_rec_tc1thresholdfive2 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10194	I	Door Close Left Train Line Dev5/60 = END2 90XP15 pin 79		OK		Sizwe Sibanyoni - 484647	TC1
10195	R	Read Defined Variable [NI] Dev5/60 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10196	I	Door Close Right Train Lines Dev5/59 = END2 90XP15 pin 78		OK		Sizwe Sibanyoni - 484647	TC1
10197	R	Read Defined Variable [NI] Dev5/59 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10198	R	Check that all the Doors Close		OK		Sizwe Sibanyoni - 484647	TC1
10199	I	V>5km/h Train Line Dev4/38 = END2 90XP15 pin 28		OK		Sizwe Sibanyoni - 484647	TC1
10200	A	Force [NI] Dev4/38 = 0.0		OK		Sizwe Sibanyoni - 484647	TC1
10201	R	Read Defined Variable [TT] (MPU1)li_rec_tc1thresholdfive1 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10202	R	Read Defined Variable [TT] (MPU1)li_rec_tc1thresholdfive2 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10203	I	ERTMS Control		OK		Sizwe Sibanyoni - 484647	TC1

10204	A	Switch Door Authorization Selector 50S7 to ERTMS		OK		Sizwe Sibanyoni - 484647	TC1
10205	R	Read Defined Variable [TT] (MPU1)li_dor_tc1ertmsauthdoorr1 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10206	R	Read Defined Variable [TT] (MPU1)li_dor_tc1ertmsauthdoorr2 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10207	I	Left Doors		OK		Sizwe Sibanyoni - 484647	TC1
10208	I	ERTMS Auth Left Train Line Dev4/86 = END2 90XP15 pin 44		OK		Sizwe Sibanyoni - 484647	TC1
10209	A	Force [NI] Dev4/86 = 1.0		OK		Sizwe Sibanyoni - 484647	TC1
10210	R	Check that the YELLOW LEFT Side Authorization pushbutton lamp 50S5 turns ON		OK		Sizwe Sibanyoni - 484647	TC1
10211	A	Force [TT] (MPU1)lo_dor_tc1distertmsauthleftr1 = 1.0		OK		Sizwe Sibanyoni - 484647	TC1
10212	A	Force [TT] (MPU1)lo_dor_tc1distertmsauthleftr2 = 1.0		OK		Sizwe Sibanyoni - 484647	TC1
10213	A	Force [TT] (MPU1)lo_dor_tc1opendoorleft = 1.0		OK		Sizwe Sibanyoni - 484647	TC1
10214	R	Check that door 1, 3 and 5 (LEFT SIDE) open		OK		Sizwe Sibanyoni - 484647	TC1
10215	A	Release [TT] (MPU1)lo_dor_tc1opendoorleft		OK		Sizwe Sibanyoni - 484647	TC1
10216	R	Check that door 1, 3 and 5 (LEFT SIDE) close		OK		Sizwe Sibanyoni - 484647	TC1
10217	A	Press the LEFT side Door Open pushbutton 50S1		OK		Sizwe Sibanyoni - 484647	TC1
10218	R	Check that door 1, 3 and 5 (LEFT SIDE) open		OK		Sizwe Sibanyoni - 484647	TC1
10219	I	ERTMS Auth Left Train Line Dev4/86 = END2 90XP15 pin 44		OK		Sizwe Sibanyoni - 484647	TC1
10220	A	Force [NI] Dev4/86 = 0.0		OK		Sizwe Sibanyoni - 484647	TC1
10221	A	Press the LEFT side Door Close pushbutton 50S3		OK		Sizwe Sibanyoni - 484647	TC1

10222	R	Check that door 1, 3 and 5 (LEFT SIDE) close		OK		Sizwe Sibanyoni - 484647	TC1
10223	A	Release [TT] (MPU1)lo_dor_tc1distertmsauthleftr1		OK		Sizwe Sibanyoni - 484647	TC1
10224	A	Release [TT] (MPU1)lo_dor_tc1distertmsauthleftr2		OK		Sizwe Sibanyoni - 484647	TC1
10225	I	Right Doors		OK		Sizwe Sibanyoni - 484647	TC1
10226	I	ERTMS Auth Right Train Line Dev4/87 = END2 90XP15 pin 47		OK		Sizwe Sibanyoni - 484647	TC1
10227	A	Force [NI] Dev4/87 = 1.0		OK		Sizwe Sibanyoni - 484647	TC1
10228	R	Check that the YELLOW RIGHT Side Authorization pushbutton lamp 50S6 turns ON		OK		Sizwe Sibanyoni - 484647	TC1
10229	A	Force [TT] (MPU1)lo_dor_tc1distertmsauthrightr1 = 1.0		OK		Sizwe Sibanyoni - 484647	TC1
10230	A	Force [TT] (MPU1)lo_dor_tc1distertmsauthrightr2 = 1.0		OK		Sizwe Sibanyoni - 484647	TC1
10231	A	Force [TT] (MPU1)lo_dor_tc1opendoorright = 1.0		OK		Sizwe Sibanyoni - 484647	TC1
10232	R	Check that door 2, 4 and 6 (RIGHT SIDE) open		OK		Sizwe Sibanyoni - 484647	TC1
10233	A	Release [TT] (MPU1)lo_dor_tc1opendoorright		OK		Sizwe Sibanyoni - 484647	TC1
10234	R	Check that door 2, 4 and 6 (RIGHT SIDE) close		OK		Sizwe Sibanyoni - 484647	TC1
10235	A	Press the RIGHT side Door Open pushbutton 50S2		OK		Sizwe Sibanyoni - 484647	TC1
10236	R	Check that door 2, 4 and 6 (RIGHT SIDE) open		OK		Sizwe Sibanyoni - 484647	TC1
10237	I	ERTMS Auth Right Train Line Dev4/87 = END2 90XP15 pin 47		OK		Sizwe Sibanyoni - 484647	TC1
10238	A	Force [NI] Dev4/87 = 0.0		OK		Sizwe Sibanyoni - 484647	TC1
10239	A	Press the RIGHT side Door Close pushbutton 50S4		OK		Sizwe Sibanyoni - 484647	TC1

10240	R	Check that door 2, 4 and 6 (RIGHT SIDE) close		OK		Sizwe Sibanyoni - 484647	TC1
10241	A	Release [TT] (MPU1)lo_dor_tc1distertmsauthrightr1		OK		Sizwe Sibanyoni - 484647	TC1
10242	A	Release [TT] (MPU1)lo_dor_tc1distertmsauthrightr2		OK		Sizwe Sibanyoni - 484647	TC1
10243	I	Opening Gap, Safety Loop and Obstacle Detection		OK		Sizwe Sibanyoni - 484647	TC1
10244	A	Close Circuit Breaker 51Q1		OK		Sizwe Sibanyoni - 484647	TC1
10245	A	Check that the Door Safety Loop Indicator lamp 51H1 is ON		OK		Sizwe Sibanyoni - 484647	TC1
10246	R	Read Defined Variable [TT] (MPU1)li_dor_tc1alldoorsclosedr1 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10247	R	Read Defined Variable [TT] (MPU1)li_dor_tc1alldoorsclosedr2 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10248	I	Safety Doors Loop Train Line Dev2/60 = Coupler pin 016 Dev2/61 = Coupler pin 116		OK		Sizwe Sibanyoni - 484647	TC1
10249	R	Read Defined Variable [NI] Dev2/60 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10250	R	Read Defined Variable [NI] Dev2/61 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10251	I	Doors Open Train Line Dev2/82 = Coupler pin 029 Dev2/83 = Coupler pin 129 Dev5/55 = END2 90XP15 pin 66		OK		Sizwe Sibanyoni - 484647	TC1
10252	R	Read Defined Variable [NI] Dev2/82 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10253	R	Read Defined Variable [NI] Dev2/83 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10254	R	Read Defined Variable [NI] Dev5/55 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10255	I	Safety Doors Loop Train Line Dev4/89 = END2 90XP25 pin 96		OK		Sizwe Sibanyoni - 484647	TC1
10256	A	Force [NI] Dev4/89 = 1.0		OK		Sizwe Sibanyoni - 484647	TC1
10257	R	Read Defined Variable [TT] (MPU1)li_dor_tc1alldoorsclosedr1 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10258	R	Read Defined Variable [TT] (MPU1)li_dor_tc1alldoorsclosedr2 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10259	I	Safety Doors Loop Train Line Dev2/60 = Coupler pin 016		OK		Sizwe Sibanyoni - 484647	TC1

		Dev2/61 = Coupler pin 116					
10260	R	Read Defined Variable [NI] Dev2/60 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10261	R	Read Defined Variable [NI] Dev2/61 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10262	I	Doors Open Train Line Dev2/82 = Coupler pin 029 Dev2/83 = Coupler pin 129 Dev5/55 = END2 90XP15 pin 66		OK		Sizwe Sibanyoni - 484647	TC1
10263	R	Read Defined Variable [NI] Dev2/82 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10264	R	Read Defined Variable [NI] Dev2/83 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10265	R	Read Defined Variable [NI] Dev5/55 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10266	A	Check that the Door Safety Loop Indicator lamp 51H1 is OFF		OK		Sizwe Sibanyoni - 484647	TC1
10267	I	Door 1		OK		Sizwe Sibanyoni - 484647	TC1
10268	I	ERTMS Auth Left Train Line Dev4/86 = END2 90XP15 pin 44		OK		Sizwe Sibanyoni - 484647	TC1
10269	A	Force [NI] Dev4/86 = 1.0		OK		Sizwe Sibanyoni - 484647	TC1
10270	A	Force [TT] (MPU1)lo_dor_tc1distertmsauthleftr1 = 1.0		OK		Sizwe Sibanyoni - 484647	TC1
10271	A	Force [TT] (MPU1)lo_dor_tc1distertmsauthleftr2 = 1.0		OK		Sizwe Sibanyoni - 484647	TC1
10272	A	Force [TT] (MPU1)lo_dor_tc1opendoorleft = 1.0		OK		Sizwe Sibanyoni - 484647	TC1
10273	R	Check if ALL Left doors opens in 3 sec (+1/-0)		OK		Sizwe Sibanyoni - 484647	TC1
10274	R	Check that the GREEN LEDS on both sides of the door blink while the door opens [Safety Request: Prasa8-05]		OK		Sizwe Sibanyoni - 484647	TC1
10275	I	Doors Open Train Line Dev2/82 = Coupler pin 029		OK		Sizwe Sibanyoni - 484647	TC1
10276	R	Read Defined Variable [NI] Dev2/82 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10277	I	Door Opening Gap		OK		Sizwe Sibanyoni - 484647	TC1
10278	A	Measure the opening gap of the door. (The measurement must be done at the		OK		Sizwe Sibanyoni - 484647	TC1

		BOTTOM of the door).					
10279	R	Door 1 gap Result Min/Max : 1390.00<= x<= 1410.00 (mm)		OK	1396	Sizwe Sibanyoni - 484647	TC1
10280	A	Measure the opening gap of the door. (The measurement must be done at the TOP of the door).		OK		Sizwe Sibanyoni - 484647	TC1
10281	R	Door 1 gap Result Min/Max : 1390.00<= x<= 1410.00 (mm)		OK	1408	Sizwe Sibanyoni - 484647	TC1
10282	A	Measure the opening gap of the door. (The measurement must be done in the MIDDLE of the door).		OK		Sizwe Sibanyoni - 484647	TC1
10283	R	Door 1 gap Result Min/Max : 1390.00<= x<= 1410.00 (mm)		OK	1400	Sizwe Sibanyoni - 484647	TC1
10284	I	Door 3		OK		Sizwe Sibanyoni - 484647	TC1
10285	I	Door Opening Gap		OK		Sizwe Sibanyoni - 484647	TC1
10286	A	Measure the opening gap of the door. (The measurement must be done at the BOTTOM of the door).		OK		Sizwe Sibanyoni - 484647	TC1
10287	R	Door 3 gap Result Min/Max : 1390.00<= x<= 1410.00 (mm)		OK	1390	Sizwe Sibanyoni - 484647	TC1
10288	A	Measure the opening gap of the door. (The measurement must be done at the TOP of the door).		OK		Sizwe Sibanyoni - 484647	TC1
10289	R	Door 3 gap Result Min/Max : 1390.00<= x<= 1410.00 (mm)		OK	1402	Sizwe Sibanyoni - 484647	TC1
10290	A	Measure the opening gap of the door. (The measurement must be done in the MIDDLE of the door).		OK		Sizwe Sibanyoni - 484647	TC1
10291	R	Door 3 gap Result Min/Max : 1390.00<= x<= 1410.00 (mm)		OK	1396	Sizwe Sibanyoni - 484647	TC1
10292	I	Door 5		OK		Sizwe Sibanyoni - 484647	TC1
10293	I	Door Opening Gap		OK		Sizwe Sibanyoni - 484647	TC1
10294	A	Measure the opening gap of the door. (The measurement must be done at the BOTTOM of the door).		OK		Sizwe Sibanyoni - 484647	TC1
10295	R	Door 5 gap Result Min/Max : 1390.00<= x<= 1410.00 (mm)		OK	1398	Sizwe Sibanyoni - 484647	TC1

