

| PROJECT | CUSTOMER | VEHICLE |
|-----------------|----------|-----------------|
| Xtrapolis-PRASA | PRASA | 228 – TC2 – VFT |

RTR Vehicle Functional Static Testing TS228 TC2 Report
GIB0000006567






| | CREATED | VERIFIED | APPROVED | DISTRIBUTION |
|-----------|-----------------|----------------|-----------------|---|
| Name | Neliswa MABUNDA | Sifiso LUKHELE | Kgomotso NKOANA | Confidentiality Category <i>Restricted</i> <i>Project</i> <i>Normal</i> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> |
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| Rev | Date | Modifications Content | Writer |
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| A0 | 18/06/2024 | Creation | Neliswa MABUNDA |

Internal validations

| | Name | Function | Date | Signature |
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| Creator | Neliswa MABUNDA | EPU Manager | 18/06/2024 | X  Neliswa MABUNDA EPU Manager |
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Execution Plan

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Section 1 – Purpose / Objectives



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Section 2 – Energy Distribution

2.3 Instructions list

2.3.1 015_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 | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10002 | I | Initial conditions | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10003 | I | Car should be de-prepared with non-active cab | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10004 | I | Car should be without 400Vac shore supply | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10005 | I | All the Circuit Breakers should be OPEN | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10006 | I | Connector XBAT+ Positive and XBAT-2 Negative should not be connected to the battery | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10007 | I | Voltage Isolation | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10008 | 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 | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10009 | R | Cables are correctly connected in the Power Bus XBAT+ Positive (BCOF) and XBAT-1/ XBAT-2 Negative (ISO_BCM) | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10010 | A | Check Resistance (Ohm) between point XBAT+ Positive of the power bus (BCOF) and car body | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10011 | R | Value (Ohm) Should be infinite. There is NO Continuity between point XBAT+ Positive of the power bus (BCOF) and car body | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10012 | A | Check Resistance (Ohm) between point XBAT-1 Negative of the Power Bus (ISO_BCM) and car body | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10013 | R | Value (Ohm) Should be about 0 Ohm. There is Continuity between point XBAT-1 Negative of the Power Bus (ISO_BCM) and car body | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |

| | | | | | | | |
|-------|---|--|--|----|--|-------------------------------|-----|
| 10014 | A | Check Resistance (Ohm) between point XBAT-2 Negative of the Power Bus (ISO_BCM) and car body | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10015 | R | Value (Ohm) Should be about 0 Ohm. There is Continuity between point XBAT-1 Negative of the Power Bus (ISO_BCM) and car body | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10016 | I | Close left side cover of the Static Converter (CVS) | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10017 | A | Put Connector XBAT+ Positive and XBAT-2 Negative in the Battery | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10018 | R | Confirm the presence of battery voltage (above 80V dc) between Circuit Breaker 15Q2 point 1 and car body. (Permanent Line) | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10019 | A | Close Circuit Breaker 15Q2 (Permanent Line) | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10020 | A | Close Circuit Breaker 15Q4 (Permanent Line) | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10021 | A | Close Circuit Breaker 15Q1 (Normal Line) | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10022 | A | Close Circuit Breaker 15Q3 (Normal Line) | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10023 | I | 230Vac and 400Vac Isolation | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10024 | A | Close Circuit Breaker 13Q1 (230Vac) | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10025 | A | Close Circuit Breaker 13Q3 (230Vac) | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10026 | A | Close Circuit Breaker 13Q4 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10027 | I | Permanent and Normal Line | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10028 | A | Close Circuit Breaker 20Q1 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10029 | A | Close Circuit Breaker 18Q1 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10030 | A | Close Circuit Breaker 20Q2 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10031 | A | Close Circuit Breaker 18Q2 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10032 | A | Close Circuit Breaker 25Q6 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10033 | A | Close Circuit Breaker 27Q1 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |

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|-------|---|--|--|----|---|-------------------------------|-----|
| 10034 | A | Prior to Switching the car ON and Plugging the shore supply onto the CVS. Open the CVS Agate cover | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10035 | R | The AGATE is OFF | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10036 | I | MCE Software Upload | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10037 | A | Turn the Backup Mode Switch 27S1 to "Back Up" position | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10038 | A | Insert a USB programmed with the latest MCE Software into the MCE | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10039 | A | Close Circuit Breaker 40Q1 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10040 | A | Turn Battery Contactor Switch 18S1 to ON Position | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10041 | A | Wait for about 12 minutes while the MCE is taking the software | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10042 | A | Open Circuit Breaker 40Q1, remove the USB and Close Circuit Breaker 40Q1 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10043 | I | Low voltage watchdog and battery connection | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10044 | A | Turn Battery Contactor Switch 18S1 to Off Position | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10045 | A | Turn Driver's Master Key 30A1.S1 to Non Active Cabin | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10046 | A | Turn the Backup Mode Switch 27S1 to "Normal" position | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10047 | I | Cab Selected On Train Train Line Dev4/1 = END2 90XP14 pin 3 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10048 | A | Force [NI] Dev4/1 = 1.0 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10049 | I | 110Vdc Permanent Train Line Dev5/40 = END2 90XP14 pin 29 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10050 | R | Read Defined Variable [NI] Dev5/40 = 1.0 | | OK | 1 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10051 | I | Cab Selected On Train Train Line Dev4/1 = END2 90XP14 pin 3 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10052 | A | Force [NI] Dev4/1 = 0.0 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10053 | A | Reset circuit breaker 15Q4 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |

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|-------|---|--|--|----|---|-------------------------------|-----|
| 10054 | R | Check that relay 15K2 is not active | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10055 | I | 110Vdc Permanent Train Line Dev5/40 = END2 90XP14 pin 29 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10056 | R | Read Defined Variable [NI] Dev5/40 = 0.0 | | OK | 0 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10057 | A | Turn key 30A1.S1 to Active Cabin Position | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10058 | R | Relay 15K2 is active | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10059 | I | 110Vdc Permanent Train Line Dev5/40 = END2 90XP14 pin 29 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10060 | R | Read Defined Variable [NI] Dev5/40 = 1.0 | | OK | 1 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10061 | A | Turn Battery Contactor Switch 18S1 to ON Position | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10062 | A | Wait only for TCMS to initialize | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10063 | A | Whilst PACIS is still initializing, turn and hold 18S1 to OFF position | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10064 | R | Read Defined Variable [TT] (MPU1)li_nrg_tc2battoffreqr1__1 = 1.0 | | OK | 1 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10065 | R | Read Defined Variable [TT] (MPU1)li_nrg_tc2battoffreqr2__1 = 1.0 | | OK | 1 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10066 | A | Put Battery Contactor Switch 18S1 to normal position | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10067 | I | Battery Connection Train Line Dev2/76 = Coupler pin 012 Dev2/80 = Coupler pin 112 Dev5/79 = END2 90XP14 pin 30 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10068 | R | Read Defined Variable [NI] Dev2/76 = 1.0 | | OK | 1 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10069 | R | Read Defined Variable [NI] Dev2/80 = 1.0 | | OK | 1 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10070 | R | Read Defined Variable [NI] Dev5/79 = 1.0 | | OK | 1 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10071 | I | Battery Disconnection Train Line Dev2/77 = Coupler pin 027 Dev2/40 = Coupler pin 127 Dev5/75 = END2 90XP14 pin 31 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10072 | R | Read Defined Variable [NI] Dev2/77 = 0.0 | | OK | 0 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10073 | R | Read Defined Variable [NI] Dev2/40 = 0.0 | | OK | 0 | Paseka Ditlhakanyane - 491468 | TC2 |

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|-------|---|--|--|----|-----|-------------------------------|-----|
| 10074 | R | Read Defined Variable [NI] Dev5/75 = 0.0 | | OK | 0 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10075 | I | AC address coding and Shore Supply Mode | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10076 | A | Use the AGATE to shut down the train | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10077 | A | Remove connector -18XP11_1 from the Auxiliary Converter | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10078 | A | Check continuity between pins 51 and 52 ; and pins 63 and 64 on connector 18XP11_1 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10079 | R | Pins 51 and 52 are continuous; and pins 63 and 64 are continuous | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10080 | A | Switch ON the IES Status on the test bench to make available the IES STATUS signal in the Auxiliary Converter | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10081 | R | Check continuity between point 65 and point 70 (IES STATUS) on connector - 18XP11_1 from the Auxiliary Converter (ACU) | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10082 | A | Return the connector -18XP11_1 into the Auxiliary Converter | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10083 | A | Turn Switch "27S1" (Backup Mode Position) to 'Normal Mode' | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10084 | I | Turn the ACU Isolation Switch 18S3 to "Normal" position | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10085 | A | Turn Battery Contactor Switch "18S1" to ON Position | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10086 | I | In LV1 , check the voltage on point 2 of CB 18Q1 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10087 | R | Voltage on point 2 of CB 18Q1 | | OK | 110 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10088 | I | NOTE: When shore supply is connected to Auxiliary 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 | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10089 | A | Ensure shore supply power source is off. Input Shore Supply Connector on Auxiliary Converter and switch it on | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |

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|-------|---|---|--|----|--|-------------------------------|-----|
| 10090 | R | Auxiliary Converter is working | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10091 | R | In LV1 , check the voltage on point 2 of CB 18Q1, compare with the value read before, and see that the new value is higher than before | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10092 | 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 | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10093 | R | Phase rotation between U,V,W is correct | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10094 | R | Check 230Vac between points L and N of the plug -13XT2 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10095 | R | Check 230Vac between points L and N of the plug -13XT3 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10096 | A | Switch off the shore supply power source and remove the external shore supply | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10097 | A | Switch OFF the IES Status on the test bench to normalize the lines of status signal (IES STATUS) | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10098 | R | The battery is no longer being charged | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10099 | R | Check 0Vac between points L and N of the plug -13XT2 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10100 | R | Check 0Vac between points L and N of the plug -13XT3 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10101 | I | Battery Disconnection | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10102 | A | Turn Driver's Master Key 30A1.S1 to Non Active Cabin | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10103 | R | Battery is still connected to the Normal Line | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10104 | A | Turn Driver's Master Key 30A1.S1 to Active Cabin Position | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10105 | A | Turn Switch "27S1" (Backup Mode Position) to 'Back up Mode' | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10106 | I | Battery Disconnection Train Line Dev4/75 = END2 90XP14 pin 31 Dev2/77 = Coupler pin 027 Dev2/40 = Coupler pin 127 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |

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|-------|---|--|--|----|---|-------------------------------|-----|
| 10107 | A | Force [NI] Dev4/75 = 1.0 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10108 | R | Read Defined Variable [NI] Dev2/77 = 1.0 | | OK | 1 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10109 | R | Read Defined Variable [NI] Dev2/40 = 1.0 | | OK | 1 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10110 | R | The Normal Line is disconnected from the battery | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10111 | I | Battery Disconnection Train Line Dev4/75 = END2 90XP14 pin 31 Dev2/77 = Coupler pin 027 Dev2/40 = Coupler pin 127 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10112 | A | Force [NI] Dev4/75 = 0.0 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10113 | R | Read Defined Variable [NI] Dev2/77 = 0.0 | | OK | 0 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10114 | R | Read Defined Variable [NI] Dev2/40 = 0.0 | | OK | 0 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10115 | I | Battery Connection Train Line Dev2/76 = Coupler pin 012 Dev2/80 = Coupler pin 112 Dev5/79 = END2 90XP14 pin 30 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10116 | R | Read Defined Variable [NI] Dev2/76 = 0.0 | | OK | 0 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10117 | R | Read Defined Variable [NI] Dev2/80 = 0.0 | | OK | 0 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10118 | R | Read Defined Variable [NI] Dev5/79 = 0.0 | | OK | 0 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10119 | A | Turn Battery Contactor Switch 18S1 to ON Position | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10120 | I | Shore Supply Power ON | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10121 | A | Turn the IES STATUS toggle switch on the Testbench into IES2 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10122 | A | Ensure shore supply power source is off. Input Shore Supply Connector on Auxiliary Converter and switch it on | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |



Serial Tests Report
TS228 – TC2 – VFT
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Section 3 – TCMS Network

3.3 Instructions list

3.3.1 025_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 | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10002 | I | Initial conditions | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10003 | I | Backup Mode Switch 27S1 in "Normal" Position | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10004 | I | Car should be prepared (Battery contactor switch 18S1 in ON position) | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10005 | I | Vehicle test bench should be configured as TC1: 1. TC1 Data plugs 2. MCE switch set to TC1 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10006 | I | The test bench should be connected to the vehicle | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10007 | I | Power supply to the 25A2 BRIOM 32/16 ETH 2 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10008 | A | Close Circuit Breaker 25Q2 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10009 | R | BRIOM 25A2 is ON | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10010 | A | Check visually that ground braid is connected to BRIOM | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10011 | I | Power supply to the 25A3 BRIOM 32/16 ETH 3 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10012 | A | Close Circuit Breaker 25Q3 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10013 | R | BRIOM 25A3 is ON | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10014 | A | Check visually that ground braid is connected to BRIOM | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10015 | I | Power supply to the 25A4 BRIOM 32/16 ETH 4 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10016 | A | Close Circuit Breaker 25Q4 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10017 | R | BRIOM 25A4 is ON | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |

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|-------|---|--|--|----|--|-------------------------------|-----|
| 10018 | A | Check visually that ground braid is connected to BRIOM | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10019 | I | Power supply to the 25A5 BRIOM 32/16 ETH 5 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10020 | A | Close Circuit Breaker 25Q5 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10021 | R | BRIOM 25A5 is ON | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10022 | A | Check visually that ground braid is connected to BRIOM | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10023 | I | Power supply to the 25A6 BRIOM 32/16 ETH 6 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10024 | A | Close Circuit Breaker 25Q6 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10025 | R | BRIOM 25A6 is ON | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10026 | A | Check visually that ground braid is connected to BRIOM | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10027 | I | Power supply to the 25A7 BRIOM 32/16 ETH 7 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10028 | A | Close Circuit Breaker 25Q7 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10029 | R | BRIOM 25A7 is ON | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10030 | A | Check visually that ground braid is connected to BRIOM | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10031 | I | Power supply to the 25A11 SWITCH ETHERNET (CRS2) | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10032 | A | Close Circuit Breaker 25Q11 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10033 | R | CRS2 25A11 is ON | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10034 | I | Power supply to the 25A12 SWITCH ETHERNET (CRS3) | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10035 | A | Close Circuit Breaker 25Q12 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10036 | R | CRS3 25A12 is ON | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10037 | I | Power supply to the 25A15 TRAIN ROUTER SWITCH (TRS) | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10038 | A | Close Circuit Breaker 25Q15 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |

| | | | | | | | |
|-------|---|---|---|----|--|-------------------------------|-----|
| 10039 | R | TRS 25A15 is ON | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10040 | A | Close Circuit Breaker 25Q14 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10041 | A | Close Circuit Breaker 25Q10 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10042 | I | Power supply to the 25A10 SWITCH ETHERNET (CRS1) | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10043 | R | CRS1 25A10 is ON | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10044 | I | Power supply to the 25A14 ETHERNET REPEATER (TBR) | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10045 | R | TBR 25A14 is ON | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10046 | I | Power supply to the 25A17 DDU ACE | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10047 | A | Close Circuit Breaker 25Q17 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10048 | R | The DDU is ON | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10049 | I | DDU Software Upload | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10050 | I | Perform the following procedure to upload software on the DDU |  | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10051 | I | Ethernet Loop | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10052 | A | Check that the LED on ETH0 of the TBR is flashing | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10053 | R | The TBR has LED on port ETH0 flashing | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10054 | A | For each CRS, check that the LEDs on ports X3 and X4 are flashing | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10055 | R | CRS1 has LEDs on ports X3 and X4 flashing | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10056 | R | CRS2 has LEDs on ports X3 and X4 flashing | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10057 | R | CRS3 has LEDs on ports X3 and X4 flashing | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10058 | A | Check that the TRS has LEDs on ports ETH4 and ETH5 flashing | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10059 | R | The TRS has LEDs on ports ETH4 and ETH5 flashing | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |



| | | | | | | | |
|-------|---|--|--|----|--|----------------------------------|-----|
| 10060 | R | Check on the DDU that all Router Switches are available on the network | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
|-------|---|--|--|----|--|----------------------------------|-----|