10296	A	Measure the opening gap of the door. (The measurement must be done at the TOP of the door).		OK		Sizwe Sibanyoni - 484647	TC1
10297	R	Door 5 gap Result Min/Max : 1390.00<= x<= 1410.00 (mm)		OK	1410	Sizwe Sibanyoni - 484647	TC1
10298	A	Measure the opening gap of the door. (The measurement must be done in the MIDDLE of the door).		OK		Sizwe Sibanyoni - 484647	TC1
10299	R	Door 5 gap Result Min/Max : 1390.00<= x<= 1410.00 (mm)		OK	1408	Sizwe Sibanyoni - 484647	TC1
10300	A	Release [TT] (MPU1)lo_dor_tc1opendoorleft		OK		Sizwe Sibanyoni - 484647	TC1
10301	R	Check if ALL left doors closes in 3 sec (+1/-0)		OK		Sizwe Sibanyoni - 484647	TC1
10302	R	Check that the RED leds on both sides of the door blink while the door closes [Safety Request: Prasa8-05]		OK		Sizwe Sibanyoni - 484647	TC1
10303	I	Doors Open Train Line Dev2/82 = Coupler pin 029		OK		Sizwe Sibanyoni - 484647	TC1
10304	R	Read Defined Variable [NI] Dev2/82 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10305	I	ERTMS Auth Left Train Line Dev4/86 = END2 90XP15 pin 44		OK		Sizwe Sibanyoni - 484647	TC1
10306	A	Force [NI] Dev4/86 = 0.0		OK		Sizwe Sibanyoni - 484647	TC1
10307	A	Release [TT] (MPU1)lo_dor_tc1distertmsauthleftr1		OK		Sizwe Sibanyoni - 484647	TC1
10308	A	Release [TT] (MPU1)lo_dor_tc1distertmsauthleftr2		OK		Sizwe Sibanyoni - 484647	TC1
10309	I	Door 2		OK		Sizwe Sibanyoni - 484647	TC1
10310	I	ERTMS Auth Right Train Line Dev4/87 = END2 90XP15 pin 47		OK		Sizwe Sibanyoni - 484647	TC1
10311	A	Force [NI] Dev4/87 = 1.0		OK		Sizwe Sibanyoni - 484647	TC1
10312	A	Force [TT] (MPU1)lo_dor_tc1distertmsauthrightr1 = 1.0		OK		Sizwe Sibanyoni - 484647	TC1
10313	A	Force [TT] (MPU1)lo_dor_tc1distertmsauthrightr2 = 1.0		OK		Sizwe Sibanyoni - 484647	TC1

10314	A	Force [TT] (MPU1)lo_dor_tc1opendoorright = 1.0		OK		Sizwe Sibanyoni - 484647	TC1
10315	R	Check if ALL right doors open in 3 sec (+1/-0)		OK		Sizwe Sibanyoni - 484647	TC1
10316	R	Check that the GREEN LEDS on both sides of the door blink while the door opens. [Safety Request: Prasa8-05]		OK		Sizwe Sibanyoni - 484647	TC1
10317	R	Once completely opened, check that the LEDS are steady RED		OK		Sizwe Sibanyoni - 484647	TC1
10318	I	Doors Open Train Line Dev2/82 = Coupler pin 029		OK		Sizwe Sibanyoni - 484647	TC1
10319	R	Read Defined Variable [NI] Dev2/82 = 1.0		OK	1	Sizwe Sibanyoni - 484647	TC1
10320	I	Door Opening Gap		OK		Sizwe Sibanyoni - 484647	TC1
10321	A	Measure the opening gap of the door. (The measurement must be done at the BOTTOM of the door).		OK		Sizwe Sibanyoni - 484647	TC1
10322	R	Door 2 gap Result Min/Max : 1390.00<= x<= 1410.00 (mm)		OK	1398	Sizwe Sibanyoni - 484647	TC1
10323	A	Measure the opening gap of the door. (The measurement must be done at the TOP of the door).		OK		Sizwe Sibanyoni - 484647	TC1
10324	R	Door 2 gap Result Min/Max : 1390.00<= x<= 1410.00 (mm)		OK	1408	Sizwe Sibanyoni - 484647	TC1
10325	A	Measure the opening gap of the door. (The measurement must be done in the MIDDLE of the door).		OK		Sizwe Sibanyoni - 484647	TC1
10326	R	Door 2 gap Result Min/Max : 1390.00<= x<= 1410.00 (mm)		OK	1402	Sizwe Sibanyoni - 484647	TC1
10327	I	Door 4		OK		Sizwe Sibanyoni - 484647	TC1
10328	I	Door Opening Gap		OK		Sizwe Sibanyoni - 484647	TC1
10329	A	Measure the opening gap of the door. (The measurement must be done at the BOTTOM of the door).		OK		Sizwe Sibanyoni - 484647	TC1
10330	R	Door 4 gap Result Min/Max : 1390.00<= x<= 1410.00 (mm)		OK	1399	Sizwe Sibanyoni - 484647	TC1
10331	A	Measure the opening gap of the door. (The measurement must be done at the		OK		Sizwe Sibanyoni - 484647	TC1

		TOP of the door).					
10332	R	Door 4 gap Result Min/Max : 1390.00<= x<= 1410.00 (mm)		OK	1410	Sizwe Sibanyoni - 484647	TC1
10333	A	Measure the opening gap of the door. (The measurement must be done in the MIDDLE of the door).		OK		Sizwe Sibanyoni - 484647	TC1
10334	R	Door 4 gap Result Min/Max : 1390.00<= x<= 1410.00 (mm)		OK	1408	Sizwe Sibanyoni - 484647	TC1
10335	I	Door 6		OK		Sizwe Sibanyoni - 484647	TC1
10336	I	Door Opening Gap		OK		Sizwe Sibanyoni - 484647	TC1
10337	A	Measure the opening gap of the door. (The measurement must be done at the BOTTOM of the door).		OK		Sizwe Sibanyoni - 484647	TC1
10338	R	Door 6 gap Result Min/Max : 1390.00<= x<= 1410.00 (mm)		OK	1398	Sizwe Sibanyoni - 484647	TC1
10339	A	Measure the opening gap of the door. (The measurement must be done at the TOP of the door).		OK		Sizwe Sibanyoni - 484647	TC1
10340	R	Door 6 gap Result Min/Max : 1390.00<= x<= 1410.00 (mm)		OK	1404	Sizwe Sibanyoni - 484647	TC1
10341	A	Measure the opening gap of the door. (The measurement must be done in the MIDDLE of the door).		OK		Sizwe Sibanyoni - 484647	TC1
10342	R	Door 6 gap Result Min/Max : 1390.00<= x<= 1410.00 (mm)		OK	1400	Sizwe Sibanyoni - 484647	TC1
10343	I	Obstacle Detection		OK		Sizwe Sibanyoni - 484647	TC1
10344	I	ERTMS Auth Left Train Line Dev4/86 = END2 90XP15 pin 44		OK		Sizwe Sibanyoni - 484647	TC1
10345	A	Force [NI] Dev4/86 = 1.0		OK		Sizwe Sibanyoni - 484647	TC1
10346	A	Force [TT] (MPU1)lo_dor_tc1distertmsauthleftr1 = 1.0		OK		Sizwe Sibanyoni - 484647	TC1
10347	A	Force [TT] (MPU1)lo_dor_tc1distertmsauthleftr2 = 1.0		OK		Sizwe Sibanyoni - 484647	TC1
10348	A	Force [TT] (MPU1)lo_dor_tc1opendoorleft = 1.0		OK		Sizwe Sibanyoni - 484647	TC1

10349	A	Position an obstacle on the floor in the centre of each and every door closing line		OK		Sizwe Sibanyoni - 484647	TC1
10350	A	Release [TT] (MPU1)lo_dor_tc1opendoorright		OK		Sizwe Sibanyoni - 484647	TC1
10351	A	Release [TT] (MPU1)lo_dor_tc1opendoorleft		OK		Sizwe Sibanyoni - 484647	TC1
10352	R	All doors will hit the obstacles, reopen and try to close again 3 times. On the third attempt ALL doors will stop and stand ajar - free to be opened manually		OK		Sizwe Sibanyoni - 484647	TC1
10353	A	Force [TT] (MPU1)lo_dor_tc1opendoorright = 1.0		OK		Sizwe Sibanyoni - 484647	TC1
10354	A	Force [TT] (MPU1)lo_dor_tc1opendoorleft = 1.0		OK		Sizwe Sibanyoni - 484647	TC1
10355	A	Remove ALL the obstacles		OK		Sizwe Sibanyoni - 484647	TC1
10356	A	Release [TT] (MPU1)lo_dor_tc1opendoorright		OK		Sizwe Sibanyoni - 484647	TC1
10357	A	Release [TT] (MPU1)lo_dor_tc1opendoorleft		OK		Sizwe Sibanyoni - 484647	TC1
10358	R	Check if ALL doors close in 3 sec (+1/-0)		OK		Sizwe Sibanyoni - 484647	TC1
10359	R	Check that the RED LEDS on both sides of the door blink while the door closes [Safety Request: Prasa8-05]		OK		Sizwe Sibanyoni - 484647	TC1
10360	I	Doors Open Train Line Dev2/82 = Coupler pin 029		OK		Sizwe Sibanyoni - 484647	TC1
10361	R	Read Defined Variable [NI] Dev2/82 = 0.0		OK	0	Sizwe Sibanyoni - 484647	TC1
10362	I	ERTMS Auth Train Line Dev4/87 = END2 90XP15 pin 47 (Right) Dev4/86 = END2 90XP15 pin 44 (Left)		OK		Sizwe Sibanyoni - 484647	TC1
10363	A	Force [NI] Dev4/86 = 0.0		OK		Sizwe Sibanyoni - 484647	TC1
10364	A	Force [NI] Dev4/87 = 0.0		OK		Sizwe Sibanyoni - 484647	TC1
10365	I	Safety Doors Loop Train Line Dev4/89 = END2 90XP15 pin 96		OK		Sizwe Sibanyoni - 484647	TC1
10366	A	Force [NI] Dev4/89 = 0.0		OK		Sizwe Sibanyoni - 484647	TC1

10367	A	Release [TT] (MPU1)lo_dor_tc1distertmsauthrightr1		OK		Sizwe Sibanyoni - 484647	TC1
10368	A	Release [TT] (MPU1)lo_dor_tc1distertmsauthrightr2		OK		Sizwe Sibanyoni - 484647	TC1
10369	A	Release [TT] (MPU1)lo_dor_tc1distertmsauthleftr1		OK		Sizwe Sibanyoni - 484647	TC1
10370	A	Release [TT] (MPU1)lo_dor_tc1distertmsauthleftr2		OK		Sizwe Sibanyoni - 484647	TC1
10371	I	V<3km/h Train Line Dev4/39 = END2 90XP15 pin 29		OK		Sizwe Sibanyoni - 484647	TC1
10372	A	Force [NI] Dev4/39 = 0.0		OK		Sizwe Sibanyoni - 484647	TC1
10373	A	Switch Door Authorization Selector 50S7 to DRIVER		OK		Sizwe Sibanyoni - 484647	TC1
10374	I	END OF TEST		OK		Sizwe Sibanyoni - 484647	TC1

Section 15 – HVAC Air Conditioning

15.1 Instructions list

15.1.1 057_HVA-HVAC_TK

I - Information A - Action R - Result NE - Not Executed

N°	Type	Instruction	File	Result status	Result value	Operator	Vehicle
10001	I	HVA_057 Air Conditioning		NE			TC1
10002	I	Initial conditions		NE			TC1
10003	A	Car Should be Prepared		NE			TC1
10004	I	Power Supply		NE			TC1
10005	A	Close Circuit Breaker 57Q1		NE			TC1
10006	A	Close Circuit Breaker 57Q2		NE			TC1
10007	I	HVAC Electronic Power Supply		NE			TC1
10008	R	The HVAC electronic is ON		NE			TC1
10009	I	Software Upload		NE			TC1
10010	A	Close Circuit Breaker F1 on the HVAC Panel		NE			TC1
10011	A	Turn the control switch to AUTO position on the HVAC Panel		NE			TC1
10012	I	Follow the procedure in the document below to upload software onto the HVAC electronic		NE			TC1
10013	A			NE			TC1
10014	I	Checking 400Vac		NE			TC1
10015	A	Ensure that the 400Vac Shore Supply is connected to the vehicle, else connect it		NE			TC1
10016	A	Disconnect connector 57XP4_X5 and use a multimeter to measure 400Vac between phases a1, a2 and b1		NE			TC1
10017	R	400Vac is measured between each of the phases		NE			TC1
10018	A	On the same connector, with a phasemeter, check the correct Phase Rotation between L1- Phase a1, L2-		NE			TC1

		Phase a2, L3- Phase b1					
10019	R	The phase rotation is correct between all three phases		NE			TC1
10020	A	Normalize connector 57XP4__X5		NE			TC1
10021	I	HVAC 50% restriction		NE			TC1
10022	A	Force [TT] NRG__HvacTc150Cmd = 0		NE			TC1
10023	A	Force [TT] NRG__HvacTc1Cab50Cmd = 0		NE			TC1
10024	I	HVAC inhib		NE			TC1
10025	A	Force [TT] (MPU1)Io__hva__tc1hvacinhibr1___1 = 1		NE			TC1
10026	A	Force [TT] (MPU1)Io__hva__tc1hvacinhibr2___1 = 1		NE			TC1
10027	R	HVAC unit turns ON and starts to work		NE			TC1
10028	I	Emergency Ventilation		NE			TC1
10029	A	Force [TT] (MPU1)Io__hva__tc1emergventil___1 = 1		NE			TC1
10030	A	All saloon HVAC units are in ventilation mode, not heating/cooling		NE			TC1
10031	A	Connect the laptop to the HVAC maintenance software using HCU Finder and verify that main mode changed to Emergency		NE			TC1
10032	A	Release [TT] (MPU1)Io__hva__tc1emergventil___1		NE			TC1
10033	I	Forced Mode (Saloon HVAC)		NE			TC1
10034	I	In the maintenance software, select the 'Forced' tab, and use the "Required working mode" drop down box to force the following modes:		NE			TC1
10035	A	For the next sections, walk through the whole car and physically check (feel) that the HVAC is functioning as desired		NE			TC1
10036	A	Force Ventilation mode on the Saloon HVAC		NE			TC1