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Section 4 – Cabin Control

4.3 Instructions list

4.3.1 020_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 | | Tshembhani Khosa - 446920 | TC2 |
| 10002 | I | Initial Conditions | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10003 | I | Vehicle test bench should be configured as TC1: 1. TC1 Data plugs 2. MCE should reflect as MPU1 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10004 | I | Shore Supply is connected and ON | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10005 | I | Car should be prepared | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10006 | I | Cabin should be active | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10007 | I | Use the voltage detector/ magnetic stick to check whether a relay is energized or not | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10008 | I | Normal Mode - Active Cabin | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10009 | R | Read Defined Variable [TT] (MPU1)li_cab_tc2masterkey__1 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10010 | I | Cab Active TC2 Train Line Dev5/2 = END2 90XP14 pin 4 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10011 | R | Read Defined Variable [NI] Dev5/2 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10012 | I | Master Key TC2 Train Line Dev5/17 = END2 90XP14 pin 17 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10013 | R | Read Defined Variable [NI] Dev5/17 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10014 | R | Read Defined Variable [TT] (MPU1)li_cab_tc2keyrelay1__1 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10015 | R | Read Defined Variable [TT] (MPU1)li_cab_tc2keyrelay2__1 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10016 | R | Read Defined Variable [TT] (MPU1)li_cab_tc2keyrelay3 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10017 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc2KeyRelayR4 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |

| | | | | | | | |
|-------|---|---|--|----|---|------------------------------|-----|
| 10018 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc2CabinActiveR1 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10019 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc2CabinActiveR2 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10020 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc2CabinActiveR3 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10021 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc2CabinActiveR4 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10022 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc2CabinActiveR5 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10023 | R | Read Defined Variable [TT] (MPU1)li_cab_tc2cabinactiveno = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10024 | A | Force [TT] (MPU1)lo_cab_tc2cabdisconnectr1 = 1.0 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10025 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc2CabinActiveR1 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10026 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc2CabinActiveR2 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10027 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc2CabinActiveR3 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10028 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc2CabinActiveR4 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10029 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc2CabinActiveR5 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10030 | R | Read Defined Variable [TT] (MPU1)li_cab_tc2cabinactiveno = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10031 | I | Cab Active TC2 Train Line Dev5/2 = END2 90XP14 pin 4 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10032 | R | Read Defined Variable [NI] Dev5/2 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10033 | A | Force [TT] (MPU1)lo_cab_tc2cabdisconnectr1 = 0.0 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10034 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc2CabinActiveR1 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10035 | I | Normal Mode - Non-Active Cabin - 20K2 Memory | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10036 | A | Turn Driver's Master Key 30A1.S1 to Non- Active Cabin Position | | OK | | Tshembhani Khosa - 446920 | TC2 |

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|-------|---|---|--|----|---|------------------------------|-----|
| 10037 | I | Master Key TC2 Train Line Dev5/17 = END2 90XP14 pin 17 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10038 | R | Read Defined Variable [NI] Dev5/17 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10039 | R | Read Defined Variable [TT] (MPU1)li_cab_tc2masterkey__1 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10040 | R | Read Defined Variable [TT] (MPU1)li_cab_tc2keyrelayr1__1 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10041 | R | Read Defined Variable [TT] (MPU1)li_cab_tc2keyrelayr2__1 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10042 | R | Read Defined Variable [TT] (MPU1)li_cab_tc2keyrelayr3 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10043 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc2KeyRelayR4 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10044 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc2CabinActiveR1 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10045 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc2CabinActiveR2 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10046 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc2CabinActiveR3 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10047 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc2CabinActiveR4 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10048 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc2CabinActiveR5 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10049 | R | Read Defined Variable [TT] (MPU1)li_cab_tc2cabinactiveno = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10050 | A | Force [TT] (MPU1)lo_cab_tc2cabdisconnectr2 = 1.0 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10051 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc2CabinActiveR1 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10052 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc2CabinActiveR2 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10053 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc2CabinActiveR3 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10054 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc2CabinActiveR4 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10055 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc2CabinActiveR5 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |

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|-------|---|--|--|----|---|------------------------------|-----|
| 10056 | R | Read Defined Variable [TT] (MPU1)li_cab_tc2cabinactiveno = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10057 | A | Release [TT] (MPU1)lo_cab_tc2cabdisconnectr1 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10058 | A | Release [TT] (MPU1)lo_cab_tc2cabdisconnectr2 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10059 | I | Other Cab Active | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10060 | R | Read Defined Variable [TT] (MPU1)li_cab_tc2othercabinactive__1 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10061 | I | Cab Selected on Train Line Dev4/1 = END2 90XP14 pin 3 Dev2/1 = COUPLER pin 040 Dev2/2 = COUPLER pin 140 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10062 | A | Force [NI] Dev4/1 = 1.0 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10063 | R | Read Defined Variable [NI] Dev2/1 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10064 | R | Read Defined Variable [NI] Dev2/2 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10065 | R | Read Defined Variable [TT] (MPU1)li_cab_tc2othercabinactive__1 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 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 | | Tshembhani Khosa - 446920 | TC2 |
| 10067 | A | Force [NI] Dev4/1 = 0.0 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10068 | R | Read Defined Variable [NI] Dev2/1 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10069 | R | Read Defined Variable [NI] Dev2/2 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10070 | R | Read Defined Variable [TT] (MPU1)li_cab_tc2othercabinactive__1 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10071 | I | Backup Mode - Active Cabin | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10072 | A | Turn Switch '27S1' (Backup Mode Position) to 'BACKUP' Position | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10073 | A | Turn Driver's Master Key 30A1.S1 to Active Cabin Position | | OK | | Tshembhani Khosa - 446920 | TC2 |

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|-------|---|---|--|----|---|------------------------------|-----|
| 10074 | I | Cab Selected on Train Train Line Dev5/1 = END2 90XP14 pin 3 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10075 | R | Read Defined Variable [NI] Dev5/1 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10076 | R | Check Relay "20K1" is Energized | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10077 | R | Check Relay "20K1a" is Energized | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10078 | R | Check Relay "20K1b" is Energized | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10079 | R | Check Relay "20K1c" is Energized | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10080 | R | Check Relay "20K2" is Energized | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10081 | R | Check Relay "20K11" is Energized | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10082 | R | Check Relay "20K12a" is Energized | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10083 | R | Check Relay "20K12b" is Energized | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10084 | R | Check Relay "20K10b" is Energized | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10085 | I | Backup Mode- Non-Active Cabin | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10086 | A | Turn Driver's Master Key 30A1.S1 to Non- Active Cabin Position | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10087 | I | Cab Selected on Train Train Line Dev5/1 = END2 90XP14 pin 3 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10088 | R | Read Defined Variable [NI] Dev5/1 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10089 | R | Check Relay "20K1" is De-energized | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10090 | R | Check Relay "20K1a" is De-energized | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10091 | R | Check Relay "20K1b" is De-energized | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10092 | R | Check Relay "20K1c" is De-energized | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10093 | R | Check Relay "20K2" is De-energized | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10094 | R | Check Relay "20K11" is De-energized | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10095 | R | Check Relay "20K12a" is De-energized | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10096 | R | Check Relay "20K12b" is De-energized | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10097 | R | Check Relay "20K10b" is De-energized | | OK | | Tshembhani Khosa - 446920 | TC2 |

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|-------|---|--|--|----|---|---------------------------|-----|
| 10098 | I | Automatic Start | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10099 | A | Turn Battery Contactor Switch 18S1" to OFF position | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10100 | A | Turn Switch '27S1' (Backup Mode Position) to 'Normal' Position | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10101 | A | Turn Driver's Master Key 30A1.S1 to Active Cabin Position | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10102 | A | Turn Battery Contactor Switch 18S1" to ON position - Allow time for TCMS to start up | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10103 | A | Close Circuit Breaker 84Q1 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10104 | A | Press and hold the Automatic Start Pushbutton 20S1 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10105 | R | Read Defined Variable [TT] (MPU1)li_cab_tc2automaticstartr1 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10106 | R | Read Defined Variable [TT] (MPU1)li_cab_tc2automaticstartr2 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10107 | R | Read Defined Variable [TT] (MPU1)lo_cab_tc2automaticstartr1 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10108 | R | Read Defined Variable [TT] (MPU1)lo_cab_tc2automaticstartr2 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10109 | R | Check that the pushbutton lamp on 20S1 is ON | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10110 | A | Release the Automatic Start Pushbutton 20S1 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10111 | R | Read Defined Variable [TT] (MPU1)li_cab_tc2automaticstartr1 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10112 | R | Read Defined Variable [TT] (MPU1)li_cab_tc2automaticstartr2 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10113 | R | Read Defined Variable [TT] (MPU1)lo_cab_tc2automaticstartr1 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10114 | R | Read Defined Variable [TT] (MPU1)lo_cab_tc2automaticstartr2 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10115 | I | Standby Mode | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10116 | A | Turn Driver's Master Key 30A1.S1 to Non-Active Cabin Position | | OK | | Tshembhani Khosa - 446920 | TC2 |

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|-------|---|---|--|----|---|---------------------------|-----|
| 10117 | A | Press and hold the Standby State pushbutton 20S2 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10118 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc2ISMR1__1 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10119 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc2ISMR2__1 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10120 | A | Release the Standby State pushbutton 20S2 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10121 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc2ISMR1__1 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10122 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc2ISMR2__1 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10123 | A | Force [TT] (MPU1)lo_cab_tc2ismlamp = 1.0 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10124 | R | The Standby State pushbutton lamp 20S2 is ON | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10125 | A | Release [TT] (MPU1)lo_cab_tc2ismlamp | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10126 | R | The Standby State pushbutton lamp 20S2 is OFF | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10127 | A | Turn Driver's Master Key 30A1.S1 to Active Cabin Position | | OK | | Tshembhani Khosa - 446920 | TC2 |



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Section 5 – Internal Lighting

5.3 Instructions list

5.3.1 052_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=052) | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10002 | I | Initial Conditions | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10003 | I | Car should be prepared | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10004 | I | Key 30A1.S1 should be in Active Cabin position | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10005 | I | Circuit Breakers | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10006 | A | Close Circuit Breaker 52Q1 | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10007 | A | Close Circuit Breaker 52Q2 | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10008 | A | Close Circuit Breaker 52Q3 | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10009 | A | Close Circuit Breaker 52Q4 | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10010 | A | Close Circuit Breaker 52Q5 | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10011 | A | Close Circuit Breaker 52Q6 | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10012 | I | Cab Ceiling Lighting | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10013 | A | Turn battery contactor switch 18S1 to OFF position | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10014 | A | Wait 3 minutes for cab lights to switch off | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10015 | R | All cabin ceiling lights are OFF (52U40, 52U41,52U42) | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10016 | R | Both cab ceiling light pushbutton lamps are OFF (52S3 Left and 52S4 Right) | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10017 | A | Push the cab lighting LEFT side button (52S3) | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10018 | I | Wait 3 minutes for the lights to turn off. Continue with the following steps while waiting | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10019 | R | Cabin ceiling light 52U40 is ON | | OK | | Sicelo Mtolo - 525130 | TC2 |

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|-------|---|---|--|----|--|---------------------------------|-----|
| 10020 | R | Cabin ceiling light 52U41 is ON | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10021 | R | Cabin ceiling light 52U42 is ON | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10022 | R | Left pushbutton lamp 52S3 is ON | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10023 | R | Right pushbutton lamp 52S4 is ON | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10024 | A | Press and hold the cab lighting LEFT side button (52S3) | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10025 | R | The intensity of cabin ceiling light 52U40 decreases | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10026 | R | The intensity of cabin ceiling light 52U41 decreases | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10027 | R | The intensity of cabin ceiling light 52U42 decreases | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10028 | A | Release cab lighting LEFT side button (52S3) | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10029 | I | After the 180s (3 min) timer is expired | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10030 | R | Cabin ceiling light 52U40 is OFF | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10031 | R | Cabin ceiling light 52U41 is OFF | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10032 | R | Cabin ceiling light 52U42 is OFF | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10033 | R | Left pushbutton lamp 52S3 is OFF | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10034 | R | Right pushbutton lamp 52S4 is OFF | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10035 | A | Push the cab lighting RIGHT side button (52S4) | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10036 | R | Cabin ceiling light 52U40 is ON | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10037 | R | Cabin ceiling light 52U41 is ON | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10038 | R | Cabin ceiling light 52U42 is ON | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10039 | R | Right pushbutton lamp 52S4 is ON | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10040 | A | Push the cab lighting RIGHT side button (52S4) | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10041 | R | Cabin ceiling light 52U40 is OFF | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10042 | R | Cabin ceiling light 52U41 is OFF | | OK | | Sicelo Mtolo - 525130 | TC2 |

| | | | | | | | |
|-------|---|--|--|----|--|-----------------------|-----|
| 10043 | R | Cabin ceiling light 52U42 is OFF | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10044 | R | Right pushbutton lamp 52S4 is OFF | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10045 | I | Turn battery contactor switch 18S1 to ON position | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10046 | R | In the saloon, all RIGHT side emergency lights are ON on all light modules | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10047 | R | In the saloon, all LEFT side emergency lights are ON on all light modules | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10048 | R | Both cab ceiling light pushbutton lamps are OFF (52S3 Left and 52S4 Right) | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10049 | A | Press and hold the cab lighting RIGHT side button (52S4) | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10050 | R | The intensity of cabin ceiling light 52U40 decreases | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10051 | R | The intensity of cabin ceiling light 52U41 decreases | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10052 | R | The intensity of cabin ceiling light 52U42 decreases | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10053 | A | Release cab lighting LEFT side button (52S4) | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10054 | A | Open Circuit Breaker 52Q6 | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10055 | A | Press and hold the Lamp Test pushbutton 84S1 | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10056 | R | Both cab ceiling light pushbutton lamps are ON (52S3 Left and 52S4 Right) | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10057 | A | Release the Lamp Test pushbutton 84S1 | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10058 | R | Both cab ceiling light pushbutton lamps are OFF (52S3 Left and 52S4 Right) | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10059 | A | Close Circuit Breaker 52Q6 | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10060 | I | Cleaning Light Command | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10061 | I | Turn battery contactor switch 18S1 to OFF position | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10062 | A | Turn Cleaning Staff Lights Switch 52S6 to ON position | | OK | | Sicelo Mtolo - 525130 | TC2 |

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|-------|---|---|--|----|---|-----------------------|-----|
| 10063 | I | Lighting 33% Train Line Dev5/8 = END2 90XP15 pin 27 | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10064 | R | Read Defined Variable [NI] Dev5/8 = 1.0 | | OK | 1 | Sicelo Mtolo - 525130 | TC2 |
| 10065 | R | The saloon RIGHT side emergency lights (low intensity) are ON on all light modules | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10066 | R | The saloon LEFT side emergency lights (low intensity) are ON on all light modules | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10067 | A | Open Circuit Breaker 52Q5 | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10068 | I | Lighting 33% Train Line Dev5/8 = END2 90XP15 pin 27 | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10069 | R | Read Defined Variable [NI] Dev5/8 = 0.0 | | OK | 0 | Sicelo Mtolo - 525130 | TC2 |
| 10070 | R | The saloon RIGHT side emergency lights (low intensity) are OFF on all light modules | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10071 | R | The saloon LEFT side emergency lights (low intensity) are OFF on all light modules | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10072 | A | Close Circuit Breaker 52Q5 | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10073 | I | Main Light Command | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10074 | A | Turn Cleaning Staff Lights Switch 52S6 to ON position | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10075 | I | Lighting 33% Train Line Dev5/8 = END2 90XP15 pin 27 | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10076 | R | Read Defined Variable [NI] Dev5/8 = 1.0 | | OK | 1 | Sicelo Mtolo - 525130 | TC2 |
| 10077 | R | All saloon emergency lights (low intensity) are ON on all light modules (Left+Right) | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10078 | I | Turn battery contactor switch 18S1 to ON position - allow time for TCMS to initialize | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10079 | A | Force [TT] (MPU1)lo_lgt_tc2mainlgtcmd = 1.0 | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10080 | I | Lighting 33% Train Line Dev5/8 = END2 90XP15 pin 27 | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10081 | R | Read Defined Variable [NI] Dev5/8 = 0.0 | | OK | 0 | Sicelo Mtolo - 525130 | TC2 |

| | | | | | | | |
|-------|---|--|--|----|---|-----------------------|-----|
| 10082 | I | Main Lighting Command Train Line Dev5/24 = END2 90XP15 pin 26 | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10083 | R | Read Defined Variable [NI] Dev5/24 = 1.0 | | OK | 1 | Sicelo Mtolo - 525130 | TC2 |
| 10084 | R | The saloon RIGHT side main lighting (high intensity) is ON on all light modules | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10085 | R | The saloon LEFT side main lighting (high intensity) is ON on all light modules | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10086 | A | Release [TT] (MPU1)lo_lgt_tc2mainlgtcmd | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10087 | I | Main Lighting Command Train Line Dev5/24 = END2 90XP15 pin 26 | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10088 | R | Read Defined Variable [NI] Dev5/24 = 0.0 | | OK | 0 | Sicelo Mtolo - 525130 | TC2 |
| 10089 | I | Lighting 33% Train Line Dev5/8 = END2 90XP15 pin 27 | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10090 | R | Read Defined Variable [NI] Dev5/8 = 0.0 | | OK | 0 | Sicelo Mtolo - 525130 | TC2 |
| 10091 | R | All saloon emergency lights (low intensity) are ON on all light modules (Left+Right) | | OK | | Sicelo Mtolo - 525130 | TC2 |



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Section 6 – PACIS System

6.3 Instructions list

6.3.1 054_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 | | Sqiniseko Xulu - 493646 | TC2 |
| 10002 | I | Initial conditions | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10003 | I | Car must be prepared - battery contactor 18S1 closed | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10004 | I | Circuit Breakers | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10005 | A | Close Circuit Breaker 54Q1 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10006 | A | Close Circuit Breaker 54Q2 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10007 | A | Close Circuit Breaker 54Q3 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10008 | A | Close Circuit Breaker 54Q10 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10009 | A | Close Circuit Breaker 54Q11 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10010 | A | Close Circuit Breaker 54Q13 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10011 | A | Close Circuit Breaker 54Q15 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10012 | A | Close Circuit Breaker 55Q1 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10013 | A | Close Circuit Breaker 55Q2 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10014 | A | Close Circuit Breaker 55Q3 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10015 | I | Train Router Switch 'TRS' | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10016 | R | TRS1 is ON | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10017 | I | Power Supply to UMC Rack | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10018 | R | All cards on the UMC Rack are ON - PS, EBM, DPC-IOC, NVR, Media Server | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10019 | I | Driver Control Panel | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10020 | R | Driver Control Panel is ON | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10021 | I | Ethernet Switch 'CRS1' | | OK | | Sqiniseko Xulu - 493646 | TC2 |

| | | | | | | | |
|-------|---|--|--|----|------|------------------------------|-----|
| 10022 | R | CRS1 is ON | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10023 | I | DPAL-1 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10024 | R | DPAL-1 is ON | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10025 | I | DPAL-2 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10026 | R | DPAL-2 is ON | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10027 | I | Impedance of Loudspeaker | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10028 | I | Saloon Speakers Commanded by DPAL-1 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10029 | A | Measure the impedance on connector '54XP1_X4' between pins: z 32 (+) and z30 (-) | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10030 | R | Impedance Result Max : $x \leq 24 \Omega$ | | OK | 23.1 | Sqiniseko Xulu - 493646 | TC2 |
| 10031 | I | Saloon Speakers Commanded by DPAL-2 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10032 | A | Measure the impedance on connector '54XP2_X4' between pins: z32(+) and z30 (-) | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10033 | R | Impedance Result Max : $x \leq 32 \Omega$ | | OK | 31 | Sqiniseko Xulu - 493646 | TC2 |
| 10034 | I | Front Display 'FRT1' | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10035 | R | The PWR (power) LED is ON on the Front Display FRT1 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10036 | I | Lateral Display 'LAT1' | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10037 | R | The PWR (power) LED is ON on the Lateral Display LAT1 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10038 | I | Lateral Display 'LAT2' | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10039 | R | The PWR (power) LED is ON on the Lateral Display LAT2 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10040 | I | Interior Display 'INT1' | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10041 | R | The PWR (power) LED is ON on the Interior Display INT1 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10042 | I | Interior Display 'INT2' | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10043 | R | The PWR (power) LED is ON on the Interior Display INT2 | | OK | | Sqiniseko Xulu - 493646 | TC2 |



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Section 7 – Dead Man


7.3 Instructions list


7.3.1 060_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 | | Sicelo Mtolo - 525130 | TC2 |
| 10002 | I | Initial conditions | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10003 | I | TC car is in service and cabin should be active | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10004 | A | Position the "Dead Man Override" switch to "Normal" position. | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10005 | I | Circuit Breakers | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10006 | A | Close Circuit Breaker 60Q1 | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10007 | A | Close Circuit Breaker 30Q3 | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10008 | I | Buzzer 60W1 | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10009 | A | Force [TT] (MPU1)lo_dsd_tc2dmbuzzerr1 = 1.0 | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10010 | R | The buzzer 60W1 is ON. A noise coming from the buzzer can be clearly heard in the cabin. | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10011 | A | Release [TT] (MPU1)lo_dsd_tc2dmbuzzerr1 | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10012 | R | The buzzer 60W1 is OFF. No noise coming from buzzer. | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10013 | A | Force [TT] (MPU1)lo_dsd_tc2dmbuzzerr2 = 1.0 | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10014 | R | The buzzer 60W1 is ON. A noise coming from the buzzer can be clearly heard in the cabin. | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10015 | A | Release [TT] (MPU1)lo_dsd_tc2dmbuzzerr2 | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10016 | R | The buzzer 60W1 is OFF. No noise coming from buzzer. | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10017 | I | Dead Man Lamp | | OK | | Sicelo Mtolo - 525130 | TC2 |

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|-------|---|--|---|----|---|-----------------------|-----|
| 10018 | A | Position the Running Direction switch to "FORWARD" | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10019 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc2ebdeadmanrelayr1 = 1.0 | | OK | 1 | Sicelo Mtolo - 525130 | TC2 |
| 10020 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc2ebdeadmanrelayr2 = 1.0 | | OK | 1 | Sicelo Mtolo - 525130 | TC2 |
| 10021 | A | Position the Running Direction switch 30A1.S1 in "Neutral" | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10022 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc2ebdeadmanrelayr1 = 0.0 | | OK | 0 | Sicelo Mtolo - 525130 | TC2 |
| 10023 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc2ebdeadmanrelayr2 = 0.0 | | OK | 0 | Sicelo Mtolo - 525130 | TC2 |
| 10024 | R | On the alarm module, check the Dead man deactivated symbol is OFF. |  | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10025 | A | Force [TT] (MPU1)lo_dsd_tc2deadmanlampr1 = 1.0 | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10026 | R | On the alarm module, check the Dead man deactivated symbol is ON | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10027 | A | Release [TT] (MPU1)lo_dsd_tc2deadmanlampr1 | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10028 | R | On the alarm module, check the Dead man deactivated symbol is OFF. | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10029 | A | Force [TT] (MPU1)lo_dsd_tc2deadmanlampr2 = 1.0 | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10030 | R | On the alarm module, check the Dead man deactivated symbol is ON | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10031 | A | Release [TT] (MPU1)lo_dsd_tc2deadmanlampr2 | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10032 | R | On alarm module, check the Dead man deactivated symbol is OFF. | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10033 | I | DSD function | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10034 | A | Position the Running Direction switch to "FORWARD" | | OK | | Sicelo Mtolo - 525130 | TC2 |

| | | | | | | | |
|-------|---|--|---|----|---|-----------------------|-----|
| 10035 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc2ebdeadmanrelayr1 = 0.0 | | OK | 0 | Sicelo Mtolo - 525130 | TC2 |
| 10036 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc2ebdeadmanrelayr2 = 0.0 | | OK | 0 | Sicelo Mtolo - 525130 | TC2 |
| 10037 | A | Timer 5.0 S | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10038 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc2ebdeadmanrelayr1 = 1.0 | | OK | 1 | Sicelo Mtolo - 525130 | TC2 |
| 10039 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc2ebdeadmanrelayr2 = 1.0 | | OK | 1 | Sicelo Mtolo - 525130 | TC2 |
| 10040 | R | On alarm module, check the Dead man deactivated symbol is ON |  | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10041 | A | Press and hold the dead man button 60S3 on the driver desk | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10042 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc2ebdeadmanrelayr1 = 0.0 | | OK | 0 | Sicelo Mtolo - 525130 | TC2 |
| 10043 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc2deadmanr1 = 1.0 | | OK | 1 | Sicelo Mtolo - 525130 | TC2 |
| 10044 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc2deadmanr2 = 1.0 | | OK | 1 | Sicelo Mtolo - 525130 | TC2 |
| 10045 | R | On the alarm module, check the Dead man deactivated symbol is OFF. | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10046 | A | Release the dead man button 60S3 | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10047 | A | Timer 5.0 S | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10048 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc2ebdeadmanrelayr1 = 1.0 | | OK | 1 | Sicelo Mtolo - 525130 | TC2 |
| 10049 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc2deadmanr1 = 0.0 | | OK | 0 | Sicelo Mtolo - 525130 | TC2 |
| 10050 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc2deadmanr2 = 0.0 | | OK | 0 | Sicelo Mtolo - 525130 | TC2 |
| 10051 | R | On alarm module, check the Dead Man deactivated symbol is ON | | OK | | Sicelo Mtolo - 525130 | TC2 |

| | | | | | | | |
|-------|---|--|---|----|---|-----------------------|-----|
| 10052 | A | Press and hold the dead man switch, which is positioned on master controller. | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10053 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc2ebdeadmanrelayr1 = 0.0 | | OK | 0 | Sicelo Mtolo - 525130 | TC2 |
| 10054 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc2ebdeadmanr1 = 1.0 | | OK | 1 | Sicelo Mtolo - 525130 | TC2 |
| 10055 | R | On the alarm module, check the Dead man deactivated symbol is OFF. | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10056 | A | Release the dead man button on the master controller | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10057 | A | Timer 5.0 S | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10058 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc2ebdeadmanrelayr1 = 1.0 | | OK | 1 | Sicelo Mtolo - 525130 | TC2 |
| 10059 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc2ebdeadmanr1 = 0.0 | | OK | 0 | Sicelo Mtolo - 525130 | TC2 |
| 10060 | R | On alarm module, check the Dead Man deactivated symbol is ON | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10061 | I | DSD Override indication | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10062 | R | On the alarm module, verify that the Dead Man override (60H2) symbol is OFF. |  | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10063 | A | Press and hold dead man button 60S3 | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10064 | A | Position the "Dead Man Override" switch to "Override" position (do not release the dead man device actuated in the previous step). | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10065 | R | On the alarm module, verify that the Dead Man override (60H2) symbol is ON |  | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10066 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc2ebdeadmanrelayr1 = 1.0 | | OK | 1 | Sicelo Mtolo - 525130 | TC2 |
| 10067 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc2ebdeadmanoverridr1 = 1.0 | | OK | 1 | Sicelo Mtolo - 525130 | TC2 |
| 10068 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc2ebdeadmanoverridr2 = 1.0 | | OK | 1 | Sicelo Mtolo - 525130 | TC2 |

| | | | | | | | |
|-------|---|---|---|----|---|-----------------------|-----|
| 10069 | A | Release the dead man button | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10070 | R | On the alarm module, verify that the Dead Man override (60H2) symbol is ON |  | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10071 | A | Position the "Dead Man Override" switch to "Normal" position. | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10072 | R | On the alarm module, verify that the Dead Man override (60H2) symbol is OFF | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10073 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc2deadmanoverridr1 = 0.0 | | OK | 0 | Sicelo Mtolo - 525130 | TC2 |
| 10074 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc2deadmanoverridr2 = 0.0 | | OK | 0 | Sicelo Mtolo - 525130 | TC2 |
| 10075 | R | On alarm module, check the Dead man deactivated (60H1) symbol is ON | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10076 | A | Position the Running Direction switch 30A1.S1 in "Neutral" | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10077 | R | On alarm module, check the Dead man deactivated symbol is OFF | | OK | | Sicelo Mtolo - 525130 | TC2 |



| | | |
|--|--|-----------------------------|
| Serial Tests Report TS228 – TC2 – VFT RTR Vehicle Functional Static Testing Report | Document Reference GIB0000006567 Version: A0 | Emission date 18/06/2024 |
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Section 8 – External Signaling

8.3 Instructions list

8.3.2 070_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 | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10002 | I | Initial Conditions | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10003 | I | The air in the main pipe should be at least 4 bar | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10004 | I | Start of Test | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10005 | I | The pressure setting of point H1.12 must be set to 4 bar | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10006 | R | Enter the value measured above | | OK | 4.9 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10007 | R | Read Defined Variable [TT] (MPU1)Li_SGL_Tc2WarningHootersR1 = 1.0 | | OK | 1 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10008 | R | Read Defined Variable [TT] (MPU1)Li_SGL_Tc2WarningHootersR2 = 1.0 | | OK | 1 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10009 | A | Press the foot pedal 57A13.S1 to actuate the horn and maintain it | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10010 | R | Horn sound can be heard at 100m distance from the cab | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10011 | R | Read Defined Variable [TT] (MPU1)Li_SGL_Tc2WarningHootersR1 = 0.0 | | OK | 0 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10012 | R | Read Defined Variable [TT] (MPU1)Li_SGL_Tc2WarningHootersR2 = 0.0 | | OK | 0 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10013 | A | Release the foot heater pedal | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |


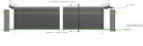
| | | | | | | | |
|-------|---|--|--|----|---|---------------------------------------|-----|
| 10014 | R | Horn sound stops | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10015 | R | Read Defined Variable [TT] (MPU1)Li_SGL_Tc2WarningHootersR1 = 1.0 | | OK | 1 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10016 | R | Read Defined Variable [TT] (MPU1)Li_SGL_Tc2WarningHootersR2 = 1.0 | | OK | 1 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10017 | A | Actuate the low pitch horn by pressing down the valve H1.3.1 under the driver's desk | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10018 | R | The horn sound can be heard in low pitch | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10019 | A | Release the valve H1.3.1 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10020 | R | Horn sound stops | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10021 | I | Electric Horn Test | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10022 | A | Press the button 71S1 and maintain it | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10023 | R | The sound of the whistle can be heard at least 20m from the cab | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10024 | R | Read Defined Variable [TT] (MPU1)Li_SGL_Tc2WarningWhistleR1 = 1.0 | | OK | 1 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10025 | R | Read Defined Variable [TT] (MPU1)Li_SGL_Tc2WarningWhistleR2 = 1.0 | | OK | 1 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10026 | A | Release the button 71S1 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10027 | R | Whistle sound stops | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10028 | R | Read Defined Variable [TT] (MPU1)Li_SGL_Tc2WarningWhistleR1 = 0.0 | | OK | 0 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10029 | R | Read Defined Variable [TT] (MPU1)Li_SGL_Tc2WarningWhistleR2 = 0.0 | | OK | 0 | Hlawulani Nick Mabundzane - 418320 | TC2 |

8.3.1 070_SIG-External Signaling

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 | | Tshembhani Khosa - 446920 | TC2 |
| 10002 | I | Use the image below for reference throughout the procedure |  | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10003 | I | Initial Conditions | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10004 | A | Turn IES switch on Test bench to ON position | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10005 | I | Shore Supply is connected to the car | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10006 | I | TC1 car prepared and cab active | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10007 | I | Circuit Breakers | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10008 | A | Close Circuit Breaker 70Q1 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10009 | A | Close Circuit Breaker 70Q2 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10010 | A | Close Circuit Breaker 70Q3 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10011 | A | Close Circuit Breaker 72Q4 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10012 | A | Close Circuit Breaker 75Q1 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10013 | A | Close Circuit Breaker 72Q2 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10014 | I | Left Platform and Head Lights | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10015 | A | Check that the following external lights on the LEFT are ON: | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10016 | R | Platform lights 70H12 white LEDs | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10017 | R | Platform lights 70H5 while light | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10018 | R | Head lights 70H3 white light | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10019 | I | Right Platform and Head Lights | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10020 | A | Check that the following external lights on the RIGHT are on: | | OK | | Tshembhani Khosa - 446920 | TC2 |