10037	I	Ventilation mode		NE			TC1
10038	R	All saloon HVAC units work in Ventilation mode. Not heating/cooling		NE			TC1
10039	I	Cooling Mode		NE			TC1
10040	A	Force Cooling mode on the Saloon HVAC		NE			TC1
10041	R	All saloon HVAC units work in Cooling mode		NE			TC1
10042	I	Heating Mode		NE			TC1
10043	A	Force Heating mode on the Saloon HVAC		NE			TC1
10044	R	All saloon HVAC units work in Heating mode		NE			TC1
10045	I	Automatic Mode		NE			TC1
10046	A	Force Self-Test on the Saloon HVAC		NE			TC1
10047	R	All saloon HVAC units work according to the mode described in the "Actual working mode"		NE			TC1
10048	R	The Exhaust fans are Turned OFF		NE			TC1
10049	I	Cabin Footrest Heater Test		NE			TC1
10050	I	Use the tools list to record the serial number of the Infrared Thermometer that will be used in the next section		NE			TC1
10051	A	Close Circuit Breaker 57Q3		NE			TC1
10052	R	The Foot Heater pushbutton white lamp 57S3 is OFF		NE			TC1
10053	R	Foot Heater is Off (UDM)		NE			TC1
10054	A	Press the Foot Heater Pushbutton 57S3		NE			TC1
10055	R	The Foot Heater pushbutton white lamp 57S3 is ON		NE			TC1
10056	R	Read Defined Variable [TT] (MPU1)li_hva_tc1footheaterfault___1 = 0		NE			TC1
10057	R	Foot Heater is ON (allow some time for it to heat up and confirm with Infrared		NE			TC1

		Thermometer that it is heating up)					
10058	A	Once verified working, press the Foot Heater Pushbutton 57S3		NE			TC1
10059	R	The Foot Heater pushbutton white lamp 57S3 is OFF		NE			TC1
10060	R	Read Defined Variable [TT] (MPU1)li_hva_tc1footheaterfault___1 = 0		NE			TC1
10061	R	Foot Heater is OFF (allow some time for it to cool down and confirm with Infrared Thermometer that it is cooling down)		NE			TC1
10062	A	Check that the Footrest can go up by slightly pressing the adjusting pedal.		NE			TC1
10063	R	The Footrest is adjustable, it can go up.		NE			TC1
10064	A	Check that the Footrest can go down by pressing the adjusting pedal. Ensure the other foot applies force on the Footrest		NE			TC1
10065	R	The Footrest is adjustable, it can go down.		NE			TC1
10066	I	Forced Mode (Cabin HVAC)		NE			TC1
10067	I	In the maintenance software, select the 'Forced' tab, and use the "Required working mode" drop down box to force the following modes:		NE			TC1
10068	I	Ventilation Mode		NE			TC1
10069	A	Force Ventilation mode on the Cab HVAC		NE			TC1
10070	R	The Cab HVAC works in Ventilation mode. Not heating/cooling		NE			TC1
10071	I	Cooling Mode		NE			TC1
10072	A	Force Cooling mode on the Cab HVAC		NE			TC1
10073	R	The Cab HVAC works in Cooling mode		NE			TC1
10074	I	Heating Mode		NE			TC1
10075	A	Force Heating mode on the Cab HVAC		NE			TC1
10076	R	The Cab HVAC works in Heating mode		NE			TC1

10077	I	Automatic Mode		NE			TC1
10078	A	Force Automatic mode on the Cab HVAC		NE			TC1
10079	R	The Cab HVAC works in Automatic mode - according to the mode described in the "Actual working mode"		NE			TC1
10080	I	HVAC Faults		NE			TC1
10081	A	In the maintenance software, select the "Alarms / Warnings" tab		NE			TC1
10082	A	Ensure there are no active faults on the HVAC		NE			TC1
10083	R	No active faults identified on the HVAC unit		NE			TC1
10084	I	Air Flow Measure		NE			TC1
10085	A	Check that the windshield air outlet is open		NE			TC1
10086	A	On the left side diffuser, put the anemometer in the middle of the air diffuser directly in contact with the grill		NE			TC1
10087	A	Record average speed over 30 s		NE			TC1
10088	R	Average air speed Read Undefined Value : x ()		NE			TC1
10089	A	On the right diffuser, put the anemometer in the middle of the air diffuser directly in contact with the grill		NE			TC1
10090	A	Record average speed over 30 s		NE			TC1
10091	R	Average air speed Read Undefined Value : x ()		NE			TC1
10092	A	Compare the two recorded air speeds, left and right. The values should be within 15% of each other. If the difference is greater than 15%, check if the flexible duct going to the windshield diffuser is not loose or squeezed.		NE			TC1
10093	R	The difference between left and right air flow is less than 15%		NE			TC1
10094	A	Release [TT] (MPU1)lo_hva_tc1hvacinhibr1__1		NE			TC1

10095	A	Release [TT] (MPU1)lo_hva_tc1hvacinhibr2__1		NE			TC1
10096	A	Release [TT] NRG_HvacTc150Cmd		NE			TC1
10097	A	Release [TT] NRG_HvacTc1Cab50Cmd		NE			TC1
10098	I	End of Test		NE			TC1

15.1.2 057_HVA_SME-HVAC_SME

I - Information A - Action R - Result NE - Not Executed

N°	Type	Instruction	File	Result status	Result value	Operator	Vehicle
10001	I	HVA_057 Air Conditioning		OK		Gcobani Baliso - 480570	TC1
10002	I	Initial conditions		OK		Gcobani Baliso - 480570	TC1
10003	A	Car Should be Prepared with CVS running and 400V ac available in the car		OK		Gcobani Baliso - 480570	TC1
10004	I	HVAC Electronic Power Supply		OK		Gcobani Baliso - 480570	TC1
10005	A	Close Circuit Breaker 13Q1 and 13Q5		OK		Gcobani Baliso - 480570	TC1
10006	I	Checking 400Vac		OK		Gcobani Baliso - 480570	TC1
10007	A	Close Circuit Breaker 57Q1		OK		Gcobani Baliso - 480570	TC1
10008	A	Disconnect connector 57XP4_X5 and Measure 400Vac between all 3 phases which are a1, a2 and b1		OK		Gcobani Baliso - 480570	TC1
10009	R	400Vac measured between all phases		OK		Gcobani Baliso - 480570	TC1
10010	A	On same connector 54XP4_X5, with a phasemeter, check the correct Phase Rotation between points a1- Phase L1, a2- Phase L2 and b1- Phase L3.		OK		Gcobani Baliso - 480570	TC1
10011	R	The phase rotation is correct between all three phases		OK		Gcobani Baliso - 480570	TC1
10012	A	Normalize connector 57XP4_X5		OK		Gcobani Baliso - 480570	TC1
10013	I	HVAC controller power supply		OK		Gcobani Baliso - 480570	TC1
10014	A	Close Circuit Breaker 57Q2		OK		Gcobani Baliso - 480570	TC1
10015	A	Allow the HVAC to initialize and check on the DDU if the HVAC is online		OK		Gcobani Baliso - 480570	TC1
10016	R	HVAC unit turns ON and starts to work		OK		Gcobani Baliso - 480570	TC1
10017	I	HVAC inhib		OK		Gcobani Baliso - 480570	TC1
10018	A	Force [TT] (MPU1)lo_hva_tc1hvacinhibr1___1 = 1.0		OK		Gcobani Baliso - 480570	TC1

10019	A	Force [TT] (MPU1)lo_hva_tc1hvacinhibr2__1 = 1.0		OK		Gcobani Baliso - 480570	TC1
10020	I	HVAC 50% restriction		OK		Gcobani Baliso - 480570	TC1
10021	A	Force [TT] NRG_HvacTc150Cmd = 0		OK		Gcobani Baliso - 480570	TC1
10022	A	Force [TT] NRG_HvacTc1Cab50Cmd = 0		OK		Gcobani Baliso - 480570	TC1
10023	I	Saloon HVAC		OK		Gcobani Baliso - 480570	TC1
10024	I	HVAC web portal		OK		Gcobani Baliso - 480570	TC1
10025	A	The attached document is a procedure on how to navigate around the maintenance software.		OK		Gcobani Baliso - 480570	TC1
10026	I	Connect the laptop to the HVAC maintenance software using web browser. Enter the following IP address on the web browser 10.136.xxx.27 xxx represents the train number Login: maint Password: maint		OK		Gcobani Baliso - 480570	TC1
10027	R	On status tab, Active mode is off for both cab and saloon		OK		Gcobani Baliso - 480570	TC1
10028	A	Go to Alarms tab and clear all the alarms for saloon and cabin		OK		Gcobani Baliso - 480570	TC1
10029	I	Full "Self test" saloon		OK		Gcobani Baliso - 480570	TC1
10030	I	For the following tests make sure on the webHMI tab you change contoller to be controlled by webHMI and not MPU		OK		Gcobani Baliso - 480570	TC1
10031	A	Before running the full test, please click on reset test to reset the previous results.		OK		Gcobani Baliso - 480570	TC1
10032	A	Select Full-Test on the Saloon HVAC		OK		Gcobani Baliso - 480570	TC1
10033	R	All saloon HVAC units work according to the mode described in the "ACTIVE MODE" on the status tab		OK		Gcobani Baliso - 480570	TC1
10034	R	When the test is complete, please check if the status is showing as "TEST PASS" and the test took 3 mins +/- 2 seconds for each mode.		OK		Gcobani Baliso - 480570	TC1
10035	I	Forced Mode (Saloon HVAC)		OK		Gcobani Baliso - 480570	TC1
10036	I	During all tests Walk through the whole car and physically check (feel) that the		OK		Gcobani Baliso - 480570	TC1

		HVAC is functioning as desired					
10037	I	Go to maintenance tab to force the following modes		OK		Gcobani Baliso - 480570	TC1
10038	I	Cooling Mode		OK		Gcobani Baliso - 480570	TC1
10039	A	Select forced Cooling mode on the Saloon HVAC and let it run for 5 mins		OK		Gcobani Baliso - 480570	TC1
10040	R	All HVAC units are cooling		OK		Gcobani Baliso - 480570	TC1
10041	I	Heating Mode		OK		Gcobani Baliso - 480570	TC1
10042	A	Select forced Heating mode on the Saloon HVAC and let it run for 5 mins		OK		Gcobani Baliso - 480570	TC1
10043	R	All HVAC units are heating		OK		Gcobani Baliso - 480570	TC1
10044	I	Cabin Footrest Heater Test		OK		Gcobani Baliso - 480570	TC1
10045	I	Use the tools list to record the serial number of the Infrared Thermometer that will be used in the next section		OK		Gcobani Baliso - 480570	TC1
10046	A	Close Circuit Breaker 57Q3		OK		Gcobani Baliso - 480570	TC1
10047	R	The Foot Heater pushbutton white lamp 57S3 is OFF		OK		Gcobani Baliso - 480570	TC1
10048	R	Foot Heater is Off (UDM)		OK		Gcobani Baliso - 480570	TC1
10049	A	Press the Foot Heater Pushbutton 57S3		OK		Gcobani Baliso - 480570	TC1
10050	R	The Foot Heater pushbutton white lamp 57S3 is ON		OK		Gcobani Baliso - 480570	TC1
10051	R	Read Defined Variable [TT] (MPU1)li_hva_tc1footheaterfault___1 = 0.0		OK	0	Gcobani Baliso - 480570	TC1
10052	R	Foot Heater is ON (allow some time for it to heat up and confirm with Infrared Thermometer that it is heating up)		OK		Gcobani Baliso - 480570	TC1
10053	A	Once verified working, press the Foot Heater Pushbutton 57S3		OK		Gcobani Baliso - 480570	TC1
10054	R	The Foot Heater pushbutton white lamp 57S3 is OFF		OK		Gcobani Baliso - 480570	TC1
10055	R	Read Defined Variable [TT]		OK	0	Gcobani Baliso - 480570	TC1

		(MPU1)li_hva_tc1footheaterfault___1 = 0.0					
10056	R	Foot Heater is OFF (allow some time for it to cool down and confirm with Infrared Thermometer that it is cooling down)		OK		Gcobani Baliso - 480570	TC1
10057	A	Check that the Footrest can go up by slightly pressing the adjusting pedal.		OK		Gcobani Baliso - 480570	TC1
10058	R	The Footrest is adjustable, it can go up.		OK		Gcobani Baliso - 480570	TC1
10059	A	Check that the Footrest can go down by pressing the adjusting pedal. Ensure the other foot applies force on the Footrest		OK		Gcobani Baliso - 480570	TC1
10060	R	The Footrest is adjustable, it can go down.		OK		Gcobani Baliso - 480570	TC1
10061	I	Cab Hvac		OK		Gcobani Baliso - 480570	TC1
10062	I	Full "Self test" Cab		OK		Gcobani Baliso - 480570	TC1
10063	A	Before running the full test, please click on reset test to reset the previous results.		OK		Gcobani Baliso - 480570	TC1
10064	A	Select Full test on the Cab HVAC		OK		Gcobani Baliso - 480570	TC1
10065	R	The cab HVAC works according to the mode described in the "ACTIVE MODE" on the status tab		OK		Gcobani Baliso - 480570	TC1
10066	R	When the test is complete, please check if the status is showing as "TEST PASS" and the test took 3 mins +/- 2 seconds for each mode.		OK		Gcobani Baliso - 480570	TC1
10067	I	Forced Mode (Cabin HVAC)		OK		Gcobani Baliso - 480570	TC1
10068	I	For the coming test, check(feel) that the air coming through the supply air duct in the cabin is as desired "VENT/COOl or HEAT"		OK		Gcobani Baliso - 480570	TC1
10069	I	Go to maintenance tab to force the following modes		OK		Gcobani Baliso - 480570	TC1
10070	I	Cooling Mode		OK		Gcobani Baliso - 480570	TC1
10071	A	Select forced Cooling mode on the Cabin HVAC and let it run for 5 mins		OK		Gcobani Baliso - 480570	TC1
10072	R	All HVAC ducts in the cab are cooling		OK		Gcobani Baliso - 480570	TC1
10073	I	Heating Mode		OK		Gcobani Baliso - 480570	TC1