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|-------|---|---|--|----|---|---------------------------|-----|
| | | | | | | | |
| 10021 | R | Platform lights 70H11 white LEDs | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10022 | R | Platform lights 70H6 while light | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10023 | R | Head lights 70H4 white light | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10024 | I | Back Lights | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10025 | A | Turn key 30A1.S1 to Non-Active Cabin Position | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10026 | A | Reset Circuit Breaker 20Q2 (On and Off) | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10027 | R | All white lights, on the LEFT and Right side are OFF | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10028 | R | Left red light 70H7 is ON | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10029 | R | Right red light 70H9 is ON | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10030 | R | Red LEDs on Platform light 70H11 are ON | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10031 | I | Main lights and Dimming | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10032 | A | Switch the External lights switch 70S2 to "Bright Light" position | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10033 | R | The External lights switch 70S2 lamp is ON | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10034 | R | Read Defined Variable [TT] (MPU1)li_sgl_tc2headlight1 = 0.00 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10035 | R | Read Defined Variable [TT] (MPU1)li_sgl_tc2headlight2 = 0.00 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10036 | R | The headlights 70H3 and 70H4 are in bright light configuration | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10037 | A | Switch the External lights switch 70S2 to "Normal" or "Dimmed" position | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10038 | R | Read Defined Variable [TT] (MPU1)li_sgl_tc2headlight1 = 1.00 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10039 | R | Read Defined Variable [TT] (MPU1)li_sgl_tc2headlight2 = 1.00 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10040 | R | The External lights switch lamp 70S2 is OFF | | OK | | Tshembhani Khosa - 446920 | TC2 |

| | | | | | | | |
|-------|---|--|---|----|--|---------------------------|-----|
| 10041 | R | The headlights 70H3 and 70H4 are in normal/dimmed configuration | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10042 | I | Sunshade adjustment settings | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10043 | 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 | | Tshembhani Khosa - 446920 | TC2 |
| 10044 | 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 | | Tshembhani Khosa - 446920 | TC2 |
| 10045 | 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 | | Tshembhani Khosa - 446920 | TC2 |
| 10046 | A | Turn the Sunshade Control Switch 72S3 to position 1 (Up) and maintain it | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10047 | R | The sunshade stops at the upper position that was set above. | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10048 | 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 | | Tshembhani Khosa - 446920 | TC2 |
| 10049 | A | Turn the Sunshade Control Switch 72S3 to position 2 (down) and maintain it | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10050 | R | The sunshade stops at the lower position that was set above. | | OK | | Tshembhani Khosa - 446920 | TC2 |



Serial Tests Report
TS228 – TC2 – VFT
RTR Vehicle Functional Static Testing Report

Document Reference
GIB0000006567
Version: A0

Emission date
18/06/2024

Section 9 – Rescue Mode and Emergency Disconnection

9.3 Instructions list

9.3.1 027_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=027) | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10002 | I | Initial Conditions | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10003 | I | Car is powered OFF | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10004 | I | Backup Mode | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10005 | A | Turn Switch 27S1 (Backup Mode Position) to 'BACKUP' Position | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10006 | A | Turn Driver's Master Key 30A1.S1 to Active Cabin Position | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10007 | A | Turn Battery contactor Switch 18S1 to ON position | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10008 | I | Backup Mode Train Lines Dev5/33 = END2 90XP15 pin 23 Dev2/67 = Coupler pin 007 Dev2/25 = Coupler pin 107 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10009 | R | Read Defined Variable [NI] Dev5/33 = 1.0 | | OK | 1 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10010 | R | Read Defined Variable [NI] Dev2/25 = 1.0 | | OK | 1 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10011 | R | Read Defined Variable [NI] Dev2/67 = 1.0 | | OK | 1 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10012 | R | Relay 27K1 is energized | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10013 | R | Relay 27K2 is De-energized | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10014 | A | Timer 30.0 S | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10015 | R | Relay 27K2 is energized | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10016 | I | Check that the Backup mode LED 27H2 is ON | TC2 | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10017 | A | Turn Driver's Master Key 30A1.S1 to Non-Active Cabin Position | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10018 | I | Backup Mode Train Lines Dev5/33 = END2 90XP15 pin 23 Dev2/67 = Coupler pin 007 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |

| | | | | | | | |
|-------|---|---|--|----|---|-------------------------------|-----|
| | | Dev2/25 = Coupler pin 107 | | | | | |
| 10019 | R | Read Defined Variable [NI] Dev5/33 = 0.0 | | OK | 0 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10020 | R | Read Defined Variable [NI] Dev2/25 = 0.0 | | OK | 0 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10021 | R | Read Defined Variable [NI] Dev2/67 = 0.0 | | OK | 0 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10022 | R | Relay 27K1 is De-energized | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10023 | R | Relay 27K2 is De-energized | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10024 | R | Check that the Backup mode LED 27H2 is OFF | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10025 | A | Turn Driver's Master Key 30A1.S1 to Active Cabin Position | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10026 | A | Turn Battery contactor Switch 18S1 to OFF position | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10027 | A | Turn Switch '27S1' (Backup Mode Position) to Normal Position | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10028 | I | Turn ERTMS Isolation Switch 62S1 to Normal position | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10029 | A | Turn Battery contactor Switch 18S1 to ON position | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10030 | A | Check continuity between point 20 on Backup State Switch 27S1 and ground | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10031 | R | The points are continuous. | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10032 | I | Backup Mode Train Line Dev5/33 = END2 90XP15 pin 23 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10033 | R | Read Defined Variable [NI] Dev5/33 = 0.0 | | OK | 0 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10034 | A | Force [TT] (BCU2)LO_SPEED_THRSLD1 = 0.0 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10035 | I | Emergency Disconnection | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10036 | I | Emergency Disconnection Train Lines Dev5/34 = END2 90XP15 pin 24 Dev2/79 = Coupler pin 019 Dev2/75 = Coupler pin 119 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10037 | R | Read Defined Variable [NI] Dev5/34 = 1.0 | | OK | 1 | Paseka Ditlhakanyane - 491468 | TC2 |

| | | | | | | | |
|-------|---|---|--|----|---|-------------------------------|-----|
| 10038 | R | Read Defined Variable [NI] Dev2/79 = 1.0 | | OK | 1 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10039 | R | Read Defined Variable [NI] Dev2/75 = 1.0 | | OK | 1 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10040 | I | Emergency Brake ERTMS 1 Train Line Dev4/88 = END2 90XP14 pin 18 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10041 | A | Force [NI] Dev4/88 = 1.0 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10042 | I | Emergency Disconnection Train Lines Dev5/34 = END2 90XP15 pin 24 Dev2/79 = Coupler pin 019 Dev2/75 = Coupler pin 119 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10043 | R | Read Defined Variable [NI] Dev5/34 = 1.0 | | OK | 1 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10044 | R | Read Defined Variable [NI] Dev2/79 = 1.0 | | OK | 1 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10045 | R | Read Defined Variable [NI] Dev2/75 = 1.0 | | OK | 1 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10046 | I | Emergency Brake ERTMS 2 Train Line Dev4/80 = END2 90XP14 pin 20 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10047 | A | Force [NI] Dev4/80 = 1.0 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10048 | I | Emergency Disconnection Train Lines Dev5/34 = END2 90XP15 pin 24 Dev2/79 = Coupler pin 019 Dev2/75 = Coupler pin 119 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10049 | R | Read Defined Variable [NI] Dev5/34 = 0.0 | | OK | 0 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10050 | R | Read Defined Variable [NI] Dev2/79 = 0.0 | | OK | 0 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10051 | R | Read Defined Variable [NI] Dev2/75 = 0.0 | | OK | 0 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10052 | I | Emergency Brake ERTMS 1 Train Line Dev4/88 = END2 90XP14 pin 18 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10053 | A | Force [NI] Dev4/88 = 0.0 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10054 | I | Emergency Brake ERTMS 2 Train Line Dev4/80 = END2 90XP14 pin 20 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10055 | A | Force [NI] Dev4/80 = 0.0 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10056 | I | Emergency Disconnection Train Line Dev5/34 = END2 90XP15 pin 24 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10057 | R | Read Defined Variable [NI] Dev5/34 = 1.0 | | OK | 1 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10058 | I | V<3km/h Train Line Dev4/39 = END2 90XP15 pin 29 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |

| | | | | | | | |
|-------|---|---|--|----|---|-------------------------------|-----|
| 10059 | A | Force [NI] Dev4/39 = 1.0 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10060 | I | Emergency Disconnection Train Line Dev5/34 = END2 90XP15 pin 24 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10061 | R | Read Defined Variable [NI] Dev5/34 = 0.0 | | OK | 0 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10062 | I | V<3km/h Train Line Dev4/39 = END2 90XP15 pin 29 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10063 | A | Force [NI] Dev4/39 = 0.0 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10064 | I | Emergency Disconnection Train Line Dev5/34 = END2 90XP15 pin 24 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10065 | R | Read Defined Variable [NI] Dev5/34 = 1.0 | | OK | 1 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10066 | R | Read Defined Variable [TT] (MPU1)li_erm_tc2noemerdiscr1 = 1.0 | | OK | 1 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10067 | R | Read Defined Variable [TT] (MPU1)li_erm_tc2noemerdiscr2 = 1.0 | | OK | 1 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10068 | I | Place ERTMS Isolation Switch in "Isolation" position | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10069 | I | Emergency Disconnection Train Line Dev5/34 = END2 90XP15 pin 24 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10070 | R | Read Defined Variable [NI] Dev5/34 = 0.0 | | OK | 0 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10071 | A | Release [TT] (BCU2)LO_SPEED_THRSLD1 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10072 | A | Push the blue "Emergency Pantograph Down" pushbutton | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10073 | R | Read Defined Variable [TT] (MPU1)li_erm_tc2noemerdiscr1 = 0.0 | | OK | 0 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10074 | R | Read Defined Variable [TT] (MPU1)li_erm_tc2noemerdiscr2 = 0.0 | | OK | 0 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10075 | I | Emergency Disconnection Train Line Dev5/34 = END2 90XP15 pin 24 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10076 | R | Read Defined Variable [NI] Dev5/34 = 1.0 | | OK | 1 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10077 | A | Release the "Emergency Pantograph Down" pushbutton | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10078 | R | Read Defined Variable [TT] (MPU1)li_erm_tc2noemerdiscr1 = 1.0 | | OK | 1 | Paseka Ditlhakanyane - 491468 | TC2 |

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|-------|---|--|--|----|---|----------------------------------|-----|
| 10079 | R | Read Defined Variable [TT] (MPU1)li_erm_tc2noemerdiscr2 = 1.0 | | OK | 1 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10080 | I | Emergency Disconnection Train Line Dev5/34 = END2 90XP15 pin 24 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10081 | R | Read Defined Variable [NI] Dev5/34 = 0.0 | | OK | 0 | Paseka Ditlhakanyane - 491468 | TC2 |



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Section 10 – Driver Desk Illumination


10.3 Instructions list

10.3.1 084_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 | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10002 | I | Initial Conditions: | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10003 | I | Car is prepared and cab is active | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10004 | A | Close Circuit Breaker 81Q1 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10005 | I | Indicator Modules | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10006 | R | Check that the Line Indicator Module 81A1 is ON | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10007 | R | Check that the Pressure gauge 84P1 is ON | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10008 | R | Check that the light of the Speed Indicator 61A2 is ON | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10009 | I | Lamp Test | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10010 | A | Press and hold the Lamp Test pushbutton 84S1 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10011 | R | Check that the White Lamp Test pushbutton Lamp 84S1 is ON | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10012 | R | Check that the White Automatic Start pushbutton lamp 20S1 is ON | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10013 | R | Check that the Orange Standby State pushbutton lamp 20S2 is ON | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10014 | R | Check that the White Pantograph Up/Down pushbutton lamp 21S1 is ON | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10015 | R | Check that the White Close Main Circuit Breaker pushbutton lamp 22S11 is ON | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10016 | R | Check that the Red Open Main Circuit Breaker pushbutton lamp 22S12 is ON | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10017 | R | Check that the White Reduced Power lamp 30S2 is ON | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |

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|-------|---|--|---|----|--|-------------------------------|-----|
| 10018 | R | Check that the Red Override Passenger Emergency Alarm pushbutton lamp 44S5 is ON | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10019 | R | Check that the Yellow Door Auth Left pushbutton lamp 50S5 is ON | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10020 | R | Check that the Yellow Door Auth Right pushbutton lamp 50S6 is ON | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10021 | R | Check that the White Door Open Left pushbutton lamp 50S1 is ON | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10022 | R | Check that the White Door Open Right pushbutton lamp 50S2 is ON | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10023 | R | Check that the Blue Door Close Left pushbutton lamp 50S3 is ON | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10024 | R | Check that the Blue Door Close Right pushbutton lamp 50S4 is ON | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10025 | R | Check that the White Cab Lighting Left Side pushbutton lamp 52S3 is ON | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10026 | R | Check that the White Cab Lighting Right Side pushbutton lamp 52S4 is ON | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10027 | R | Check that the White Foot Heater pushbutton lamp 57S3 is ON | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10028 | R | Check that the Red Front CCTV Event pushbutton lamp 66S1 is ON | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10029 | R | Check that the White Windscreen Demister pushbutton lamp 72S2 is ON | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10030 | I | Use the following image to verify the train status LEDs 84A1 |  | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10031 | R | Check that 31H1 is ON | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10032 | R | Check that 60H1 is ON | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10033 | R | Check that 18H1 is ON | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10034 | R | Check that 44H4 is ON | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10035 | R | Check that 44H1 is ON | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10036 | R | Check that 51H1 is ON | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10037 | R | Check that 45H2 is ON | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |

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|-------|---|--|---|----|--|-------------------------------|-----|
| 10038 | R | Check that 40H2 is ON | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10039 | R | Check that 40H1 is ON | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10040 | R | Check that 41H1 is ON | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10041 | R | Check that 60H2 is ON | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10042 | R | Check that 27H2 is ON | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10043 | R | Check that 62H1 is ON | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10044 | R | Check that 44H5 is ON | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10045 | R | Check that 31H2 is ON | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10046 | R | Check that 67H1 is ON | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10047 | A | Release the Lamp Test pushbutton 84S1 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10048 | I | Dimmer Switch Adjustment | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 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 to identify the trimmer screw which is used to adjust the limits of the dimmer |  | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 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 | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10051 | A | Press the Lamp Test pushbutton 84S1 and maintain it | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10052 | A | While pressing 84S1, turn the dimmer switch and observe that the brightness of all the following lamps increases and decreases accordingly | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10053 | R | Check that 61A2 (Speed Indicator) can be dimmed | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10054 | R | Check that the Line Indicator Module 81A1 can be dimmed | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10055 | R | Check that the Pressure gauge 84P1 can be dimmed | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |

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|-------|---|---|--|----|--|-------------------------------|-----|
| 10056 | R | Check that the Train Status LEDs 84A1 can be dimmed | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10057 | R | Check that 84S1 can be dimmed | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10058 | R | Check that 20S1 can be dimmed | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10059 | R | Check that 20S2 can be dimmed | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10060 | R | Check that 21S1 can be dimmed | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10061 | R | Check that 22S11 can be dimmed | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10062 | R | Check that 22S12 can be dimmed | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10063 | R | Check that 30S2 can be dimmed | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10064 | R | Check that 44S5 can be dimmed | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10065 | R | Check that 50S5 can be dimmed | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10066 | R | Check that 50S6 can be dimmed | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10067 | R | Check that 50S1 can be dimmed | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10068 | R | Check that 50S2 can be dimmed | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10069 | R | Check that 50S3 can be dimmed | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10070 | R | Check that 50S4 can be dimmed | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10071 | R | Check that 52S3 can be dimmed | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10072 | R | Check that 52S4 can be dimmed | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10073 | R | Check that 57S3 can be dimmed | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10074 | R | Check that 66S1 can be dimmed | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10075 | R | Check that 67S1 can be dimmed | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10076 | R | Check that 72S2 can be dimmed | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |



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Section 11 – Emergency Brake

11.3 Instructions list

11.3.1 044_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 | | Tshembhani Khosa - 446920 | TC2 |
| 10002 | I | Initial Conditions | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10003 | I | No air connected to the vehicle OR main pipe pressure below 6Bar | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10004 | I | No PEAs are activated | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10005 | I | Battery Contactor Switch 18S1 in ON position | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10006 | A | Turn Driver's Master Key 30A1.S1 to Non-Active Cabin Position | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10007 | A | Open and Close (Reset) Circuit breaker 20Q2 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10008 | I | Back Up mode switch 27S1 in Normal position | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10009 | I | Direction Switch 30A1.S2 in "Neutral" position | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10010 | I | Visual Inspection | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10011 | A | Physically and visually inspect all the Disk Break Units (DBU) and brake pads, to ensure they are securely fitted |  | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10012 | R | All the brake DBUs are correctly installed and all the brake pads are correctly installed and locked | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10013 | A | Check the pipe installation | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10014 | R | All the pipes are installed on the vehicle | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10015 | A | Check all the Passenger Emergency Alarm handles, and ensure they are connected to their respective connectors | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10016 | R | All the PEAs are installed and connected | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10017 | I | Circuit Breakers | | OK | | Tshembhani Khosa - 446920 | TC2 |

| | | | | | | | |
|-------|---|---|--|----|---|---------------------------|-----|
| 10018 | A | Close Circuit Breaker 44Q1 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10019 | A | Close Circuit Breaker 44Q2 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10020 | A | Close Circuit Breaker 44Q3 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10021 | A | Close Circuit Breaker 44Q4 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10022 | I | Emergency Brake Loop | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10023 | I | Emergency Brake Loop Train Line Dev2/3 = coupler pin 005 Dev2/4 = coupler pin 105 Dev5/5 = END2 90XP14 pin 8 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10024 | R | Read Defined Variable [NI] Dev2/3 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10025 | R | Read Defined Variable [NI] Dev2/4 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10026 | R | Read Defined Variable [NI] Dev5/5 = 0.0 | | OK | 0 | Sizwe Sibanyoni - 484647 | TC2 |
| 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 C1.1 test point: B RTP | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10028 | R | The pressure on test point C 1.1 >=7 Bar | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10029 | I | Emergency Brake Loop Train Line Dev5/5 = END2 90XP14 pin 8 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10030 | R | Read Defined Variable [NI] Dev5/5 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10031 | A | Push the Emergency Brake Mushroom 44S1 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10032 | I | Emergency Brake Loop Train Line Dev2/4 = coupler pin 105 Dev5/5 = END2 90XP14 pin 8 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10033 | R | Read Defined Variable [NI] Dev2/4 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10034 | R | Read Defined Variable [NI] Dev5/5 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10035 | A | Release the Emergency Brake Mushroom 44S1 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10036 | I | Emergency Brake Loop Train Line Dev5/5 = END2 90XP14 pin 8 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10037 | R | Read Defined Variable [NI] Dev5/5 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |


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|-------|---|---|---|----|---|---------------------------|-----|
| 10038 | I | Coupling | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10039 | I | Coupling Relay Train Line Dev1/62 = coupler pin 103 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10040 | A | Force [NI] Dev1/62 = 1.0 | | OK | | Sizwe Sibanyoni - 484647 | TC2 |
| 10041 | R | Read Defined Variable [TT] (MPU1)Li_CPM_Tc2CoupDetec1 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC2 |
| 10042 | I | Emergency Brake Loop Train Line Dev2/3 = coupler pin 005 Dev2/4 = coupler pin 105 Dev5/5 = END2 90XP14 pin 8 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10043 | R | Read Defined Variable [NI] Dev2/3 = 0.0 | | OK | 0 | Sizwe Sibanyoni - 484647 | TC2 |
| 10044 | R | Read Defined Variable [NI] Dev2/4 = 0.0 | | OK | 0 | Sizwe Sibanyoni - 484647 | TC2 |
| 10045 | R | Read Defined Variable [NI] Dev5/5 = 0.0 | | OK | 0 | Sizwe Sibanyoni - 484647 | TC2 |
| 10046 | I | Coupling Relay Train Line Dev1/62 = coupler pin 103 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10047 | A | Force [NI] Dev1/62 = 0.0 | | OK | | Sizwe Sibanyoni - 484647 | TC2 |
| 10048 | R | Read Defined Variable [TT] (MPU1)Li_CPM_Tc2CoupDetec1 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10049 | I | Emergency Brake Loop Train Line Dev2/4 = coupler pin 105 Dev5/5 = END2 90XP14 pin 8 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10050 | R | Read Defined Variable [NI] Dev2/4 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10051 | R | Read Defined Variable [NI] Dev5/5 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10052 | I | Loop Override | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10053 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc2ebloopoverrider1 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10054 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc2ebloopoverrider2 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10055 | A | Turn Driver's Master Key 30A1.S1 to Active Cabin Position | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10056 | A | Turn the Emergency Braking Loop Override Switch 44S2 to "Override/Bypass" position |  | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10057 | I | Emergency Brake Loop Override Train Line Dev5/6 = END2 90XP14 pin 9 | | OK | | Tshembhani Khosa - 446920 | TC2 |

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|-------|---|---|---|----|---|---------------------------|-----|
| 10058 | R | Read Defined Variable [NI] Dev5/6 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10059 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc2ebloopoverrider1 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10060 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc2ebloopoverrider2 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10061 | A | Return the Emergency Braking Loop Override Switch 44S2 to "Normal" position | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10062 | R | Check that the Emergency Braking Loop Override Lamp 44H5 is OFF |  | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10063 | I | Emergency Brake Loop Override Train Line Dev5/6 = END2 90XP14 pin 9 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10064 | R | Read Defined Variable [NI] Dev5/6 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10065 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc2ebloopoverrider1 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10066 | I | Reset Emergency Brake | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10067 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc2rearmebrelayr1 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10068 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc2rearmebrelayr2 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10069 | I | Turn Direction Switch 30A1.S2 to "Forward" position | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10070 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc2rearmebrelayr1 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10071 | I | Emergency Brake Train Line | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10072 | I | Emergency Brake Loop Train Line Dev4/5 = END2 90XP14 pin 8 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10073 | A | Force [NI] Dev4/5 = 1.0 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10074 | A | Force [TT] (MPU1)lo_ubk_tc2emergbraker1 = 1.0 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10075 | A | Press and hold the Dead Man pushbutton 60S3 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10076 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc2ebdeadmanrelayr1 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |

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|-------|---|---|----|----|---|---------------------------|-----|
| 10077 | A | Ensure the Master Controller S3.3 (3.4) is NOT in Emergency Brake position | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10078 | I | Emergency Brake ERTMS1 Train Line Dev4/88 = END2 90XP14 pin 18 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10079 | A | Force [NI] Dev4/88 = 1.0 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10080 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc2emergrelay1 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10081 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc2emergrelay2 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10082 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc2rearmebrelayr1 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10083 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc2rearmebrelayr2 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10084 | I | Emergency Brake ERTMS2 Train Line Dev4/80 = END2 90XP14 pin 20 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10085 | A | Force [NI] Dev4/80 = 1.0 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10086 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc2emergrelay1 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10087 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc2emergrelay2 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10088 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc2rearmebrelayr1 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10089 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc2rearmebrelayr2 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10090 | I | Emergency Brake Train Line Dev2/84 = coupler pin 038 Dev2/85 = coupler pin 138 Dev5/61 = END2 90XP15 pin 67 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10091 | R | Read Defined Variable [NI] Dev5/61 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10092 | R | Read Defined Variable [NI] Dev2/84 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10093 | R | Read Defined Variable [NI] Dev2/85 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10094 | R | Check that the Emergency Brake Loop Lamp 44H4 is OFF | EB | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10095 | R | Read Defined Variable [TT] (BCU2)LI_NEB = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |

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|-------|---|--|----|----|---|------------------------------|-----|
| 10096 | A | Force [TT] (MPU1)lo_ubk_tc2emergbraker1 = 0.0 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10097 | I | Emergency Brake Train Line Dev2/84 = coupler pin 038 Dev2/85 = coupler pin 138 Dev5/61 = END2 90XP15 pin 67 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10098 | R | Read Defined Variable [NI] Dev5/61 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10099 | R | Read Defined Variable [NI] Dev2/84 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10100 | R | Read Defined Variable [NI] Dev2/85 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10101 | R | Check that the Emergency Brake Loop Lamp 44H4 is ON | EB | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10102 | A | Force [TT] (MPU1)lo_ubk_tc2emergbraker2 = 1.0 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10103 | I | Emergency Brake Train Line Dev5/61 = END2 90XP15 pin 67 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10104 | R | Read Defined Variable [NI] Dev5/61 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10105 | A | Release the Dead Man pushbutton 60S3 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10106 | I | Emergency Brake ERTMS1 Train Line Dev4/88 = END2 90XP14 pin 18 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10107 | A | Force [NI] Dev4/88 = 0.0 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10108 | I | Emergency Brake ERTMS2 Train Line Dev4/80 = END2 90XP14 pin 20 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10109 | A | Force [NI] Dev4/80 = 0.0 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10110 | I | Emergency Brake Train Line Dev5/61 = END2 90XP15 pin 67 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10111 | R | Read Defined Variable [NI] Dev5/61 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10112 | A | Turn the ERTMS Isolation switch 62S1 to "Isolation" position | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10113 | A | Turn the Dead Man Override switch 60S1 to "Override" position | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10114 | I | Emergency Brake Train Line Dev5/61 = END2 90XP15 pin 67 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10115 | R | Read Defined Variable [NI] Dev5/61 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |

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|-------|---|--|--|----|---|---------------------------|-----|
| 10116 | I | Emergency Brake Pushbutton | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10117 | A | Push the Emergency Brake Mushroom 44S1 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10118 | I | Emergency Brake Train Line Dev5/61 = END2 90XP15 pin 67 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10119 | R | Read Defined Variable [NI] Dev5/61 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10120 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc2emgcybrkpbr1 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10121 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc2emgcybrkpbr2 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10122 | A | Check continuity between 93XT104_5 pin 36 and 93XT103 pin 28 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10123 | A | The points are continuous | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10124 | A | Release the Emergency Brake Mushroom 44S1 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10125 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc2emgcybrkpbr1 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10126 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc2emgcybrkpbr2 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10127 | A | Force [TT] (MPU1)lo_ubk_tc2emergbraker2 = 0.0 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10128 | A | Return the Dead Man Override switch 60S1 to "Normal" position | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10129 | A | Return the ERTMS Isolation switch 62S1 to "Normal" position | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10130 | I | Emergency Brake Loop Train Line Dev4/5 = END2 90XP14 pin 8 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10131 | A | Force [NI] Dev4/5 = 0.0 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10132 | A | Turn the Emergency Braking Loop Override Switch 44S2 to "Override/Bypass" position | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10133 | A | Press and hold the Dead Man pushbutton 60S3 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10134 | I | Emergency Brake Train Line Dev5/61 = END2 90XP15 pin 67 | | OK | | Tshembhani Khosa - 446920 | TC2 |

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|-------|---|--|---|----|---|---------------------------|-----|
| 10135 | R | Read Defined Variable [NI] Dev5/61 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10136 | A | Release the Dead Man pushbutton 60S3 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10137 | A | Return the Emergency Braking Loop Override Switch 44S2 to "Normal" position | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10138 | A | Turn Driver's Master Key 30A1.S1 to Non-Active Cabin Position | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10139 | I | Emergency Brake Train Line Dev4/61 = END2 90XP15 pin 67 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10140 | A | Force [NI] Dev4/61 = 1.0 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10141 | A | Measure the voltage on terminal block 93XT104_2 at pin 34, and pin 35 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10142 | R | 110Vdc measured on terminal block 93XT104_2 at pin 34, and pin 35 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10143 | I | Emergency Brake Train Line Dev4/61 = END2 90XP15 pin 67 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10144 | A | Force [NI] Dev4/61 = 0.0 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10145 | I | PEA Loop | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10146 | A | Check all the Passenger Emergency Alarm handles, and ensure they are connected to their respective connectors | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10147 | R | All the PEAs are installed and connected | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10148 | A | Open and Close (Reset) Circuit breaker 20Q2 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10149 | I | PEA Loop Train Lines Dev2/58 = coupler pin 017 Dev2/59 = coupler pin 117 Dev5/62 = END2 90XP15 pin 95 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10150 | R | Read Defined Variable [NI] Dev2/58 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10151 | R | Read Defined Variable [NI] Dev2/59 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10152 | R | Read Defined Variable [NI] Dev5/62 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC2 |
| 10153 | A | Turn Driver's Master Key 30A1.S1 to Active Cabin Position | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10154 | R | Check that the PEA Lamp 44H1 is ON |  | OK | | Tshembhani Khosa - 446920 | TC2 |

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|-------|---|---|---|----|---|------------------------------|-----|
| 10155 | I | PEA Loop Train Lines Dev5/62 = END2 90XP15 pin 95 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10156 | R | Read Defined Variable [NI] Dev5/62 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10157 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc2pealoo = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10158 | I | PEA Loop OTDR Train Line Dev5/7 = END2 90XP14 pin 10 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10159 | R | Read Defined Variable [NI] Dev5/7 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10160 | I | PEA Loop Train Lines Dev4/62 = END2 90XP15 pin 95 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10161 | A | Force [NI] Dev4/62 = 1.0 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10162 | I | PEA Loop Train Lines Dev2/58 = coupler pin 017 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10163 | R | Read Defined Variable [NI] Dev2/58 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10164 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc2pealoo = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10165 | I | PEA Loop OTDR Train Line Dev5/7 = END2 90XP14 pin 10 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10166 | R | Read Defined Variable [NI] Dev5/7 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10167 | R | Check that the PEA Lamp 44H1 is OFF |  | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10168 | I | PEA Reset | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10169 | A | Activate the PEA on door 1 (44S11) | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10170 | I | PEA Loop Train Lines Dev2/58 = coupler pin 017 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10171 | R | Read Defined Variable [NI] Dev2/58 = 0.0 | | OK | 0 | Sizwe Sibanyoni - 484647 | TC2 |
| 10172 | R | Read Defined Variable [TT] (MPU1)li_UBK_Tc2StateResetPea = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10173 | A | Turn and hold the PEA Reset Switch 44S6 in Reset position | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10174 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc2restpeaswitch = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10175 | R | Read Defined Variable [TT] (MPU1)lo_ubk_tc2resetpea = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC2 |

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|-------|---|---|----|---|------------------------------|-----|
| 10176 | R | Read Defined Variable [TT] (MPU1)Li_UBK_Tc2StateResetPea = 0.0 | OK | 0 | Sizwe Sibanyoni - 484647 | TC2 |
| 10177 | A | Release the PEA Reset Switch 44S6 | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10178 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc2restpeaswitch = 0.0 | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10179 | A | Timer 5.0 S | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10180 | R | Read Defined Variable [TT] (MPU1)Li_UBK_Tc2StateResetPea = 1.0 | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10181 | R | Read Defined Variable [TT] (MPU1)lo_ubk_tc2resetpea = 0.0 | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10182 | I | PEA Loop Train Lines Dev2/58 = coupler pin 017 | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10183 | R | Read Defined Variable [NI] Dev2/58 = 1.0 | OK | 1 | Sizwe Sibanyoni - 484647 | TC2 |
| 10184 | A | Activate the PEA on door 2 (44S12) | OK | | Sizwe Sibanyoni - 484647 | TC2 |
| 10185 | I | PEA Loop Train Lines Dev2/58 = coupler pin 017 | OK | | Sizwe Sibanyoni - 484647 | TC2 |
| 10186 | R | Read Defined Variable [NI] Dev2/58 = 0.0 | OK | 0 | Sizwe Sibanyoni - 484647 | TC2 |
| 10187 | A | Turn the PEA Reset Switch 44S6 to Reset position, and release it | OK | | Sizwe Sibanyoni - 484647 | TC2 |
| 10188 | I | PEA Loop Train Lines Dev2/58 = coupler pin 017 | OK | | Sizwe Sibanyoni - 484647 | TC2 |
| 10189 | R | Read Defined Variable [NI] Dev2/58 = 1.0 | OK | 1 | Sizwe Sibanyoni - 484647 | TC2 |
| 10190 | A | Activate the PEA on door 3 (44S13) | OK | | Sizwe Sibanyoni - 484647 | TC2 |
| 10191 | I | PEA Loop Train Lines Dev2/58 = coupler pin 017 | OK | | Sizwe Sibanyoni - 484647 | TC2 |
| 10192 | R | Read Defined Variable [NI] Dev2/58 = 0.0 | OK | 0 | Sizwe Sibanyoni - 484647 | TC2 |
| 10193 | A | Turn the PEA Reset Switch 44S6 to Reset position, and release it | OK | | Sizwe Sibanyoni - 484647 | TC2 |
| 10194 | I | PEA Loop Train Lines Dev2/58 = coupler pin 017 | OK | | Sizwe Sibanyoni - 484647 | TC2 |
| 10195 | R | Read Defined Variable [NI] Dev2/58 = 1.0 | OK | 1 | Sizwe Sibanyoni - 484647 | TC2 |
| 10196 | A | Activate the PEA on door 4 (44S14) | OK | | Sizwe Sibanyoni - 484647 | TC2 |

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| 10197 | I | PEA Loop Train Lines Dev2/58 = coupler pin 017 | | OK | | Sizwe Sibanyoni - 484647 | TC2 |
| 10198 | R | Read Defined Variable [NI] Dev2/58 = 0.0 | | OK | 0 | Sizwe Sibanyoni - 484647 | TC2 |
| 10199 | A | Turn the PEA Reset Switch 44S6 to Reset position, and release it | | OK | | Sizwe Sibanyoni - 484647 | TC2 |
| 10200 | I | PEA Loop Train Lines Dev2/58 = coupler pin 017 | | OK | | Sizwe Sibanyoni - 484647 | TC2 |
| 10201 | R | Read Defined Variable [NI] Dev2/58 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC2 |
| 10202 | A | Activate the PEA on door 5 (44S15) | | OK | | Sizwe Sibanyoni - 484647 | TC2 |
| 10203 | I | PEA Loop Train Lines Dev2/58 = coupler pin 017 | | OK | | Sizwe Sibanyoni - 484647 | TC2 |
| 10204 | R | Read Defined Variable [NI] Dev2/58 = 0.0 | | OK | 0 | Sizwe Sibanyoni - 484647 | TC2 |
| 10205 | A | Turn the PEA Reset Switch 44S6 to Reset position, and release it | | OK | | Sizwe Sibanyoni - 484647 | TC2 |
| 10206 | I | PEA Loop Train Lines Dev2/58 = coupler pin 017 | | OK | | Sizwe Sibanyoni - 484647 | TC2 |
| 10207 | R | Read Defined Variable [NI] Dev2/58 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC2 |
| 10208 | A | Activate the PEA on door 6 (44S16) | | OK | | Sizwe Sibanyoni - 484647 | TC2 |
| 10209 | I | PEA Loop Train Lines Dev2/58 = coupler pin 017 | | OK | | Sizwe Sibanyoni - 484647 | TC2 |
| 10210 | R | Read Defined Variable [NI] Dev2/58 = 0.0 | | OK | 0 | Sizwe Sibanyoni - 484647 | TC2 |
| 10211 | A | Turn the PEA Reset Switch 44S6 to Reset position, and release it | | OK | | Sizwe Sibanyoni - 484647 | TC2 |
| 10212 | I | PEA Loop Train Lines Dev2/58 = coupler pin 017 | | OK | | Sizwe Sibanyoni - 484647 | TC2 |
| 10213 | R | Read Defined Variable [NI] Dev2/58 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC2 |
| 10214 | I | PEA Loop Train Lines Dev4/62 = END2 90XP15 pin 95 | | OK | | Sizwe Sibanyoni - 484647 | TC2 |
| 10215 | A | Force [NI] Dev4/62 = 0.0 | | OK | | Sizwe Sibanyoni - 484647 | TC2 |
| 10216 | I | PEA Override | | OK | | Sizwe Sibanyoni - 484647 | TC2 |
| 10217 | A | Press and hold the Override PEA pushbutton 44S5 | | OK | | Sizwe Sibanyoni - 484647 | TC2 |

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|-------|---|---|--|----|---|-----------------------------|-----|
| 10218 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc2peaoverridebuttr1 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC2 |
| 10219 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc2peaoverridebuttr2 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC2 |
| 10220 | R | Read Defined Variable [TT] (MPU1)lo_ubk_tc2peaoverrider1 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC2 |
| 10221 | R | Read Defined Variable [TT] (MPU1)lo_ubk_tc2peaoverrider2 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC2 |
| 10222 | R | Check that the Override PEA pushbutton lamp 44S5 turns ON | | OK | | Sizwe Sibanyoni - 484647 | TC2 |
| 10223 | A | Release the Override PEA pushbutton 44S5 | | OK | | Sizwe Sibanyoni - 484647 | TC2 |
| 10224 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc2peaoverridebuttr1 = 0.0 | | OK | 0 | Sizwe Sibanyoni - 484647 | TC2 |
| 10225 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc2peaoverridebuttr2 = 0.0 | | OK | 0 | Sizwe Sibanyoni - 484647 | TC2 |
| 10226 | A | Force [TT] (MPU1)lo_ubk_tc2peaoverrider1 = 0.0 | | OK | | Sizwe Sibanyoni - 484647 | TC2 |
| 10227 | A | Force [TT] (MPU1)lo_ubk_tc2peaoverrider2 = 0.0 | | OK | | Sizwe Sibanyoni - 484647 | TC2 |
| 10228 | R | Check that the Override PEA pushbutton lamp 44S5 turns OFF | | OK | | Sizwe Sibanyoni - 484647 | TC2 |



Serial Tests Report
TS228 – TC2 – VFT
RTR Vehicle Functional Static Testing Report

Document Reference
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Version: A0

Emission date
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Section 12 – Service Brake

12.3 Instructions list

12.3.1 040_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 | | Sicelo Mtolo - 525130 | TC2 |
| 10002 | I | Initial Conditions | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10003 | I | No air supply to the vehicle - pressure in tank <6Bar | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10004 | I | All brake panel cocks are in normal position (not isolated) | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10005 | I | The Service Brake Isolation Switch 40S1 should be in Normal position | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10006 | I | Circuit Breakers | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10007 | A | Close Circuit Breaker 40Q2 | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10008 | A | Close Circuit Breaker 40Q3 | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10009 | A | Close Circuit Breaker 40Q4 | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10010 | A | Close Circuit Breaker 40Q5 | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10011 | I | Brake Air Supply and Brake Application | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10012 | I | EB Reduced Train Lines Dev2/78 = Coupler pin 031 Dev2/81 = Coupler pin 131 Dev5/51 = END2 90XP15 pin 60 | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10013 | R | Read Defined Variable [NI] Dev2/78 = 1.0 | | OK | 1 | Sicelo Mtolo - 525130 | TC2 |
| 10014 | R | Read Defined Variable [NI] Dev2/81 = 1.0 | | OK | 1 | Sicelo Mtolo - 525130 | TC2 |
| 10015 | R | Read Defined Variable [NI] Dev5/51 = 1.0 | | OK | 1 | Sicelo Mtolo - 525130 | TC2 |
| 10016 | I | Brake Applied Train Lines Dev2/36 = Coupler pin 010 Dev2/37 = Coupler pin 110 Dev5/49 = END2 90XP15 pin 50 | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10017 | R | Read Defined Variable [NI] Dev2/36 = 0.0 | | OK | 0 | Sicelo Mtolo - 525130 | TC2 |
| 10018 | R | Read Defined Variable [NI] Dev2/37 = 0.0 | | OK | 0 | Sicelo Mtolo - 525130 | TC2 |

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|-------|---|---|---|----|---|-----------------------|-----|
| 10019 | R | Read Defined Variable [NI] Dev5/49 = 0.0 | | OK | 0 | Sicelo Mtolo - 525130 | TC2 |
| 10020 | R | Read Defined Variable [TT] (MPU1)li_sbk_tc2brakeairsuppokr1 = 0.0 | | OK | 0 | Sicelo Mtolo - 525130 | TC2 |
| 10021 | R | Read Defined Variable [TT] (MPU1)li_sbk_tc2brakeairsuppokr2 = 0.0 | | OK | 0 | Sicelo Mtolo - 525130 | TC2 |
| 10022 | R | Read Defined Variable [TT] (BCU2)LI_BRPS_NOK = 1.0 | | OK | 1 | Sicelo Mtolo - 525130 | TC2 |
| 10023 | R | Read Defined Variable [TT] (BCU2)LI_BRAKE_NOT_APPLIED = 1.0 | | OK | 1 | Sicelo Mtolo - 525130 | TC2 |
| 10024 | R | The Reduced Brake Lamp 40H2 on the Indicator module 84A1 is ON |  | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10025 | A | Close/Isolate the coupler Isolation cock F2.1/1 | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10026 | A | Open the Isolation cock F2.2/1 | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10027 | A | Connect the air supply to the vehicle main pipe coupling flexible hose F3/1, and switch the supply ON | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10028 | I | Take note of any air leaks in the pipes or valves | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10029 | A | Allow the pressure to go above 6 bar. The pressure can be checked at the B RTP test point | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10030 | R | B RTP pressure is measured >=6 Bar | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10031 | I | EB Reduced Train Lines Dev2/78 = Coupler pin 031 Dev2/81 = Coupler pin 131 Dev5/51 = END2 90XP15 pin 60 | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10032 | R | Read Defined Variable [NI] Dev2/78 = 0.0 | | OK | 0 | Sicelo Mtolo - 525130 | TC2 |
| 10033 | R | Read Defined Variable [NI] Dev2/81 = 0.0 | | OK | 0 | Sicelo Mtolo - 525130 | TC2 |
| 10034 | R | Read Defined Variable [NI] Dev5/51 = 0.0 | | OK | 0 | Sicelo Mtolo - 525130 | TC2 |
| 10035 | I | Brake Applied Train Lines Dev2/36 = Coupler pin 010 Dev2/37 = Coupler pin 110 Dev5/49 = END2 90XP15 pin 50 | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10036 | R | Read Defined Variable [NI] Dev2/36 = 1.0 | | OK | 1 | Sicelo Mtolo - 525130 | TC2 |
| 10037 | R | Read Defined Variable [NI] Dev2/37 = 1.0 | | OK | 1 | Sicelo Mtolo - 525130 | TC2 |

| | | | | | | | |
|-------|---|--|---|----|---|-----------------------|-----|
| 10038 | R | Read Defined Variable [NI] Dev5/49 = 1.0 | | OK | 1 | Sicelo Mtolo - 525130 | TC2 |
| 10039 | R | Read Defined Variable [TT] (MPU1)li_sbk_tc2brakeairsuppokr1 = 1.0 | | OK | 1 | Sicelo Mtolo - 525130 | TC2 |
| 10040 | R | Read Defined Variable [TT] (MPU1)li_sbk_tc2brakeairsuppokr2 = 1.0 | | OK | 1 | Sicelo Mtolo - 525130 | TC2 |
| 10041 | R | Read Defined Variable [TT] (BCU2)LI_BRPS_NOK = 0.0 | | OK | 0 | Sicelo Mtolo - 525130 | TC2 |
| 10042 | R | Read Defined Variable [TT] (BCU2)LI_BRAKE_NOT_APPLIED = 0.0 | | OK | 0 | Sicelo Mtolo - 525130 | TC2 |
| 10043 | R | The Reduced Brake Lamp 40H2 on the Indicator module 84A1 is OFF |  | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10044 | A | Put the Master controller in 100% Traction position | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10045 | I | V>5km/h Train Line Dev4/38 = END2 90XP15 pin 28 | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10046 | A | Force [NI] Dev4/38 = 1.0 | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10047 | R | Lamp 40H1 on the Indicator module 84A1 is ON |  | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10048 | A | Return the Master controller to Normal position (Coasting) | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10049 | I | V>5km/h Train Line Dev4/38 = END2 90XP15 pin 28 | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10050 | A | Force [NI] Dev4/38 = 0.0 | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10051 | R | Lamp 40H1 on the Indicator module 84A1 is OFF |  | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10052 | I | Remote Isolation | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10053 | A | Turn the key 30A1.S1 to Non-active cab position | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10054 | R | Read Defined Variable [TT] (BCU2)LI_BRAKE_ISO = 1.0 | | OK | 1 | Sicelo Mtolo - 525130 | TC2 |
| 10055 | I | Remote Isolation Train Lines Dev4/50 = END2 90XP15 pin 59 Dev2/38 = Coupler pin 025 Dev2/39 = Coupler pin 125 | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10056 | A | Force [NI] Dev4/50 = 1.0 | | OK | | Sicelo Mtolo - 525130 | TC2 |

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|-------|---|---|--|----|---|-----------------------|-----|
| 10057 | R | Read Defined Variable [NI] Dev2/38 = 1.0 | | OK | 1 | Sicelo Mtolo - 525130 | TC2 |
| 10058 | R | Read Defined Variable [NI] Dev2/39 = 1.0 | | OK | 1 | Sicelo Mtolo - 525130 | TC2 |
| 10059 | I | Remote Isolation Train Lines Dev4/50 = END2 90XP15 pin 59 Dev2/38 = Coupler pin 025 Dev2/39 = Coupler pin 125 | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10060 | A | Force [NI] Dev4/50 = 0.0 | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10061 | R | Read Defined Variable [NI] Dev2/38 = 0.0 | | OK | 0 | Sicelo Mtolo - 525130 | TC2 |
| 10062 | R | Read Defined Variable [NI] Dev2/39 = 0.0 | | OK | 0 | Sicelo Mtolo - 525130 | TC2 |
| 10063 | A | Turn the key 30A1.S1 to Active cab position | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10064 | A | Turn the Service Brake Isolation Switch 40S2 to Isolation position | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10065 | R | Read Defined Variable [TT] (MPU1)li_sbk_tc2remoteisowitchr1 = 1.0 | | OK | 1 | Sicelo Mtolo - 525130 | TC2 |
| 10066 | R | Read Defined Variable [TT] (MPU1)li_sbk_tc2remoteisowitchr2 = 1.0 | | OK | 1 | Sicelo Mtolo - 525130 | TC2 |
| 10067 | I | EB Reduced Train Lines Dev5/51 = END2 90XP15 pin 60 | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10068 | R | Read Defined Variable [NI] Dev5/51 = 1.0 | | OK | 1 | Sicelo Mtolo - 525130 | TC2 |
| 10069 | A | Force [TT] (MPU1)lo_sbk_tc2isobrake = 1.0 | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10070 | R | Read Defined Variable [TT] (BCU2)LI_BRAKE_ISO = 0.0 | | OK | 0 | Sicelo Mtolo - 525130 | TC2 |
| 10071 | I | Remote Isolation Train Lines Dev2/39 = Coupler pin 125 Dev5/50 = END2 90XP15 pin 59 | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10072 | R | Read Defined Variable [NI] Dev2/39 = 1.0 | | OK | 1 | Sicelo Mtolo - 525130 | TC2 |
| 10073 | R | Read Defined Variable [NI] Dev5/50 = 0.0 | | OK | 0 | Sicelo Mtolo - 525130 | TC2 |
| 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 | | Sicelo Mtolo - 525130 | TC2 |
| 10075 | A | Release [TT] (MPU1)lo_sbk_tc2isobrake | | OK | | Sicelo Mtolo - 525130 | TC2 |