10074	R	Select forced heating mode on the Cabin HVAC and let it run for 5 mins		OK		Gcobani Baliso - 480570	TC1
10075	R	All HVAC ducts in the cab are heating		OK		Gcobani Baliso - 480570	TC1
10076	I	HVAC Faults		OK		Gcobani Baliso - 480570	TC1
10077	A	In the maintenance software, select the "Alarms" tab		OK		Gcobani Baliso - 480570	TC1
10078	A	Ensure there are no active faults on the HVAC for Cabin and Saloon. Use the highlighted drop down to navigate between saloon and cabin.		OK		Gcobani Baliso - 480570	TC1
10079	R	No active faults identified on the HVAC unit		OK		Gcobani Baliso - 480570	TC1
10080	I	Air Flow Measure		OK		Gcobani Baliso - 480570	TC1
10081	A	Turn the cab ventilation control switch 57S1 to high speed position		OK		Gcobani Baliso - 480570	TC1
10082	A	Check that the windshield air outlet is open		OK		Gcobani Baliso - 480570	TC1
10083	A	On the left side diffuser, put an anemometer in the middle of the air diffuser directly in contact with the grill		OK		Gcobani Baliso - 480570	TC1
10084	A	Record the average air speed over 30 s		OK		Gcobani Baliso - 480570	TC1
10085	R	Average air speed Read Undefined Value : x (m/s)		OK	5.37	Gcobani Baliso - 480570	TC1
10086	A	On the right side diffuser, put the anemometer in the middle of air diffuser directly in contact with the grill		OK		Gcobani Baliso - 480570	TC1
10087	A	Record the average air speed over 30s		OK		Gcobani Baliso - 480570	TC1
10088	R	Average air speed Read Undefined Value : x (m/s)		OK	6.45	Gcobani Baliso - 480570	TC1
10089	A	Compare the two recorded air speeds, left and right. the values should be within 15% of each other. If the difference is greater than 15%, check that the flexible duct going to windshield diffuser is not squeezed.		OK		Gcobani Baliso - 480570	TC1
10090	R	Difference between left-right air flow is within 15%		OK		Gcobani Baliso - 480570	TC1

10091	A	Turn the Cab Ventilation Control Switch 57S1 to OFF position		OK		Gcobani Baliso - 480570	TC1
10092	R	Cabin HVAC turned OFF		OK		Gcobani Baliso - 480570	TC1
10093	I	Variable release		OK		Gcobani Baliso - 480570	TC1
10094	A	Release [TT] (MPU1)lo_hva_tc1hvacinhibr1___1		OK		Gcobani Baliso - 480570	TC1
10095	A	Release [TT] (MPU1)lo_hva_tc1hvacinhibr2___1		OK		Gcobani Baliso - 480570	TC1
10096	A	Release [TT] NRG_HvacTc150Cmd		OK		Gcobani Baliso - 480570	TC1
10097	A	Release [TT] NRG_HvacTc1Cab50Cmd		OK		Gcobani Baliso - 480570	TC1
10098	I	End of test		OK		Gcobani Baliso - 480570	TC1

Section 16 – Fire Protection

16.1 Instructions list

16.1.1 067_FSD-Fire Protection

I - Information A - Action R - Result NE - Not Executed

N°	Type	Instruction	File	Result status	Result value	Operator	Vehicle
10001	I	Fire Protection System (SPP=067)		OK		Anthonia Mabowa - 494131	TC1
10002	I	Initial conditions		OK		Anthonia Mabowa - 494131	TC1
10003	I	Car Should be Prepared		OK		Anthonia Mabowa - 494131	TC1
10004	I	Power Supply		OK		Anthonia Mabowa - 494131	TC1
10005	A	Turn Driver's Master Key 30A1.S1 to Active Cabin Position		OK		Anthonia Mabowa - 494131	TC1
10006	A	Close Circuit Breaker 67Q1		OK		Anthonia Mabowa - 494131	TC1
10007	R	Check that the Control Fire Detection Unit 67A1 is ON		OK		Anthonia Mabowa - 494131	TC1
10008	I	Fire Detection Control and Reset		OK		Anthonia Mabowa - 494131	TC1
10009	I	Fire Detection Train Lines Dev4/76 = END2 90XP14 pin 21 Dev2/7 = END1 Coupler pin 008 Dev2/33 = END1 Coupler pin 108		OK		Anthonia Mabowa - 494131	TC1
10010	A	Force [NI] Dev4/76 = 1.0		OK		Anthonia Mabowa - 494131	TC1
10011	R	Read Defined Variable [NI] Dev2/7 = 1.0		OK	1	Anthonia Mabowa - 494131	TC1
10012	R	Read Defined Variable [NI] Dev2/33 = 1.0		OK	1	Anthonia Mabowa - 494131	TC1
10013	A	Check on the Alarm Module that the fire alarm 67H1 is illuminated		OK		Anthonia Mabowa - 494131	TC1
10014	I	Fire Detection Train Lines Dev4/76 = END2 90XP14 pin 21 Dev2/7 = END1 Coupler pin 008 Dev2/33 = END1 Coupler pin 108		OK		Anthonia Mabowa - 494131	TC1

10015	A	Force [NI] Dev4/76 = 0.0		OK		Anthonia Mabowa - 494131	TC1
10016	R	Read Defined Variable [NI] Dev2/7 = 0.0		OK	0	Anthonia Mabowa - 494131	TC1
10017	R	Read Defined Variable [NI] Dev2/33 = 0.0		OK	0	Anthonia Mabowa - 494131	TC1
10018	R	The Fire Alarm Reset Pushbutton lamp 67H1 is OFF		OK		Anthonia Mabowa - 494131	TC1
10019	I	Control Fire Detection Unit Configuration		OK		Anthonia Mabowa - 494131	TC1
10020	A	Open Circuit Breaker 67Q1		OK		Anthonia Mabowa - 494131	TC1
10021	A	Place a bridge piece between: From: [67A1(local: +LV2 connector -67XP1_C2 (pin 3))] to: [-67A1 (local: +LV2 connector -67XP1_C2 pin 1)]		OK		Anthonia Mabowa - 494131	TC1
10022	A	Place a bridge piece between: From: [67A1(local: +LV2 connector -67XP1_C2 (pin 6))] to: [-67A1 (local: +LV2 connector -67XP1_C2 pin 4)]		OK		Anthonia Mabowa - 494131	TC1
10023	A	Check the continuity between the two provided points of the line below		OK		Anthonia Mabowa - 494131	TC1
10024	A	From: [(local: +END2 connector -90XP13.b (pin 4))] to: [(local: +END2 connector -90XP13.a (pin 7))]		OK		Anthonia Mabowa - 494131	TC1
10025	A	From: [(local: +END2 connector -90XP13.b (pin 5))] to: [(local: +END2 connector -90XP13.a (pin 8))]		OK		Anthonia Mabowa - 494131	TC1
10026	A	Remove a bridge piece between: From: [67A1(local: +LV2 connector -67XP1_C2 (pin 3+))] to: [-67A1 (local: +LV2 connector -67XP1_C2 pin 1)]		OK		Anthonia Mabowa - 494131	TC1
10027	A	Remove a bridge piece between: From: [67A1(local: +LV2 connector -67XP1_C2(pin 6))] to: [-67A1 (local: +LV2 connector -67XP1_C2 pin 4)]		OK		Anthonia Mabowa - 494131	TC1
10028	I	END OF TEST		OK		Anthonia Mabowa - 494131	TC1

Section 17 – Driving Command

17.1 Instructions list

17.1.1 030_DRC-Driving Command

I - Information A - Action R - Result NE - Not Executed

N°	Type	Instruction	File	Result status	Result value	Operator	Vehicle
10001	I	Driving Command (SPP=30/31)		OK		Tebogo Mtombeni - 529938	TC1
10002	I	Initial conditions		OK		Tebogo Mtombeni - 529938	TC1
10003	I	Cabin should be active		OK		Tebogo Mtombeni - 529938	TC1
10004	A	Ensure all the doors are closed		OK		Tebogo Mtombeni - 529938	TC1
10005	A	Ensure that there is air connected to the main pipe		OK		Tebogo Mtombeni - 529938	TC1
10006	A	Force [TT] (BCU2)li_mp_ps_ok = 1.0		OK		Tebogo Mtombeni - 529938	TC1
10007	I	Circuit Breakers		OK		Tebogo Mtombeni - 529938	TC1
10008	A	Close Circuit Breaker "30Q1"		OK		Tebogo Mtombeni - 529938	TC1
10009	A	Close Circuit Breaker "30Q2"		OK		Tebogo Mtombeni - 529938	TC1
10010	A	Close Circuit Breaker "30Q3"		OK		Tebogo Mtombeni - 529938	TC1
10011	A	Close Circuit Breaker "31Q1"		OK		Tebogo Mtombeni - 529938	TC1
10012	I	Direction Selector Switch		OK		Tebogo Mtombeni - 529938	TC1
10013	I	Set the Running Direction Switch 30A1.S2 to "Neutral" position		OK		Tebogo Mtombeni - 529938	TC1
10014	R	Read Defined Variable [TT] (MPU1)li_drc_tc1dsnozeror1 = 0.0		OK	0	Tebogo Mtombeni - 529938	TC1
10015	R	Read Defined Variable [TT] (MPU1)li_drc_tc1dsnozeror2 = 0.0		OK	0	Tebogo Mtombeni - 529938	TC1
10016	I	Set the Running Direction Switch 30A1.S2 to "Reverse" position		OK		Tebogo Mtombeni - 529938	TC1
10017	R	Read Defined Variable [TT] (MPU1)li_drc_tc1dsnozeror1 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10018	R	Read Defined Variable [TT] (MPU1)li_drc_tc1dsnozeror2 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10019	R	Read Defined Variable [TT] (MPU1)li_drc_tc1dsreverser1 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1

10020	R	Read Defined Variable [TT] (MPU1)li_drc_tc1dsreverser2 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10021	I	Reverse Train lines Dev2/28 = coupler pin 011 Dev2/29 = coupler pin 132 Dev5/78 = END2 90XP15 pin 30		OK		Tebogo Mtombeni - 529938	TC1
10022	R	Read Defined Variable [NI] Dev2/28 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10023	R	Read Defined Variable [NI] Dev2/29 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10024	R	Read Defined Variable [NI] Dev5/78 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10025	I	Set the Running Direction Switch 30A1.S2 to "Forward" position		OK		Tebogo Mtombeni - 529938	TC1
10026	R	Read Defined Variable [TT] (MPU1)li_drc_tc1dsnozeror1 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10027	R	Read Defined Variable [TT] (MPU1)li_drc_tc1dsreverser1 = 0.0		OK	0	Tebogo Mtombeni - 529938	TC1
10028	R	Read Defined Variable [TT] (MPU1)li_drc_tc1dsreverser2 = 0.0		OK	0	Tebogo Mtombeni - 529938	TC1
10029	I	Reverse Train lines Dev2/28 = coupler pin 011 Dev2/29 = coupler pin 132 Dev5/78 = END2 90XP15 pin 30		OK		Tebogo Mtombeni - 529938	TC1
10030	R	Read Defined Variable [NI] Dev2/28 = 0.0		OK	0	Tebogo Mtombeni - 529938	TC1
10031	R	Read Defined Variable [NI] Dev2/29 = 0.0		OK	0	Tebogo Mtombeni - 529938	TC1
10032	R	Read Defined Variable [NI] Dev5/78 = 0.0		OK	0	Tebogo Mtombeni - 529938	TC1
10033	I	Forward Train lines Dev2/26 = coupler pin 032 Dev2/27 = coupler pin 111 Dev5/35 = END2 90XP15 pin 25		OK		Tebogo Mtombeni - 529938	TC1
10034	R	Read Defined Variable [NI] Dev2/26 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10035	R	Read Defined Variable [NI] Dev2/27 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10036	R	Read Defined Variable [NI] Dev5/35 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10037	I	Set the Running Direction Switch 30A1.S2 to "Neutral" position		OK		Tebogo Mtombeni - 529938	TC1
10038	I	Forward Train lines Dev2/26 = coupler pin 032 Dev2/27 = coupler pin 111		OK		Tebogo Mtombeni - 529938	TC1

		Dev5/35 = END2 90XP15 pin 25					
10039	R	Read Defined Variable [NI] Dev2/26 = 0.0		OK	0	Tebogo Mtombeni - 529938	TC1
10040	R	Read Defined Variable [NI] Dev2/27 = 0.0		OK	0	Tebogo Mtombeni - 529938	TC1
10041	R	Read Defined Variable [NI] Dev5/35 = 0.0		OK	0	Tebogo Mtombeni - 529938	TC1
10042	R	Read Defined Variable [TT] (MPU1)li_drc_tc1dsnozeror1 = 0.0		OK	0	Tebogo Mtombeni - 529938	TC1
10043	R	Read Defined Variable [TT] (MPU1)li_drc_tc1dsreverser1 = 0.0		OK	0	Tebogo Mtombeni - 529938	TC1
10044	I	Driving Mode		OK		Tebogo Mtombeni - 529938	TC1
10045	A	Turn the Driving Mode Switch 30S1 to "Speed" position		OK		Tebogo Mtombeni - 529938	TC1
10046	R	Read Defined Variable [TT] (MPU1)li_drc_tc1dmodebit1r1 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10047	R	Read Defined Variable [TT] (MPU1)li_drc_tc1dmodebit1r2 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10048	R	Read Defined Variable [TT] (MPU1)li_drc_tc1dmodebit2r1 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10049	R	Read Defined Variable [TT] (MPU1)li_drc_tc1dmodebit2r2 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10050	A	Turn the Driving Mode Switch 30S1 to "Effort" position		OK		Tebogo Mtombeni - 529938	TC1
10051	R	Read Defined Variable [TT] (MPU1)li_drc_tc1dmodebit1r1 = 0.0		OK	0	Tebogo Mtombeni - 529938	TC1
10052	R	Read Defined Variable [TT] (MPU1)li_drc_tc1dmodebit3r1 = 0.0		OK	0	Tebogo Mtombeni - 529938	TC1
10053	R	Read Defined Variable [TT] (MPU1)li_drc_tc1dmodebit2r1 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10054	R	Read Defined Variable [TT] (MPU1)li_drc_tc1dmodebit2r2 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10055	R	Read Defined Variable [TT] (MPU1)li_drc_tc1dmodebit4r1 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10056	R	Read Defined Variable [TT] (MPU1)li_drc_tc1dmodebit4r2 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10057	A	Turn the Driving Mode Switch 30S1 to "Depot" position		OK		Tebogo Mtombeni - 529938	TC1

10058	R	Read Defined Variable [TT] (MPU1)li_drc_tc1dmodebit1r1 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10059	R	Read Defined Variable [TT] (MPU1)li_drc_tc1dmodebit1r2 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10060	R	Read Defined Variable [TT] (MPU1)li_drc_tc1dmodebit2r1 = 0.0		OK	0	Tebogo Mtombeni - 529938	TC1
10061	R	Read Defined Variable [TT] (MPU1)li_drc_tc1dmodebit3r1 = 0.0		OK	0	Tebogo Mtombeni - 529938	TC1
10062	R	Read Defined Variable [TT] (MPU1)li_drc_tc1dmodebit4r1 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10063	R	Read Defined Variable [TT] (MPU1)li_drc_tc1dmodebit4r2 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10064	A	Turn the Driving Mode Switch 30S1 to "Couple/Wash" position		OK		Tebogo Mtombeni - 529938	TC1
10065	R	Read Defined Variable [TT] (MPU1)li_drc_tc1dmodebit1r1 = 0.0		OK	0	Tebogo Mtombeni - 529938	TC1
10066	R	Read Defined Variable [TT] (MPU1)li_drc_tc1dmodebit2r1 = 0.0		OK	0	Tebogo Mtombeni - 529938	TC1
10067	R	Read Defined Variable [TT] (MPU1)li_drc_tc1dmodebit3r1 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10068	R	Read Defined Variable [TT] (MPU1)li_drc_tc1dmodebit3r2 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10069	R	Read Defined Variable [TT] (MPU1)li_drc_tc1dmodebit4r1 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10070	R	Read Defined Variable [TT] (MPU1)li_drc_tc1dmodebit4r2 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10071	I	Reduced Power		OK		Tebogo Mtombeni - 529938	TC1
10072	A	Press and hold the Reduced Power Pushbutton 30S2		OK		Tebogo Mtombeni - 529938	TC1
10073	R	Read Defined Variable [TT] (MPU1)li_drc_tc1reducedpowerr1 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10074	R	Read Defined Variable [TT] (MPU1)li_drc_tc1reducedpowerr2 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10075	A	Release the Reduced Power Pushbutton 30S2		OK		Tebogo Mtombeni - 529938	TC1
10076	R	Read Defined Variable [TT] (MPU1)li_drc_tc1reducedpowerr1 = 0.0		OK	0	Tebogo Mtombeni - 529938	TC1

10077	R	Read Defined Variable [TT] (MPU1)li_drc_tc1reducedpowerr2 = 0.0		OK	0	Tebogo Mtombeni - 529938	TC1
10078	A	Force [TT] (MPU1)lo_drc_tc1reducedlampr1 = 1.0		OK		Tebogo Mtombeni - 529938	TC1
10079	R	Check that the Reduced Power Pushbutton lamp is ON		OK		Tebogo Mtombeni - 529938	TC1
10080	A	Release [TT] (MPU1)lo_drc_tc1reducedlampr1		OK		Tebogo Mtombeni - 529938	TC1
10081	R	Check that the Reduced Power Pushbutton lamp is OFF		OK		Tebogo Mtombeni - 529938	TC1
10082	A	Force [TT] (MPU1)lo_drc_tc1reducedlampr2 = 1.0		OK		Tebogo Mtombeni - 529938	TC1
10083	R	Check that the Reduced Power Pushbutton lamp is ON		OK		Tebogo Mtombeni - 529938	TC1
10084	A	Release [TT] (MPU1)lo_drc_tc1reducedlampr2		OK		Tebogo Mtombeni - 529938	TC1
10085	R	Check that the Reduced Power Pushbutton lamp is OFF		OK		Tebogo Mtombeni - 529938	TC1
10086	I	Master Controller Traction / No Brake		OK		Tebogo Mtombeni - 529938	TC1
10087	I	The Master Controller should be in "OFF" position		OK		Tebogo Mtombeni - 529938	TC1
10088	R	Read Min/Max [TT] (MPU1)ai_drc_tc1mcpositionch1 : 5479<= x <= 6369		OK	5952	Tebogo Mtombeni - 529938	TC1
10089	R	Read Min/Max [TT] (MPU1)ai_drc_tc1mcpositionch2 : 5479<= x <= 6369		OK	6000	Tebogo Mtombeni - 529938	TC1
10090	R	Read Defined Variable [TT] (MPU1)li_drc_tc1mcnocoastr1 = 0.0		OK	0	Tebogo Mtombeni - 529938	TC1
10091	R	Read Defined Variable [TT] (MPU1)li_drc_tc1mcnocoastr2 = 0.0		OK	0	Tebogo Mtombeni - 529938	TC1
10092	I	No Brake Train lines Dev2/32 = coupler pin 039 Dev2/8 = coupler pin 139 Dev5/82 = 90XP15 pin 32		OK		Tebogo Mtombeni - 529938	TC1
10093	R	Read Defined Variable [NI] Dev2/32 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10094	R	Read Defined Variable [NI] Dev5/82 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1

10095	R	Read Defined Variable [NI] Dev2/8 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10096	R	Read Defined Variable [TT] (MPU1)bcu1__bcutlnobr = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10097	I	Ensure that the blue mushroom is released		OK		Tebogo Mtombeni - 529938	TC1
10098	A	Turn Emergency Braking Loop Override Switch 44S2 to BYPASS		OK		Tebogo Mtombeni - 529938	TC1
10099	I	Emergency Brake Train Line Dev 4/61 = 90XP15 pin 67		OK		Tebogo Mtombeni - 529938	TC1
10100	A	Force [NI] Dev4/61 = 1.0		OK		Tebogo Mtombeni - 529938	TC1
10101	R	Read Defined Variable [NI] Dev2/84 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10102	R	Read Defined Variable [NI] Dev2/85 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10103	A	Turn the Traction Interlock Override Switch 31S1 to "Override" position		OK		Tebogo Mtombeni - 529938	TC1
10104	R	Check that the indicator lamp 31H1 is ON		OK		Tebogo Mtombeni - 529938	TC1
10105	I	Emergency Brake Train Line Dev 4/61 = 90XP15 pin 67		OK		Tebogo Mtombeni - 529938	TC1
10106	A	Force [NI] Dev4/61 = 0.0		OK		Tebogo Mtombeni - 529938	TC1
10107	R	Read Defined Variable [NI] Dev2/84 = 0.0		OK	0	Tebogo Mtombeni - 529938	TC1
10108	R	Read Defined Variable [NI] Dev2/85 = 0.0		OK	0	Tebogo Mtombeni - 529938	TC1
10109	A	Check that the indicator lamp 31H1 is OFF		OK		Tebogo Mtombeni - 529938	TC1
10110	A	Turn Emergency Braking Loop Override Switch 44S2 to Normal		OK		Tebogo Mtombeni - 529938	TC1
10111	A	Place the Master Controller in "100% Traction" position		OK		Tebogo Mtombeni - 529938	TC1
10112	R	Read Min/Max [TT] (MPU1)ai_drc_tc1mcpositionch1 : 29183<= x <= 31102		OK	30848	Tebogo Mtombeni - 529938	TC1
10113	R	Read Min/Max [TT] (MPU1)ai_drc_tc1mcpositionch2 : 29183<= x <= 31102		OK	30944	Tebogo Mtombeni - 529938	TC1
10114	R	Read Defined Variable [TT] (MPU1)li_drc_tc1mctractionr1 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1

10115	R	Read Defined Variable [TT] (MPU1)li_drc_tc1mctractionr2 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10116	I	No Brake Train line Dev5/82 = 90XP15 pin 32		OK		Tebogo Mtombeni - 529938	TC1
10117	R	Read Defined Variable [NI] Dev5/82 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10118	R	Read Defined Variable [TT] (MPU1)li_drc_tc1mcnocoastr1 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10119	R	Read Defined Variable [TT] (MPU1)li_drc_tc1mcnocoastr2 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10120	I	Traction Train lines Dev2/30 = coupler pin 026 Dev2/31 = coupler pin 126 Dev5/81 = END2 90XP15 pin 31		OK		Tebogo Mtombeni - 529938	TC1
10121	R	Read Defined Variable [NI] Dev5/81 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10122	R	Read Defined Variable [NI] Dev2/30 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10123	R	Read Defined Variable [NI] Dev2/31 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10124	R	Read Defined Variable [TT] (MPU1)bcu1_bcutlnobr = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10125	R	Read Defined Variable [TT] (MPU1)bcu1_bcutltract = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10126	A	Place the Master Controller in "100% Service Brake" position		OK		Tebogo Mtombeni - 529938	TC1
10127	R	Read Min/Max [TT] (MPU1)ai_drc_tc1mcpositionch1 : 29183<= x <= 31102		OK	30864	Tebogo Mtombeni - 529938	TC1
10128	R	Read Min/Max [TT] (MPU1)ai_drc_tc1mcpositionch2 : 29183<= x <= 31102		OK	30944	Tebogo Mtombeni - 529938	TC1
10129	R	Read Defined Variable [TT] (MPU1)li_drc_tc1mcbraker1 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10130	I	No Brake Train lines Dev2/32 = coupler pin 039 Dev2/8 = coupler pin 139 Dev5/82 = 90XP15 pin 32		OK		Tebogo Mtombeni - 529938	TC1
10131	R	Read Defined Variable [NI] Dev2/32 = 0.0		OK	0	Tebogo Mtombeni - 529938	TC1
10132	R	Read Defined Variable [NI] Dev2/8 = 0.0		OK	0	Tebogo Mtombeni - 529938	TC1
10133	R	Read Defined Variable [NI] Dev5/82 = 0.0		OK	0	Tebogo Mtombeni - 529938	TC1

10134	R	Read Defined Variable [TT] (MPU1)li_drc_tc1mcbraker2 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10135	R	Read Defined Variable [TT] (MPU1)li_drc_tc1mctractionr1 = 0.0		OK	0	Tebogo Mtombeni - 529938	TC1
10136	I	Traction Train lines Dev2/30 = coupler pin 026 Dev2/31 = coupler pin 126 Dev5/81 = END2 90XP15 pin 31		OK		Tebogo Mtombeni - 529938	TC1
10137	R	Read Defined Variable [NI] Dev2/30 = 0.0		OK	0	Tebogo Mtombeni - 529938	TC1
10138	R	Read Defined Variable [NI] Dev2/31 = 0.0		OK	0	Tebogo Mtombeni - 529938	TC1
10139	R	Read Defined Variable [NI] Dev5/81 = 0.0		OK	0	Tebogo Mtombeni - 529938	TC1
10140	R	Read Defined Variable [TT] (MPU1)li_drc_tc1mctractionr2 = 0.0		OK	0	Tebogo Mtombeni - 529938	TC1
10141	R	Read Defined Variable [TT] (MPU1)li_drc_tc1mcnocoastr1 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10142	R	Read Defined Variable [TT] (MPU1)li_drc_tc1mcemergencybraker1 = 0.0		OK	0	Tebogo Mtombeni - 529938	TC1
10143	R	Read Defined Variable [TT] (MPU1)li_drc_tc1mcemergencybraker2 = 0.0		OK	0	Tebogo Mtombeni - 529938	TC1
10144	R	Read Defined Variable [TT] (MPU1)bcu1_bcutltract = 0.0		OK	0	Tebogo Mtombeni - 529938	TC1
10145	R	Read Defined Variable [TT] (MPU1)bcu1_bcutlnobr = 0.0		OK	0	Tebogo Mtombeni - 529938	TC1
10146	A	Place the Master Controller in "Emergency Brake" position		OK		Tebogo Mtombeni - 529938	TC1
10147	R	Read Min/Max [TT] (MPU1)ai_drc_tc1mcpositionch1 : 29183<= x <= 31102		OK	30848	Tebogo Mtombeni - 529938	TC1
10148	R	Read Min/Max [TT] (MPU1)ai_drc_tc1mcpositionch2 : 29183<= x <= 31102		OK	30944	Tebogo Mtombeni - 529938	TC1
10149	R	Read Defined Variable [TT] (MPU1)li_drc_tc1mcbraker1 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10150	R	Read Defined Variable [TT] (MPU1)li_drc_tc1mcbraker2 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1

10151	R	Read Defined Variable [TT] (MPU1)li_drc_tc1mcnocoastr1 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10152	R	Read Defined Variable [TT] (MPU1)li_drc_tc1mcemergencybraker1 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10153	R	Read Defined Variable [TT] (MPU1)li_drc_tc1mcemergencybraker2 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10154	A	Place the Master Controller in "OFF" position		OK		Tebogo Mtombeni - 529938	TC1
10155	R	Read Min/Max [TT] (MPU1)ai_drc_tc1mcpositionch1 : 5479<= x <= 6369		OK	5952	Tebogo Mtombeni - 529938	TC1
10156	R	Read Min/Max [TT] (MPU1)ai_drc_tc1mcpositionch2 : 5479<= x <= 6369		OK	6000	Tebogo Mtombeni - 529938	TC1
10157	R	Read Defined Variable [TT] (MPU1)li_drc_tc1mcnocoastr1 = 0.0		OK	0	Tebogo Mtombeni - 529938	TC1
10158	R	Read Defined Variable [TT] (MPU1)li_drc_tc1mcbraker2 = 0.0		OK	0	Tebogo Mtombeni - 529938	TC1
10159	R	Read Defined Variable [TT] (MPU1)li_drc_tc1mcbraker1 = 0.0		OK	0	Tebogo Mtombeni - 529938	TC1
10160	I	Traction Interlock		OK		Tebogo Mtombeni - 529938	TC1
10161	I	Traction Interlock Override		OK		Tebogo Mtombeni - 529938	TC1
10162	I	Traction Interlock Train lines Dev2/34 = coupler pin 006 Dev2/35 = coupler pin 106 Dev5/83 = END2 90XP15 pin 41		OK		Tebogo Mtombeni - 529938	TC1
10163	R	Read Defined Variable [NI] Dev2/34 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10164	R	Read Defined Variable [NI] Dev2/35 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10165	R	Read Defined Variable [NI] Dev5/83 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10166	I	Traction Interlock Bypass Train Line Dev5/4 = END2 90XP14 pin 6		OK		Tebogo Mtombeni - 529938	TC1
10167	R	Read Defined Variable [NI] Dev5/4 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10168	R	Read Defined Variable [TT] (BCU1)LI_NOT_INHIB = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1

10169	R	Read Defined Variable [TT] (MPU1)li_drc_tc1tractintoverrider1 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10170	R	Read Defined Variable [TT] (MPU1)li_drc_tc1tractintoverrider2 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10171	R	Check that the Indicator Lamp 31H2 is ON		OK		Tebogo Mtombeni - 529938	TC1
10172	A	Turn the Traction Interlock Override Switch 31S1 to "Normal" position		OK		Tebogo Mtombeni - 529938	TC1
10173	I	Traction Interlock Train lines Dev2/34 = coupler pin 006 Dev2/35 = coupler pin 106 Dev5/83 = END2 90XP15 pin 41		OK		Tebogo Mtombeni - 529938	TC1
10174	R	Read Defined Variable [NI] Dev2/34 = 0.0		OK	0	Tebogo Mtombeni - 529938	TC1
10175	R	Read Defined Variable [NI] Dev2/35 = 0.0		OK	0	Tebogo Mtombeni - 529938	TC1
10176	R	Read Defined Variable [NI] Dev5/83 = 0.0		OK	0	Tebogo Mtombeni - 529938	TC1
10177	I	Traction Interlock Bypass Train Line Dev5/4 = END2 90XP14 pin 6		OK		Tebogo Mtombeni - 529938	TC1
10178	R	Read Defined Variable [NI] Dev5/4 = 0.0		OK	0	Tebogo Mtombeni - 529938	TC1
10179	R	Read Defined Variable [TT] (BCU1)LI_NOT_INHIB = 0.0		OK	0	Tebogo Mtombeni - 529938	TC1
10180	R	Read Defined Variable [TT] (MPU1)li_drc_tc1tractintoverrider1 = 0.0		OK	0	Tebogo Mtombeni - 529938	TC1
10181	R	Read Defined Variable [TT] (MPU1)li_drc_tc1tractintoverrider2 = 0.0		OK	0	Tebogo Mtombeni - 529938	TC1
10182	R	Check that the Indicator Lamp 31H2 is OFF		OK		Tebogo Mtombeni - 529938	TC1
10183	I	Traction Interlock Relay		OK		Tebogo Mtombeni - 529938	TC1
10184	A	Open Circuit Breaker "30Q1"		OK		Tebogo Mtombeni - 529938	TC1
10185	A	Open Circuit Breaker "30Q2"		OK		Tebogo Mtombeni - 529938	TC1
10186	I	Safety Doors Loop Train Line Dev4/89 = END2 90XP15 pin 96		OK		Tebogo Mtombeni - 529938	TC1
10187	A	Force [NI] Dev4/89 = 1.0		OK		Tebogo Mtombeni - 529938	TC1
10188	I	Set the Running Direction Switch 30A1.S2 to "Forward" position		OK		Tebogo Mtombeni - 529938	TC1

10189	A	Force [TT] (MPU1)lo_drc_tc1tractionloopr1 = 1.0		OK		Tebogo Mtombeni - 529938	TC1
10190	I	Emergency Brake Loop Train Line Dev4/5 = END2 90XP14 pin 9		OK		Tebogo Mtombeni - 529938	TC1
10191	A	Force [NI] Dev4/5 = 1.0		OK		Tebogo Mtombeni - 529938	TC1
10192	A	Force [TT] (MPU1)lo_ubk_tc1emergbraker1 = 1.0		OK		Tebogo Mtombeni - 529938	TC1
10193	A	Turn the Dead Man Override Switch 60S1 to "Override" position		OK		Tebogo Mtombeni - 529938	TC1
10194	A	Turn the ERTMS Isolation switch 62S1 to "Isolation" position		OK		Tebogo Mtombeni - 529938	TC1
10195	I	Traction Interlock Train lines Dev5/83 = END2 90XP15 pin 41		OK		Tebogo Mtombeni - 529938	TC1
10196	R	Read Defined Variable [NI] Dev5/83 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10197	R	Read Defined Variable [TT] (MPU1)li_ubk_tc1emergrelay1 = 0.0		OK	0	Tebogo Mtombeni - 529938	TC1
10198	R	Read Defined Variable [TT] (MPU1)li_drc_tc1tractionauthorr1 = 0.0		OK	0	Tebogo Mtombeni - 529938	TC1
10199	R	Read Defined Variable [TT] (MPU1)li_drc_tc1tractionauthorr2 = 0.0		OK	0	Tebogo Mtombeni - 529938	TC1
10200	R	Check that the indicator lamp 31H1 is ON		OK		Tebogo Mtombeni - 529938	TC1
10201	A	Press and activate the mushroom switch 44S1		OK		Tebogo Mtombeni - 529938	TC1
10202	R	Check that the indicator lamp 31H1 is OFF		OK		Tebogo Mtombeni - 529938	TC1
10203	A	Release the mushroom switch 44S1		OK		Tebogo Mtombeni - 529938	TC1
10204	R	Check that the indicator lamp 31H1 is ON		OK		Tebogo Mtombeni - 529938	TC1
10205	A	Place the Master Controller in "100% Traction" position		OK		Tebogo Mtombeni - 529938	TC1
10206	I	Traction Train lines Dev5/81 = END2 90XP15 pin 31		OK		Tebogo Mtombeni - 529938	TC1
10207	R	Read Defined Variable [NI] Dev5/81 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10208	A	Place the Master Controller in "Neutral" position		OK		Tebogo Mtombeni - 529938	TC1

10209	A	Close Circuit Breaker "30Q1"		OK		Tebogo Mtombeni - 529938	TC1
10210	A	Close Circuit Breaker "30Q2"		OK		Tebogo Mtombeni - 529938	TC1
10211	I	Set the Running Direction Switch 30A1.S2 to "Neutral" position		OK		Tebogo Mtombeni - 529938	TC1
10212	R	Read Defined Variable [TT] (MPU1)li_drc_tc1tractionauthorr1 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10213	R	Read Defined Variable [TT] (MPU1)li_drc_tc1tractionauthorr2 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10214	I	Traction Interlock Train lines Dev5/83 = END2 90XP15 pin 41		OK		Tebogo Mtombeni - 529938	TC1
10215	R	Read Defined Variable [NI] Dev5/83 = 0.0		OK	0	Tebogo Mtombeni - 529938	TC1
10216	R	Check Indicator Lamp 31H1 is OFF	TA	OK		Tebogo Mtombeni - 529938	TC1
10217	A	Release [TT] (MPU1)lo_drc_tc1tractionloopr1		OK		Tebogo Mtombeni - 529938	TC1
10218	A	Force [TT] (MPU1)lo_drc_tc1tractionloopr2 = 1.0		OK		Tebogo Mtombeni - 529938	TC1
10219	I	Set the Running Direction Switch 30A1.S2 to "Reverse" position		OK		Tebogo Mtombeni - 529938	TC1
10220	R	Read Defined Variable [TT] (MPU1)li_drc_tc1tractionauthorr1 = 0.0		OK	0	Tebogo Mtombeni - 529938	TC1
10221	R	Check Indicator Lamp 31H1 is ON	TA	OK		Tebogo Mtombeni - 529938	TC1
10222	I	Traction Authorization at V>5km/h		OK		Tebogo Mtombeni - 529938	TC1
10223	I	Safety Doors Loop Train Line Dev4/89 = END2 90XP15 pin 96		OK		Tebogo Mtombeni - 529938	TC1
10224	A	Force [NI] Dev4/89 = 0.0		OK		Tebogo Mtombeni - 529938	TC1
10225	R	Read Defined Variable [TT] (MPU1)li_drc_tc1tractionauthorr1 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10226	I	V>5km/h Train Line Dev4/38 = END2 90XP15 pin 28		OK		Tebogo Mtombeni - 529938	TC1
10227	A	Force [NI] Dev4/38 = 1.0		OK		Tebogo Mtombeni - 529938	TC1
10228	R	Read Defined Variable [TT] (MPU1)li_drc_tc1tractionauthorr1 = 0.0		OK	0	Tebogo Mtombeni - 529938	TC1

10229	I	PEA Loop Train Line Dev4/62 = END2 90XP15 pin 95		OK		Tebogo Mtombeni - 529938	TC1
10230	A	Force [NI] Dev4/62 = 1.0		OK		Tebogo Mtombeni - 529938	TC1
10231	R	Read Defined Variable [TT] (MPU1)li_drc_tc1tractionauthorr1 = 1.0		OK	1	Tebogo Mtombeni - 529938	TC1
10232	I	PEA Loop Train Line Dev4/62 = END2 90XP15 pin 95		OK		Tebogo Mtombeni - 529938	TC1
10233	A	Force [NI] Dev4/62 = 0.0		OK		Tebogo Mtombeni - 529938	TC1
10234	I	V>5km/h Train Line Dev4/38 = END2 90XP15 pin 28		OK		Tebogo Mtombeni - 529938	TC1
10235	A	Force [NI] Dev4/38 = 0.0		OK		Tebogo Mtombeni - 529938	TC1
10236	I	Emergency Brake Loop Train Line Dev4/5 = END2 90XP14 pin 8		OK		Tebogo Mtombeni - 529938	TC1
10237	A	Force [NI] Dev4/5 = 0.0		OK		Tebogo Mtombeni - 529938	TC1
10238	A	Release [TT] (MPU1)lo_ubk_tc1emergbraker1		OK		Tebogo Mtombeni - 529938	TC1
10239	A	Release [TT] (MPU1)lo_drc_tc1tractionloopr2		OK		Tebogo Mtombeni - 529938	TC1
10240	I	Set the Running Direction Switch 30A1.S2 to "Normal" position		OK		Tebogo Mtombeni - 529938	TC1
10241	A	Turn the Dead Man Override Switch 60S1 to "Normal" position		OK		Tebogo Mtombeni - 529938	TC1
10242	A	Turn the ERTMS Isolation switch 62S1 to "Normal" position		OK		Tebogo Mtombeni - 529938	TC1
10243	I	END OF TEST		OK		Tebogo Mtombeni - 529938	TC1

Section 18 – Train-Ground Communication

18.1 Instructions list

18.1.2 063_065_COM-Train-Ground Communication

I - Information A - Action R - Result NE - Not Executed

N°	Type	Instruction	File	Result status	Result value	Operator	Vehicle
10001	I	Train-Ground Communication (SPP=063; 065)		OK		Sinazo Mkhwa - 529940	TC1
10002	A	Turn Driver Key 30A1.S1 to Active Cab position		OK		Sinazo Mkhwa - 529940	TC1
10003	I	UHF Radio		OK		Sinazo Mkhwa - 529940	TC1
10004	I	Using the tool list on the side of your screen, note the serial number of the antenna cable tester used in this procedure		OK		Sinazo Mkhwa - 529940	TC1
10005	I	Antenna Cable		OK		Sinazo Mkhwa - 529940	TC1
10006	A	Using the Antenna cable tester, recall a set for the UHF Radio antenna cable		OK		Sinazo Mkhwa - 529940	TC1
10007	A	Ensure the frequency range is 450MHz - 470MHz; Connect the UHF antenna cable to the measuring cable and note the resulting waveform		OK		Sinazo Mkhwa - 529940	TC1
10008	R	The maximum peak of the waveform is = Result Max : x <= 1.5 ()		OK	1	Sinazo Mkhwa - 529940	TC1
10009	A	Save the waveform result with the following name: TS#(#-Train number)_TC1_ UHF		OK		Sinazo Mkhwa - 529940	TC1
10010	A	Normalize UHF antenna cable		OK		Sinazo Mkhwa - 529940	TC1
10011	I	Power Supply		OK		Sinazo Mkhwa - 529940	TC1
10012	A	Close Circuit Breaker 63Q2		OK		Sinazo Mkhwa - 529940	TC1
10013	R	Check that the UHF Radio is ON		OK		Sinazo Mkhwa - 529940	TC1
10014	R	Check that the UHF hand-held is ON		OK		Sinazo Mkhwa - 529940	TC1
10015	A	press the volume buttons '+' and '-' on the top of the radio, and endure that the sound level increases and decreases accordingly		OK		Sinazo Mkhwa - 529940	TC1
10016	A	Open Circuit Breaker 63Q2		OK		Sinazo Mkhwa - 529940	TC1

10017	R	Check that the UHF Radio is OFF		OK		Sinazo Mkhwa - 529940	TC1
10018	A	Close Circuit Breaker 63Q1		OK		Sinazo Mkhwa - 529940	TC1
10019	A	Turn the UHF Radio Emergency Supply switch 63S1 to the "Emergency" position, and release it		OK		Sinazo Mkhwa - 529940	TC1
10020	R	Check that the UHF Radio is ON		OK		Sinazo Mkhwa - 529940	TC1
10021	I	After 10 minutes, the UHF Radio should go OFF. Proceed to the next set of steps and validate the next line after 10 minutes. When the Radio goes off, Close 63Q2 to switch on the radio, then continue with the test		OK		Sinazo Mkhwa - 529940	TC1
10022	R	After 10 minutes the UHF Radio turns OFF		OK		Sinazo Mkhwa - 529940	TC1
10023	I	GSMR Radio		OK		Sinazo Mkhwa - 529940	TC1
10024	I	Power Supply GSM_RADIO		OK		Sinazo Mkhwa - 529940	TC1
10025	A	Close Circuit Breaker 65Q2		OK		Sinazo Mkhwa - 529940	TC1
10026	R	Check that the GSM Radio is ON		OK		Sinazo Mkhwa - 529940	TC1
10027	A	Open Circuit Breaker 65Q2		OK		Sinazo Mkhwa - 529940	TC1
10028	R	Check that the GSM Radio is OFF		OK		Sinazo Mkhwa - 529940	TC1
10029	A	Close Circuit Breaker 65Q1		OK		Sinazo Mkhwa - 529940	TC1
10030	A	Turn the GSM Radio Emergency Supply switch 65S1 to the "Emergency" position, and release it		OK		Sinazo Mkhwa - 529940	TC1
10031	R	Check that the GSM Radio is ON		OK		Sinazo Mkhwa - 529940	TC1
10032	I	After 10 minutes, the GSM Radio should go OFF. Proceed to the next set of steps and validate the next line after 10 minutes.		OK		Sinazo Mkhwa - 529940	TC1
10033	R	After 10 minutes the GSM Radio turns OFF		OK		Sinazo Mkhwa - 529940	TC1
10034	I	Antenna Cable		OK		Sinazo Mkhwa - 529940	TC1
10035	A	Using the Antenna cable tester, recall a set for the GSM Radio antenna cable		OK		Sinazo Mkhwa - 529940	TC1

10036	A	Ensure the frequency range is 876MHz - 960MHz; Connect the GSMR antenna cable to the measuring cable and note the resulting waveform		OK		Sinazo Mkhwa - 529940	TC1
10037	R	The maximum peak of the waveform is = Result Max : x <= 2 ()		OK	1.03	Sinazo Mkhwa - 529940	TC1
10038	A	Save the waveform result with the following name: TS#(#-Train number)_TC1_ GSMR		OK		Sinazo Mkhwa - 529940	TC1
10039	A	Normalize GSMR antenna cable		OK		Sinazo Mkhwa - 529940	TC1
10040	I	HMI Power On		OK		Amanda Ntuli - 526239	TC1
10041	I	Proceed with the following steps after the Radio has turned OFF		OK		Amanda Ntuli - 526239	TC1
10042	A	Close Circuit Breaker 65Q2 - allow time for the Radio to turn ON		OK		Amanda Ntuli - 526239	TC1
10043	A	Turn Driver Key 30A1.S1 to Non-Active Cab position		OK		Amanda Ntuli - 526239	TC1
10044	A	Reset (Off then On) Circuit Breaker 20Q2		OK		Amanda Ntuli - 526239	TC1
10045	R	The GSMR HMI Screen turns OFF		OK		Amanda Ntuli - 526239	TC1
10046	A	Turn the GSM Radio Emergency Supply switch 65S1 to the "Emergency" position, and release it		OK		Amanda Ntuli - 526239	TC1
10047	R	The GSMR HMI Screen turns ON		OK		Amanda Ntuli - 526239	TC1
10048	A	Open Circuit Breaker 65Q1		OK		Amanda Ntuli - 526239	TC1
10049	A	Turn Driver Key 30A1.S1 to Active Cab position		OK		Amanda Ntuli - 526239	TC1
10050	R	The GSMR turns ON		OK		Amanda Ntuli - 526239	TC1
10051	A	Close Circuit Breaker 65Q1		OK		Amanda Ntuli - 526239	TC1
10052	I	Handset and loud-speaker volume		OK		Amanda Ntuli - 526239	TC1
10053	A	Pick up the GSM-R handset. On the GSM-R, press the "11" key		OK		Amanda Ntuli - 526239	TC1
10054	R	On the GSM-R MMI, volume symbol flashes above the "11" key.		OK		Amanda Ntuli - 526239	TC1
10055	A	Adjust the volume using the arrow upward (louder) or arrow downward		OK		Amanda Ntuli - 526239	TC1

		(quieter)					
10056	R	The sound change is audible (in the handset and visible on MMI) immediately		OK		Amanda Ntuli - 526239	TC1
10057	A	On the GSM-R, press the "11" key.		OK		Amanda Ntuli - 526239	TC1
10058	R	On the GSM-R MMI, volume symbol is no longer flashing above the "11" key.		OK		Amanda Ntuli - 526239	TC1
10059	A	Hang up the GSM-R handset. On GSM-R M, Press the "11" key.		OK		Amanda Ntuli - 526239	TC1
10060	R	On the GSM-R MMI, volume symbol flashes above the "11" key.		OK		Amanda Ntuli - 526239	TC1
10061	A	Adjust the volume using the arrow upward (louder) or arrow downward (quieter)		OK		Amanda Ntuli - 526239	TC1
10062	R	The sound change is audible (in the loudspeaker located in the ceiling and visible on MMI) immediately		OK		Amanda Ntuli - 526239	TC1
10063	A	On the GSM-R, press the "11" key.		OK		Amanda Ntuli - 526239	TC1
10064	R	On the GSM-R M, volume symbol is no longer flashing above the "11" key.		OK		Amanda Ntuli - 526239	TC1
10065	I	END OF TEST		OK		Amanda Ntuli - 526239	TC1

18.1.1 062_ETC-ERTMS

I - Information A - Action R - Result NE - Not Executed

N°	Type	Instruction	File	Result status	Result value	Operator	Vehicle
10001	I	ERTMS (SPP = 062)		OK		Anthonia Mabowa - 494131	TC1
10002	I	Ensure Circuit Breaker 62Q1 is OPEN		OK		Anthonia Mabowa - 494131	TC1
10003	I	DMI Power Supply		OK		Anthonia Mabowa - 494131	TC1
10004	A	Use the following procedure to perform Electrical Check on the DMI power supply ***[17-35-42-280823_Electrical Check for TC1.pdf]***	PDF	OK		Anthonia Mabowa - 494131	TC1
10005	A	Close Circuit Breaker 62Q1		OK		Anthonia Mabowa - 494131	TC1
10006	R	The ERTMS Display Unit (MMI) is powered ON		OK		Anthonia Mabowa - 494131	TC1
10007	A	Place the ERTMS Isolation Switch 62S1 is in Isolation position		OK		Anthonia Mabowa - 494131	TC1
10008	R	The ERTMS Display Unit (MMI) is powered OFF		OK		Anthonia Mabowa - 494131	TC1
10009	I	DMI Software Upload		OK		Sizwe Sibanyoni - 484647	TC1
10010	A	Use the following procedure to upload the DMI software: ***[17-38-29-280824_DMI Software Upload Procedure.pdf]***	PDF	OK		Sizwe Sibanyoni - 484647	TC1
10011	I	Emergency Brake By ERTMS		OK		Anthonia Mabowa - 494131	TC1
10012	I	Emergency Brake ERTMS Train lines Dev4/88 =END2 Emergency Brake ERTMS 1		OK		Anthonia Mabowa - 494131	TC1
10013	A	Force [NI] Dev4/88 = 1.0		OK		Anthonia Mabowa - 494131	TC1
10014	R	Read Defined Variable [TT] (MPU1)li_ets_tc1ertmsebk1r1 = 0.0		OK	0	Anthonia Mabowa - 494131	TC1
10015	R	Read Defined Variable [TT] (MPU1)li_ets_tc1ertmsebk1r2 = 0.0		OK	0	Anthonia Mabowa - 494131	TC1
10016	R	Read Defined Variable [TT] (MPU1)li_ets_tc1ertmsebk2r1 = 1.0		OK	1	Anthonia Mabowa - 494131	TC1
10017	R	Read Defined Variable [TT] (MPU1)li_ets_tc1ertmsebk2r2 = 1.0		OK	1	Anthonia Mabowa - 494131	TC1

10018	I	Emergency Brake ERTMS Train lines Dev4/80 =END2 Emergency Brake ERTMS 2		OK		Anthonia Mabowa - 494131	TC1
10019	A	Force [NI] Dev4/80 = 1.0		OK		Anthonia Mabowa - 494131	TC1
10020	R	Read Defined Variable [TT] (MPU1)li_ets_tc1ertmsebk1r1 = 0.0		OK	0	Anthonia Mabowa - 494131	TC1
10021	R	Read Defined Variable [TT] (MPU1)li_ets_tc1ertmsebk1r2 = 0.0		OK	0	Anthonia Mabowa - 494131	TC1
10022	R	Read Defined Variable [TT] (MPU1)li_ets_tc1ertmsebk2r1 = 0.0		OK	0	Anthonia Mabowa - 494131	TC1
10023	R	Read Defined Variable [TT] (MPU1)li_ets_tc1ertmsebk2r2 = 0.0		OK	0	Anthonia Mabowa - 494131	TC1
10024	I	Emergency Brake ERTMS Train lines Dev4/88 =END2 Emergency Brake ERTMS 1		OK		Anthonia Mabowa - 494131	TC1
10025	A	Force [NI] Dev4/88 = 0.0		OK		Anthonia Mabowa - 494131	TC1
10026	R	Read Defined Variable [TT] (MPU1)li_ets_tc1ertmsebk1r1 = 1.0		OK	1	Anthonia Mabowa - 494131	TC1
10027	R	Read Defined Variable [TT] (MPU1)li_ets_tc1ertmsebk1r2 = 1.0		OK	1	Anthonia Mabowa - 494131	TC1
10028	R	Read Defined Variable [TT] (MPU1)li_ets_tc1ertmsebk2r1 = 0.0		OK	0	Anthonia Mabowa - 494131	TC1
10029	R	Read Defined Variable [TT] (MPU1)li_ets_tc1ertmsebk2r2 = 0.0		OK	0	Anthonia Mabowa - 494131	TC1
10030	I	Emergency Brake ERTMS Train lines Dev4/80 =END2 Emergency Brake ERTMS 2		OK		Anthonia Mabowa - 494131	TC1
10031	A	Force [NI] Dev4/80 = 0.0		OK		Anthonia Mabowa - 494131	TC1
10032	R	Read Defined Variable [TT] (MPU1)li_ets_tc1ertmsebk1r1 = 1.0		OK	1	Anthonia Mabowa - 494131	TC1
10033	R	Read Defined Variable [TT] (MPU1)li_ets_tc1ertmsebk1r2 = 1.0		OK	1	Anthonia Mabowa - 494131	TC1
10034	R	Read Defined Variable [TT] (MPU1)li_ets_tc1ertmsebk2r1 = 1.0		OK	1	Anthonia Mabowa - 494131	TC1
10035	R	Read Defined Variable [TT] (MPU1)li_ets_tc1ertmsebk2r2 = 1.0		OK	1	Anthonia Mabowa - 494131	TC1
10036	I	ERTMS Bypass/Reset		OK		Anthonia Mabowa - 494131	TC1

10037	I	ERTMS Bypass Train Lines Dev2/5 = coupler pin 036 Dev2/6 = coupler pin 136 Dev5/37 = END2 train line		OK		Anthonia Mabowa - 494131	TC1
10038	R	Read Defined Variable [NI] Dev2/5 = 1.0		OK	1	Anthonia Mabowa - 494131	TC1
10039	R	Read Defined Variable [NI] Dev2/6 = 1.0		OK	1	Anthonia Mabowa - 494131	TC1
10040	R	Read Defined Variable [NI] Dev5/37 = 1.0		OK	1	Anthonia Mabowa - 494131	TC1
10041	A	Turn the cab key 30A1.S1 to non-active cab		OK		Anthonia Mabowa - 494131	TC1
10042	I	ERTMS Bypass Train Lines Dev2/5 = coupler pin 036 Dev2/6 = coupler pin 136 Dev5/37 = END2 train line		OK		Anthonia Mabowa - 494131	TC1
10043	R	Read Defined Variable [NI] Dev2/5 = 0.0		OK	0	Anthonia Mabowa - 494131	TC1
10044	R	Read Defined Variable [NI] Dev2/6 = 0.0		OK	0	Anthonia Mabowa - 494131	TC1
10045	R	Read Defined Variable [NI] Dev5/37 = 0.0		OK	0	Anthonia Mabowa - 494131	TC1
10046	A	Turn cab key 30A1.S1 to active cab position		OK		Anthonia Mabowa - 494131	TC1
10047	I	Place the ERTMS switch 62S1 to Normal position		OK		Anthonia Mabowa - 494131	TC1
10048	I	ERTMS Bypass Train Lines Dev2/5 = coupler pin 036 Dev2/6 = coupler pin 136 Dev5/37 = END2 train line		OK		Anthonia Mabowa - 494131	TC1
10049	R	Read Defined Variable [NI] Dev2/5 = 0.0		OK	0	Anthonia Mabowa - 494131	TC1
10050	R	Read Defined Variable [NI] Dev5/37 = 0.0		OK	0	Anthonia Mabowa - 494131	TC1
10051	R	Read Defined Variable [TT] (MPU1)li_ets_tc1ertmsbypassr1 = 0.0		OK	0	Anthonia Mabowa - 494131	TC1
10052	R	Read Defined Variable [TT] (MPU1)li_ets_tc1ertmsbypassr2 = 0.0		OK	0	Anthonia Mabowa - 494131	TC1
10053	R	The indicator Lamp 62H1 is OFF		OK		Anthonia Mabowa - 494131	TC1
10054	A	Place the ERTMS isolation switch 62S1 in isolation position		OK		Anthonia Mabowa - 494131	TC1
10055	I	ERTMS Bypass Train Lines Dev2/5 = coupler pin 036 Dev2/6 = coupler pin 136		OK		Anthonia Mabowa - 494131	TC1

		Dev5/37 = END2 train line					
10056	R	Read Defined Variable [NI] Dev2/5 = 1.0		OK	1	Anthonia Mabowa - 494131	TC1
10057	R	Read Defined Variable [NI] Dev2/6 = 1.0		OK	1	Anthonia Mabowa - 494131	TC1
10058	R	Read Defined Variable [NI] Dev5/37 = 1.0		OK	1	Anthonia Mabowa - 494131	TC1
10059	R	Read Defined Variable [TT] (MPU1)li_ets_tc1ertmsbypassr2 = 1.0		OK	1	Anthonia Mabowa - 494131	TC1
10060	R	Read Defined Variable [TT] (MPU1)li_ets_tc1ertmsbypassr1 = 1.0		OK	1	Anthonia Mabowa - 494131	TC1
10061	R	The indicator Lamp 62H1 is ON	ERTMS	OK		Anthonia Mabowa - 494131	TC1
10062	I	Place the ERTMS switch 62S1 to Normal position		OK		Anthonia Mabowa - 494131	TC1
10063	A	Force [TT] (MPU1)lo_ets_tc1rstertmsr2 = 1.0		OK		Anthonia Mabowa - 494131	TC1
10064	A	Force [TT] (MPU1)lo_ets_tc1rstertmsr1 = 0.0		OK		Anthonia Mabowa - 494131	TC1
10065	I	ERTMS Bypass Train Lines Dev2/5 = coupler pin 036 Dev2/6 = coupler pin 136 Dev5/37 = END2 train line		OK		Anthonia Mabowa - 494131	TC1
10066	R	Read Defined Variable [NI] Dev2/5 = 0.0		OK	0	Anthonia Mabowa - 494131	TC1
10067	R	Read Defined Variable [NI] Dev2/6 = 0.0		OK	0	Anthonia Mabowa - 494131	TC1
10068	R	Read Defined Variable [NI] Dev5/37 = 0.0		OK	0	Anthonia Mabowa - 494131	TC1
10069	A	Force [TT] (MPU1)lo_ets_tc1rstertmsr2 = 0.0		OK		Anthonia Mabowa - 494131	TC1
10070	A	Force [TT] (MPU1)lo_ets_tc1rstertmsr1 = 1.0		OK		Anthonia Mabowa - 494131	TC1
10071	I	ERTMS Bypass Train Lines Dev2/5 = coupler pin 036 Dev2/6 = coupler pin 136 Dev5/37 = END2 train line		OK		Anthonia Mabowa - 494131	TC1
10072	R	Read Defined Variable [NI] Dev2/5 = 0.0		OK	0	Anthonia Mabowa - 494131	TC1
10073	R	Read Defined Variable [NI] Dev2/6 = 0.0		OK	0	Anthonia Mabowa - 494131	TC1
10074	R	Read Defined Variable [NI] Dev5/37 = 0.0		OK	0	Anthonia Mabowa - 494131	TC1

10075	A	Force [TT] (MPU1)lo_ets_tc1rstertmsr2 = 1.0		OK		Anthonia Mabowa - 494131	TC1
10076	A	Force [TT] (MPU1)lo_ets_tc1rstertmsr1 = 1.0		OK		Anthonia Mabowa - 494131	TC1
10077	R	Read Defined Variable [NI] Dev2/5 = 1.0		OK	1	Anthonia Mabowa - 494131	TC1
10078	R	Read Defined Variable [NI] Dev2/6 = 1.0		OK	1	Anthonia Mabowa - 494131	TC1
10079	R	Read Defined Variable [NI] Dev5/37 = 1.0		OK	1	Anthonia Mabowa - 494131	TC1
10080	R	The indicator Lamp 62H1 is ON		OK		Anthonia Mabowa - 494131	TC1
10081	A	Force [TT] (MPU1)lo_ets_tc1rstertmsr2 = 0.0		OK		Anthonia Mabowa - 494131	TC1
10082	A	Force [TT] (MPU1)lo_ets_tc1rstertmsr1 = 0.0		OK		Anthonia Mabowa - 494131	TC1
10083	I	Eurobalise Antenna Cable		OK		Anthonia Mabowa - 494131	TC1
10084	I	Use the multimeter for continuity test		OK		Anthonia Mabowa - 494131	TC1
10085	A	Refer to the picture below to test the Eurobalise antenna cables.		OK		Anthonia Mabowa - 494131	TC1
10086	R	ALL the points are continuous from the antenna to End 2.		OK		Anthonia Mabowa - 494131	TC1
10087	I	END OF TEST		OK		Anthonia Mabowa - 494131	TC1

Section 19 – Vehicle Normalization

19.1 Instructions list

19.1.1 NORM-Vehicle Normalization

I - Information A - Action R - Result NE - Not Executed

N°	Type	Instruction	File	Result status	Result value	Operator	Vehicle
10001	I	Initial Conditions		OK		Gcobani Baliso - 480570	TC1
10002	I	The VFT procedures are all completed		OK		Gcobani Baliso - 480570	TC1
10003	I	Vehicle Normalization Check		OK		Gcobani Baliso - 480570	TC1
10004	R	On LV1 all Circuit Breakers are installed and secured		OK		Gcobani Baliso - 480570	TC1
10005	R	On LV1 all Switches and Buttons are installed properly		OK		Gcobani Baliso - 480570	TC1
10006	R	On LV1 all Relays and Timers are installed and secured		OK		Gcobani Baliso - 480570	TC1
10007	R	On LV1 all Dataplugs are installed, tightened and earth braids are fastened		OK		Gcobani Baliso - 480570	TC1
10008	R	On LV1 BRIOMs are properly installed		OK		Gcobani Baliso - 480570	TC1
10009	R	On LV1 all UMC Rack cards are installed properly		OK		Gcobani Baliso - 480570	TC1
10010	R	On LV1 all Connectors are tightened		OK		Gcobani Baliso - 480570	TC1
10011	R	On LV1 there are no missing components, device, wiring or connectors.		OK		Gcobani Baliso - 480570	TC1
10012	R	On LV2 the MCE is installed and properly tightened		OK		Gcobani Baliso - 480570	TC1
10013	R	On LV2 the GSMR-Radio is installed and properly tightened, and its connectors are tightened		OK		Gcobani Baliso - 480570	TC1
10014	R	On LV2 the UHF-Radio is installed and properly tightened, and its connectors are tightened		OK		Gcobani Baliso - 480570	TC1
10015	R	On LV2 the FDCU is installed and properly tightened and its connectors are tightened		OK		Gcobani Baliso - 480570	TC1
10016	R	On LV2 all Circuit Breakers are installed and secured		OK		Gcobani Baliso - 480570	TC1

10017	R	On LV2 all Connectors are tightened		OK		Gcobani Baliso - 480570	TC1
10018	R	On LV2 there are no missing components, device, wiring or connectors.		OK		Gcobani Baliso - 480570	TC1
10019	A	On the Driver's Desk, all Switches and Buttons are installed properly. Refer to the image below.		OK		Siphesihle Mchunu - 491465	TC1
10020	R	On the Driver's Desk, DDU is installed and properly tightened		OK		Gcobani Baliso - 480570	TC1
10021	R	On the Driver's Desk, ERTMS HMI is installed and properly tightened		OK		Siphesihle Mchunu - 491465	TC1
10022	R	On the Driver's Desk, GSMR HMI and Handset are installed and properly tightened		OK		Siphesihle Mchunu - 491465	TC1
10023	R	On the Driver's Desk, Speedometer is installed and properly tightened		OK		Gcobani Baliso - 480570	TC1
10024	R	On the Driver's Desk, Pressure Gauge is installed and properly tightened		OK		Gcobani Baliso - 480570	TC1
10025	R	On the Driver's Desk, Alarm Module is installed and properly tightened		OK		Gcobani Baliso - 480570	TC1
10026	R	On the Driver's Desk, Voltage/Traction Indicator is installed and properly tightened		OK		Gcobani Baliso - 480570	TC1
10027	R	On the Driver's Desk, Master Controller is installed and properly tightened		OK		Gcobani Baliso - 480570	TC1
10028	R	On the UDM, all connectors are tightened		OK		Gcobani Baliso - 480570	TC1
10029	R	On the UDR, Wiper Controller is properly installed		OK		Gcobani Baliso - 480570	TC1
10030	R	On the UDL, BRIOMs are properly installed		OK		Gcobani Baliso - 480570	TC1
10031	R	CPM is properly installed and secured		OK		Gcobani Baliso - 480570	TC1
10032	R	Driver Foot Heater is properly installed		OK		Gcobani Baliso - 480570	TC1
10033	R	On the Cab Ceiling, Lights are all properly installed		OK		Gcobani Baliso - 480570	TC1
10034	R	On the Cab Ceiling, Speakers are all properly installed		OK		Gcobani Baliso - 480570	TC1

10035	R	On the Cab Ceiling, Fire Detector is properly installed and secured		OK		Gcobani Baliso - 480570	TC1
10036	R	On the Cab Ceiling, Frontal Camera is properly installed		OK		Gcobani Baliso - 480570	TC1
10037	R	All DCUs are properly installed and secured		OK		Gcobani Baliso - 480570	TC1
10038	R	All Internal Displays are properly installed and secured		OK		Gcobani Baliso - 480570	TC1
10039	R	All Light Covers are properly installed		OK		Gcobani Baliso - 480570	TC1
10040	R	All Saloon Cameras are properly installed		OK		Gcobani Baliso - 480570	TC1
10041	R	All PEAs and PEIs are properly installed		OK		Gcobani Baliso - 480570	TC1
10042	R	On LV7 all Dataplugs are installed, tightened and earth braids are fastened		OK		Gcobani Baliso - 480570	TC1
10043	R	On HC Cubicle the Controller is installed and properly tightened and its connectors are tightened		OK		Gcobani Baliso - 480570	TC1
10044	R	On the LVB, all Relays and Timers are installed and properly tightened		OK		Gcobani Baliso - 480570	TC1
10045	R	On the LVB, all Circuit Breakers are installed and properly tightened		OK		Gcobani Baliso - 480570	TC1
10046	R	On the Underframe, CVS Agate is installed and properly tightened		OK		Gcobani Baliso - 480570	TC1
10047	R	On the Underframe, Speed Sensors are installed and properly tightened		OK		Gcobani Baliso - 480570	TC1
10048	R	On the Underframe, Battery Box cables are properly connected		OK		Gcobani Baliso - 480570	TC1
10049	R	ALL underframe covers are normalised		OK		Gcobani Baliso - 480570	TC1
10050	R	On END1 the Octopus cables are disconnected from the coupler and properly stored.		OK		Gcobani Baliso - 480570	TC1
10051	R	On END2 the Octopus cables are disconnected from the car and properly stored.		OK		Gcobani Baliso - 480570	TC1
10052	R	The Test Bench is switched OFF and Octopus is disconnected and properly stored		OK		Gcobani Baliso - 480570	TC1

10053	R	ALL P.Os of this car are closed		OK		Siphesihle Mchunu - 491465	TC1
10054	I	End Of Test		OK		Gcobani Baliso - 480570	TC1

Section 20 – Report summaries

20.1 Results status

Test Instruction Sheet	Compliant	Incomplete	Non-compliant
Vehicle Normalization	X		
Train-Ground Communication	X		
TCMS Network	X		
Service Brake	X		
Rescue Mode and Emergency Disconnection	X		
Passenger Doors	X		
PACIS System	X		
Internal Lighting	X		
HVAC Air Conditioning	X		
Holding and Parking Brake	X		
Fire Protection	X		
External Signalling	X		
Energy Distribution	X		
Emergency Brake	X		
Driving Command	X		
Driver Desk Illumination	X		
Dead Man	X		
Cabin Control	X		

20.2 Tools used

Function	Tool name	Tool number
040_SBK	Manometro	Manometer
045_PBK	Manometro	Manometer
057_HVA_SME	NAnémomètre	Anemometer 1
057_HVA_SME	NPhasemètre	Phasemeter

062_ETC	Multimetro	Multimeter 4
063_065_COM	N	Radio Analyser

Vehicle	Equipment	Expected version	Version loaded
TC1			