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|-------|---|--|--|----|---|-----------------------|-----|
| 10076 | A | Turn the Service Brake Isolation Switch 40S2 to Normal position | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10077 | I | EB Reduced Train Lines Dev5/51 = END2 90XP15 pin 60 | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10078 | R | Read Defined Variable [NI] Dev5/51 = 0.0 | | OK | 0 | Sicelo Mtolo - 525130 | TC2 |
| 10079 | I | Manual Isolation | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10080 | A | Turn the Manual Isolation Cock C1.3.1 to Isolated position | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10081 | I | EB Reduced Train Lines Dev5/51 = END2 90XP15 pin 60 | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10082 | R | Read Defined Variable [NI] Dev5/51 = 1.0 | | OK | 1 | Sicelo Mtolo - 525130 | TC2 |
| 10083 | R | Read Defined Variable [TT] (MPU1)li_sbk_tc2servicebrakedc = 1.0 | | OK | 1 | Sicelo Mtolo - 525130 | TC2 |
| 10084 | R | Read Defined Variable [TT] (BCU2)LI_SERVICE_BR_DC = 1.0 | | OK | 1 | Sicelo Mtolo - 525130 | TC2 |
| 10085 | A | Turn the Manual Isolation Cock C1.3.1 to Normal position | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10086 | I | EB Reduced Train Lines Dev5/51 = END2 90XP15 pin 60 | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10087 | R | Read Defined Variable [NI] Dev5/51 = 0.0 | | OK | 0 | Sicelo Mtolo - 525130 | TC2 |
| 10088 | R | Read Defined Variable [TT] (MPU1)li_sbk_tc2servicebrakedc = 0.0 | | OK | 0 | Sicelo Mtolo - 525130 | TC2 |
| 10089 | R | Read Defined Variable [TT] (BCU2)LI_SERVICE_BR_DC = 0.0 | | OK | 0 | Sicelo Mtolo - 525130 | TC2 |
| 10090 | I | MCE Fault | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10091 | A | Force [TT] (BCU2)LO_BRK_FLT = 1.0 | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10092 | R | Read Defined Variable [TT] (MPU1)li_sbk_tc2bcufault = 1.0 | | OK | 1 | Sicelo Mtolo - 525130 | TC2 |
| 10093 | A | Force [TT] (BCU2)LO_BRK_FLT = 0.0 | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10094 | R | Read Defined Variable [TT] (MPU1)li_sbk_tc2bcufault = 0.0 | | OK | 0 | Sicelo Mtolo - 525130 | TC2 |
| 10095 | A | Release [TT] (BCU2)LO_BRK_FLT | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10096 | I | Speed sensor test for TC2 | | OK | | Sicelo Mtolo - 525130 | TC2 |

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|-------|---|--|--|----|---|-----------------------|-----|
| 10097 | A | All connectors from speed sensor (one per axle) is connected to its axle in TC2 car. | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10098 | R | Read Defined Variable [TT] (MPU1)BCU2_BcuSpdSensWSP1Flt = 0.0 | | OK | 0 | Sicelo Mtolo - 525130 | TC2 |
| 10099 | R | Read Defined Variable [TT] (MPU1)BCU2_BcuSpdSensWSP2Flt = 0.0 | | OK | 0 | Sicelo Mtolo - 525130 | TC2 |
| 10100 | R | Read Defined Variable [TT] (MPU1)BCU2_BcuSpdSensWSP3Flt = 0.0 | | OK | 0 | Sicelo Mtolo - 525130 | TC2 |
| 10101 | R | Read Defined Variable [TT] (MPU1)BCU2_BcuSpdSensWSP4Flt = 0.0 | | OK | 0 | Sicelo Mtolo - 525130 | TC2 |
| 10102 | A | Remove the connector -41XP1_D2. (axle 1, bogie 1) | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10103 | R | Read Defined Variable [TT] (MPU1)BCU2_BcuSpdSensWSP1Flt = 1.0 | | OK | 1 | Sicelo Mtolo - 525130 | TC2 |
| 10104 | A | Remove the connector -41XP2_D2. (axle 2, bogie 1) | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10105 | R | Read Defined Variable [TT] (MPU1)BCU2_BcuSpdSensWSP2Flt = 1.0 | | OK | 1 | Sicelo Mtolo - 525130 | TC2 |
| 10106 | A | Remove the connector -41XP3_D2. (axle 1, bogie 2) | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10107 | R | Read Defined Variable [TT] (MPU1)BCU2_BcuSpdSensWSP3Flt = 1.0 | | OK | 1 | Sicelo Mtolo - 525130 | TC2 |
| 10108 | A | Remove the connector -41XP4_D2. (axle 2, bogie 2) | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10109 | R | Read Defined Variable [TT] (MPU1)BCU2_BcuSpdSensWSP4Flt = 1.0 | | OK | 1 | Sicelo Mtolo - 525130 | TC2 |
| 10110 | A | Reconnect all connectors. | | OK | | Sicelo Mtolo - 525130 | TC2 |
| 10111 | R | Read Defined Variable [TT] (MPU1)BCU2_BcuSpdSensWSP1Flt = 0.0 | | OK | 0 | Sicelo Mtolo - 525130 | TC2 |
| 10112 | R | Read Defined Variable [TT] | | OK | 0 | Sicelo Mtolo - 525130 | TC2 |

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|-------|---|--|--|----|---|-----------------------|-----|
| | | (MPU1)BCU2_BcuSpdSensWSP2Flt = 0.0 | | | | | |
| 10113 | R | Read Defined Variable [TT] (MPU1)BCU2_BcuSpdSensWSP3Flt = 0.0 | | OK | 0 | Sicelo Mtolo - 525130 | TC2 |
| 10114 | R | Read Defined Variable [TT] (MPU1)BCU2_BcuSpdSensWSP4Flt = 0.0 | | OK | 0 | Sicelo Mtolo - 525130 | TC2 |



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Section 13 – Holding and Parking Brake

13.3 Instructions list

13.3.1 045_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 | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10002 | I | Initial Conditions | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 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 | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10004 | I | Confirm the presence of air supply to the vehicle. The pressure can be checked at test point BRTP > 4.8 Bar | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10005 | I | Ensure that the Parking Brake Switch 45S1 is in "Normal" position | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10006 | I | Parking Brake Pressure Switch | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10007 | A | Turn the key 30A1.S1 to Active cab position | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10008 | A | Check that the pressure on test point C1.11/1 is >4.8 Bar | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10009 | R | Read Defined Variable [TT] (BCU2)LI_PARK_BR_RELEASE = 1.0 | | OK | 1 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10010 | R | Read Defined Variable [TT] (MPU1)BCU2_ParkBrakeRelease = 1.0 | | OK | 1 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10011 | R | Read Defined Variable [TT] (BCU2)LI_PARK_BR_DC = 0.0 | | OK | 0 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10012 | R | Read Defined Variable [TT] (MPU1)BCU2_ParkBrakeSolDC = 0.0 | | OK | 0 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10013 | I | Parking Brake Applied Train Lines Dev2/74 = Coupler pin 018 Dev2/49 = Coupler pin 118 Dev5/58 = END2 90XP15 pin 77 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10014 | R | Read Defined Variable [NI] Dev2/74 = 0.0 | | OK | 0 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10015 | R | Read Defined Variable [NI] Dev2/49 = 0.0 | | OK | 0 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10016 | R | Read Defined Variable [NI] Dev5/58 = 0.0 | | OK | 0 | Paseka Ditlhakanyane - 491468 | TC2 |

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|-------|---|--|---|----|---|-------------------------------|-----|
| 10017 | R | Check that the Parking Brake Applied Lamp 45H2 on the indicator module 84A1 is OFF |  | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10018 | I | Remote Parking Brake Command | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10019 | A | Turn the Parking Brake Switch 45S1 to "Parking Brake" position | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10020 | R | Confirm that the parking brake is applied, and air is released from electro valve C1.5 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 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 | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10022 | R | Read Defined Variable [NI] Dev2/86 = 1.0 | | OK | 1 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10023 | R | Read Defined Variable [NI] Dev2/87 = 1.0 | | OK | 1 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10024 | R | Read Defined Variable [NI] Dev5/57 = 1.0 | | OK | 1 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10025 | A | Allow the air to reach below 4.8 Bar - verify on test point C1.11/1 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10026 | R | Read Defined Variable [TT] (BCU2)LI_PARK_BR_RELEASE = 0.0 | | OK | 0 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10027 | R | Read Defined Variable [TT] (MPU1)BCU2_ParkBrakeRelease = 0.0 | | OK | 0 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10028 | I | Parking Brake Applied Train Lines Dev2/74 = Coupler pin 018 Dev2/49 = Coupler pin 118 Dev5/58 = END2 90XP15 pin 77 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10029 | R | Read Defined Variable [NI] Dev2/74 = 1.0 | | OK | 1 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10030 | R | Read Defined Variable [NI] Dev2/49 = 1.0 | | OK | 1 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10031 | R | Read Defined Variable [NI] Dev5/58 = 1.0 | | OK | 1 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10032 | R | Check that the Parking Brake Applied Lamp 45H2 on the indicator module 84A1 turns ON |  | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10033 | A | Turn the Parking Brake Switch 45S1 to "Normal" position | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10034 | I | Remote Parking Brake Command Train lines Dev2/86 = Coupler pin 030 Dev2/87 = Coupler pin 130 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |

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|-------|---|---|--|----|---|-------------------------------|-----|
| | | Dev5/57 = END2 90XP15 pin 68 | | | | | |
| 10035 | R | Read Defined Variable [NI] Dev2/86 = 0.0 | | OK | 0 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10036 | R | Read Defined Variable [NI] Dev2/87 = 0.0 | | OK | 0 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10037 | R | Read Defined Variable [NI] Dev5/57 = 0.0 | | OK | 0 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10038 | I | Parking Brake Manual Isolation | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10039 | A | Turn the Parking Brake Isolation cock C1.3.2 to "Isolated" position | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10040 | R | Read Defined Variable [TT] (BCU2)LI_PARK_BR_DC = 1.0 | | OK | 1 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10041 | R | Read Defined Variable [TT] (MPU1)BCU2_ParkBrakeIsolDC = 1.0 | | OK | 1 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10042 | R | Read Defined Variable [TT] (MPU1)li_pbk_tc2parkbrakeisol = 1.0 | | OK | 1 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10043 | I | Parking Brake Applied Train Lines Dev2/74 = Coupler pin 018 Dev2/49 = Coupler pin 118 Dev5/58 = END2 90XP15 pin 77 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10044 | R | Read Defined Variable [NI] Dev2/74 = 0.0 | | OK | 0 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10045 | R | Read Defined Variable [NI] Dev2/49 = 0.0 | | OK | 0 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10046 | R | Read Defined Variable [NI] Dev5/58 = 0.0 | | OK | 0 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10047 | A | Return the Parking Brake Isolation cock C1.3.2 to "Normal" position | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10048 | R | Read Defined Variable [TT] (BCU2)LI_PARK_BR_DC = 0.0 | | OK | 0 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10049 | R | Read Defined Variable [TT] (MPU1)BCU2_ParkBrakeIsolDC = 0.0 | | OK | 0 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10050 | R | Read Defined Variable [TT] (MPU1)li_pbk_tc2parkbrakeisol = 0.0 | | OK | 0 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10051 | I | Parking Brake Applied Train Lines Dev2/74 = Coupler pin 018 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10052 | R | Read Defined Variable [NI] Dev2/74 = 1.0 | | OK | 1 | Paseka Ditlhakanyane - 491468 | TC2 |



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Section 14 – Passenger Doors


14.3 Instructions list

14.3.1 050_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 | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10002 | I | Initial Conditions: | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10003 | A | Turn Driver's Master Key 30A1.S1 to Active Cabin Position | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10004 | I | Car Should be Prepared (closed battery contacts) | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10005 | I | Cab door windows should be closed | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10006 | I | Cab doors should be closed and unlocked | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10007 | I | Cab Door Windows | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10008 | A | Open and close both the LEFT and RIGHT cab door windows | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10009 | R | The LEFT cab door window opens and closes correctly | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10010 | R | The RIGHT cab door window opens and closes correctly | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10011 | I | Cabin Doors | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10012 | A | Open all 3 cab doors (LEFT, RIGHT, and saloon access) and close them | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10013 | R | The LEFT cab door can open fully and close shut | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10014 | R | The RIGHT cab door can open fully and close shut | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10015 | R | The saloon access door can open fully and close shut | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10016 | A | Lock the 3 doors | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10017 | R | The LEFT cab door lock is functioning correctly and the door cannot be opened | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |

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|-------|---|--|--|----|--|---------------------------------------|-----|
| 10018 | R | The RIGHT cab door lock is functioning correctly and the door cannot be opened | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10019 | R | The Saloon access door lock is functioning correctly and the door cannot be opened | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10020 | A | Unlock the doors | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10021 | A | Repeat the open, close and lock operations from the outside of the vehicle | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10022 | R | Both cab doors can be opened, closed and locked from the outside | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10023 | I | External access locks | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10024 | I | Ensure Door 1 and Door 2 are closed | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10025 | A | Insert a square key into the external access lock of Door 1, and unlock the door | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10026 | R | The door is unlocked and can be opened freely | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10027 | A | Close the door, and lock the external access lock with the square key | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10028 | R | The door is locked and can no longer be opened manually | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10029 | A | Insert a square key into the external access lock of Door 2, and unlock the door | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10030 | R | The door is unlocked and can be opened freely | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10031 | A | Close the door, and lock the external access lock with the square key | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10032 | R | The door is locked and can no longer be opened manually | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10033 | I | Circuit Breakers | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10034 | A | Close Circuit Breaker 50Q1 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10035 | R | DCU 1 is powered ON | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10036 | R | Check on the DDU that DCU1 is online | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10037 | A | Close Circuit Breaker 50Q2 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |

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|-------|---|--|---|----|--|---------------------------------------|-----|
| 10038 | R | DCU 2 is powered ON | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10039 | R | Check on the DDU that DCU2 is online | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10040 | A | Close Circuit Breaker 50Q3 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10041 | R | DCU 3 is powered ON | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10042 | R | Check on the DDU that DCU3 is online | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10043 | A | Close Circuit Breaker 50Q4 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10044 | R | DCU 4 is powered ON | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10045 | R | Check on the DDU that DCU4 is online | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10046 | A | Close Circuit Breaker 50Q5 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10047 | R | DCU 5 is powered ON | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10048 | R | Check on the DDU that DCU5 is online | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10049 | A | Close Circuit Breaker 50Q6 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10050 | R | DCU 6 is powered ON | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10051 | R | Check on the DDU that DCU6 is online | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10052 | A | Close Circuit Breaker 50Q7 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10053 | I | Car ID Code | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10054 | A | Using the Door Status screen on the DDU, check that all the doors on TC2 are available - as in the picture below |  | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10055 | R | All doors are available | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10056 | I | Left Side Doors | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10057 | I | Door Authorization | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10058 | I | V<3km/h Train Line Dev4/39 = END2 90XP15 pin 29 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10059 | A | Force [NI] Dev4/39 = 1.0 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10060 | A | Switch Door Authorization Selector 50S7 to DRIVER | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |

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|-------|---|--|--|----|---|---------------------------------------|-----|
| 10061 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2ertmsauthdoor1 = 0.0 | | OK | 0 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10062 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2ertmsauthdoor2 = 0.0 | | OK | 0 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10063 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2authdoorpleft = 0.0 | | OK | 0 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10064 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2doorauthdlefr1 = 1.0 | | OK | 1 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10065 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2doorauthdlefr2 = 1.0 | | OK | 1 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10066 | I | Door Auth Left Train Lines Dev2/56 = Coupler pin 009 Dev2/57 = Coupler pin 124 Dev5/64 = END2 90XP15 pin 85 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10067 | R | Read Defined Variable [NI] Dev2/56 = 0.0 | | OK | 0 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10068 | R | Read Defined Variable [NI] Dev2/57 = 0.0 | | OK | 0 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10069 | R | Read Defined Variable [NI] Dev5/64 = 0.0 | | OK | 0 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10070 | A | Press the Doors LEFT Side Authorization button 50S5 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10071 | R | Check that the YELLOW LEFT Side Authorization pushbutton lamp 50S5 turns ON | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10072 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2authdoorpleft = 1.0 | | OK | 1 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10073 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2doorauthdlefr1 = 0.0 | | OK | 0 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10074 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2doorauthdlefr2 = 0.0 | | OK | 0 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10075 | I | Door Auth Left Train Lines Dev2/56 = Coupler pin 009 Dev2/57 = Coupler pin 124 Dev5/64 = END2 90XP15 pin 85 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10076 | R | Read Defined Variable [NI] Dev2/56 = 1.0 | | OK | 1 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10077 | R | Read Defined Variable [NI] Dev2/57 = 1.0 | | OK | 1 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10078 | R | Read Defined Variable [NI] Dev5/64 = 1.0 | | OK | 1 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10079 | A | Turn Driver's Master Key 30A1.S1 to NON-Active Cabin Position | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |

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|-------|---|---|--|----|---|---------------------------------------|-----|
| 10080 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2doorauthdlefr1 = 0.0 | | OK | 0 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10081 | A | Turn Driver's Master Key 30A1.S1 to Active Cabin Position | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10082 | I | Door Open | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10083 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2opendoorplefr1 = 0.0 | | OK | 0 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10084 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2opendoorplefr2 = 0.0 | | OK | 0 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10085 | R | Read Defined Variable [TT] (MPU1)lo_dor_tc2opendoorlgtlefr1 = 0.0 | | OK | 0 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10086 | R | Read Defined Variable [TT] (MPU1)lo_dor_tc2opendoorlgtlefr2 = 0.0 | | OK | 0 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10087 | A | Press the LEFT side Door Open pushbutton 50S1 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10088 | R | Check that the WHITE LEFT Side Door Open pushbutton lamp 50S1 turns ON | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10089 | R | Check that doors 1, 3 and 5 (LEFT SIDE) open | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10090 | R | Read Defined Variable [TT] (MPU1)lo_dor_tc2opendoorleft = 1.0 | | OK | 1 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10091 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2opendoorplefr1 = 1.0 | | OK | 1 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10092 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2opendoorplefr2 = 1.0 | | OK | 1 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10093 | R | Read Defined Variable [TT] (MPU1)lo_dor_tc2opendoorlgtlefr1 = 1.0 | | OK | 1 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10094 | R | Read Defined Variable [TT] (MPU1)lo_dor_tc2opendoorlgtlefr2 = 1.0 | | OK | 1 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10095 | I | Door Closing | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10096 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2closedoorplefr1 = 0.0 | | OK | 0 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10097 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2closedoorplefr2 = 0.0 | | OK | 0 | Hlawulani Nick Mabundzane - 418320 | TC2 |

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|-------|---|---|--|----|---|---------------------------------------|-----|
| 10098 | R | Read Defined Variable [TT] (MPU1)lo_dor_tc2closedoorlgleftr1 = 0.0 | | OK | 0 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10099 | R | Read Defined Variable [TT] (MPU1)lo_dor_tc2closedoorlgleftr2 = 0.0 | | OK | 0 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10100 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2closedoorlineleft = 0.0 | | OK | 0 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10101 | I | Door Close Left Train Lines Dev2/50 = Coupler pin 004 Dev2/51 = Coupler pin 137 Dev5/60 = END2 90XP15 pin 79 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10102 | R | Read Defined Variable [NI] Dev2/50 = 0.0 | | OK | 0 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10103 | R | Read Defined Variable [NI] Dev2/51 = 0.0 | | OK | 0 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10104 | R | Read Defined Variable [NI] Dev5/60 = 0.0 | | OK | 0 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10105 | A | Press the LEFT side Door Close pushbutton 50S3 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10106 | R | Check that the BLUE LEFT Side Door Close pushbutton lamp 50S3 turns ON | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10107 | R | Check that doors 1, 3 and 5 (LEFT SIDE) close | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10108 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2closedoorpleftr1 = 1.0 | | OK | 1 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10109 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2closedoorpleftr2 = 1.0 | | OK | 1 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10110 | R | Read Defined Variable [TT] (MPU1)lo_dor_tc2closedoorlgleftr1 = 1.0 | | OK | 1 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10111 | R | Read Defined Variable [TT] (MPU1)lo_dor_tc2closedoorlgleftr2 = 1.0 | | OK | 1 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10112 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2closedoorlineleft = 1.0 | | OK | 1 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10113 | I | Door Close Left Train Lines Dev2/50 = Coupler pin 004 Dev2/51 = Coupler pin 137 Dev5/60 = END2 90XP15 pin 79 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10114 | R | Read Defined Variable [NI] Dev2/50 = 1.0 | | OK | 1 | Hlawulani Nick Mabundzane - 418320 | TC2 |

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| 10115 | R | Read Defined Variable [NI] Dev2/51 = 1.0 | | OK | 1 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10116 | R | Read Defined Variable [NI] Dev5/60 = 1.0 | | OK | 1 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10117 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2doorauthdleftr1 = 1.0 | | OK | 1 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10118 | I | Right Side Doors | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10119 | I | Door Authorization | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10120 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2authdoorpbright = 0.0 | | OK | 0 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10121 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2doorauthdrihtr1 = 1.0 | | OK | 1 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10122 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2doorauthdrihtr2 = 1.0 | | OK | 1 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10123 | I | Door Auth Right Train Lines Dev2/54 = Coupler pin 024 Dev2/64 = Coupler pin 109 Dev5/56 = END2 90XP15 pin 84 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10124 | R | Read Defined Variable [NI] Dev2/54 = 0.0 | | OK | 0 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10125 | R | Read Defined Variable [NI] Dev2/64 = 0.0 | | OK | 0 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10126 | R | Read Defined Variable [NI] Dev5/56 = 0.0 | | OK | 0 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10127 | A | Press the Doors RIGHT Side Authorization button 50S6 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10128 | R | Check that the YELLOW RIGHT Side Authorization pushbutton lamp 50S6 turns ON | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10129 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2authdoorpbright = 1.0 | | OK | 1 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10130 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2doorauthdrihtr1 = 0.0 | | OK | 0 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10131 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2doorauthdrihtr2 = 0.0 | | OK | 0 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10132 | I | Door Auth Right Train Lines Dev2/54 = Coupler pin 024 Dev2/64 = Coupler pin 109 Dev5/56 = END2 90XP15 pin 84 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10133 | R | Read Defined Variable [NI] Dev2/54 = 1.0 | | OK | 1 | Hlawulani Nick Mabundzane - 418320 | TC2 |


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| 10134 | R | Read Defined Variable [NI] Dev2/64 = 1.0 | | OK | 1 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10135 | R | Read Defined Variable [NI] Dev5/56 = 1.0 | | OK | 1 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10136 | A | Turn Driver's Master Key 30A1.S1 to NON-Active Cabin Position | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10137 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2doorauthdgrightr1 = 0.0 | | OK | 0 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10138 | A | Turn Driver's Master Key 30A1.S1 to Active Cabin Position | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10139 | I | Door Open | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10140 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2opendoorpbright1 = 0.0 | | OK | 0 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10141 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2opendoorpbright2 = 0.0 | | OK | 0 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10142 | R | Read Defined Variable [TT] (MPU1)lo_dor_tc2opendoorlgrightr1 = 0.0 | | OK | 0 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10143 | R | Read Defined Variable [TT] (MPU1)lo_dor_tc2opendoorlgrightr2 = 0.0 | | OK | 0 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10144 | A | Press the RIGHT side Door Open pushbutton 50S2 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10145 | R | Check that the WHITE RIGHT Side Door Open pushbutton lamp 50S2 turns ON | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10146 | R | Check that doors 2, 4 and 6 (RIGHT SIDE) open | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10147 | R | Read Defined Variable [TT] (MPU1)lo_dor_tc2opendoorright = 1.0 | | OK | 1 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10148 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2opendoorpbright1 = 1.0 | | OK | 1 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10149 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2opendoorpbright2 = 1.0 | | OK | 1 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10150 | R | Read Defined Variable [TT] (MPU1)lo_dor_tc2opendoorlgrightr1 = 1.0 | | OK | 1 | Hlawulani Nick Mabundzane - 418320 | TC2 |


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| 10151 | R | Read Defined Variable [TT] (MPU1)lo_dor_tc2opendoorlgrightr2 = 1.0 | | OK | 1 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10152 | I | Door Closing | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10153 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2closedoorpbrightr1 = 0.0 | | OK | 0 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10154 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2closedoorpbrightr2 = 0.0 | | OK | 0 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10155 | R | Read Defined Variable [TT] (MPU1)lo_dor_tc2closedoorlgrightr1 = 0.0 | | OK | 0 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10156 | R | Read Defined Variable [TT] (MPU1)lo_dor_tc2closedoorlgrightr2 = 0.0 | | OK | 0 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10157 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2closedoorlinerright = 0.0 | | OK | 0 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10158 | I | Door Close Right Train Lines Dev2/52 = Coupler pin 037 Dev2/53 = Coupler pin 104 Dev5/59 = END2 90XP15 pin 78 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10159 | R | Read Defined Variable [NI] Dev2/52 = 0.0 | | OK | 0 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10160 | R | Read Defined Variable [NI] Dev2/53 = 0.0 | | OK | 0 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10161 | R | Read Defined Variable [NI] Dev5/59 = 0.0 | | OK | 0 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10162 | A | Press the RIGHT side Door Close pushbutton 50S4 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10163 | R | Check that the BLUE RIGHT Side Door Close pushbutton lamp 50S4 turns ON | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10164 | R | Check that doors 2, 4 and 6 (RIGHT SIDE) close | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10165 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2closedoorpbrightr1 = 1.0 | | OK | 1 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10166 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2closedoorpbrightr2 = 1.0 | | OK | 1 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10167 | R | Read Defined Variable [TT] | | OK | 1 | Hlawulani Nick Mabundzane - 418320 | TC2 |

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| | | (MPU1)lo_dor_tc2closeddoorlgrightr1 = 1.0 | | | | | |
| 10168 | R | Read Defined Variable [TT] (MPU1)lo_dor_tc2closeddoorlgrightr2 = 1.0 | | OK | 1 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10169 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2closeddoorlinright = 1.0 | | OK | 1 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10170 | I | Door Close Right Train Lines Dev2/52 = Coupler pin 037 Dev2/53 = Coupler pin 104 Dev5/59 = END2 90XP15 pin 78 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10171 | R | Read Defined Variable [NI] Dev2/52 = 1.0 | | OK | 1 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10172 | R | Read Defined Variable [NI] Dev2/53 = 1.0 | | OK | 1 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10173 | R | Read Defined Variable [NI] Dev5/59 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC2 |
| 10174 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2doorauthdgrightr1 = 1.0 | | OK | 1 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10175 | I | Closing Conditions | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10176 | A | Press the Doors LEFT Side Authorization button 50S5 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10177 | I | Door Close Left Train Line Dev5/60 = END2 90XP15 pin 79 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10178 | R | Read Defined Variable [NI] Dev5/60 = 0.0 | | OK | 0 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10179 | A | Press the Doors RIGHT Side Authorization button 50S4 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10180 | I | Door Close Right Train Lines Dev5/59 = END2 90XP15 pin 78 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10181 | R | Read Defined Variable [NI] Dev5/59 = 0.0 | | OK | 0 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10182 | A | Press the LEFT side Door Open pushbutton 50S1 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10183 | A | Press the RIGHT side Door Open pushbutton 50S2 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10184 | I | V>5km/h Train Line Dev4/38 = END2 90XP15 pin 28 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10185 | A | Force [NI] Dev4/38 = 1.0 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |

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|-------|---|---|----|---|---------------------------------------|-----|
| 10186 | R | Read Defined Variable [TT] (MPU1)li_rec_tc2thresholdfive1 = 1.0 | OK | 1 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10187 | R | Read Defined Variable [TT] (MPU1)li_rec_tc2thresholdfive2 = 1.0 | OK | 1 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10188 | I | Door Close Right Train Lines Dev5/59 = END2 90XP15 pin 78 | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10189 | R | Read Defined Variable [NI] Dev5/59 = 1.0 | OK | 1 | Sizwe Sibanyoni - 484647 | TC2 |
| 10190 | I | Door Close Left Train Line Dev5/60 = END2 90XP15 pin 79 | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10191 | R | Read Defined Variable [NI] Dev5/60 = 1.0 | OK | 1 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10192 | R | Check that all the Doors Close | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10193 | I | V>5km/h Train Line Dev4/38 = END2 90XP15 pin 28 | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10194 | A | Force [NI] Dev4/38 = 0.0 | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10195 | R | Read Defined Variable [TT] (MPU1)li_rec_tc2thresholdfive1 = 0.0 | OK | 0 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10196 | R | Read Defined Variable [TT] (MPU1)li_rec_tc2thresholdfive2 = 0.0 | OK | 0 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10197 | I | ERTMS Control | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10198 | A | Switch Door Authorization Selector 50S7 to ERTMS | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10199 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2ertmsauthdoorr1 = 1.0 | OK | 1 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10200 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2ertmsauthdoorr2 = 1.0 | OK | 1 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10201 | I | Left Doors | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10202 | I | ERTMS Auth Left Train Line Dev4/86 = END2 90XP15 pin 44 | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10203 | A | Force [NI] Dev4/86 = 1.0 | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10204 | R | Check that the YELLOW LEFT Side Authorization pushbutton lamp 50S5 turns ON | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10205 | A | Force [TT] (MPU1)lo_dor_tc2distertmsauthleftr1 = 1.0 | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |

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| 10206 | A | Force [TT] (MPU1)lo_dor_tc2distertmsauthlefr2 = 1.0 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10207 | A | Force [TT] (MPU1)lo_dor_tc2opendoorleft = 1.0 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10208 | R | Check that doors 1, 3 and 5 (LEFT SIDE) open | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10209 | A | Release [TT] (MPU1)lo_dor_tc2opendoorleft | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10210 | R | Check that doors 1, 3 and 5 (LEFT SIDE) close | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10211 | A | Press the LEFT side Door Open pushbutton 50S1 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10212 | R | Check that doors 1, 3 and 5 (LEFT SIDE) open | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10213 | I | ERTMS Auth Left Train Line Dev4/86 = END2 90XP15 pin 44 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10214 | A | Force [NI] Dev4/86 = 0.0 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10215 | A | Press the LEFT side Door Close pushbutton 50S3 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10216 | R | Check that doors 1, 3 and 5 (LEFT SIDE) close | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10217 | A | Release [TT] (MPU1)lo_dor_tc2distertmsauthlefr1 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10218 | A | Release [TT] (MPU1)lo_dor_tc2distertmsauthlefr2 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10219 | I | Right Doors | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10220 | I | ERTMS Auth Right Train Line Dev4/87 = END2 90XP15 pin 47 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10221 | A | Force [NI] Dev4/87 = 1.0 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10222 | R | Check that the YELLOW RIGHT Side Authorization pushbutton lamp 50S6 turns ON | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10223 | A | Force [TT] (MPU1)lo_dor_tc2distertmsauthright1 = 1.0 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |

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| 10224 | A | Force [TT] (MPU1)lo_dor_tc2distertmsauthrightr2 = 1.0 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10225 | A | Force [TT] (MPU1)lo_dor_tc2opendoorright = 1.0 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10226 | R | Check that doors 2, 4 and 6 (RIGHT SIDE) open | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10227 | A | Release [TT] (MPU1)lo_dor_tc2opendoorright | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10228 | R | Check that doors 2, 4 and 6 (RIGHT SIDE) close | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10229 | A | Press the RIGHT side Door Open pushbutton 50S2 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10230 | R | Check that doors 2, 4 and 6 (RIGHT SIDE) open | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10231 | I | ERTMS Auth Right Train Line Dev4/87 = END2 90XP15 pin 47 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10232 | A | Force [NI] Dev4/87 = 0.0 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10233 | R | Check that doors 2, 4 and 6 (RIGHT SIDE) close | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10234 | A | Release [TT] (MPU1)lo_dor_tc2distertmsauthrightr1 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10235 | A | Release [TT] (MPU1)lo_dor_tc2distertmsauthrightr2 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10236 | I | Opening Gap, Safety Loop and Obstacle Detection | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10237 | A | Close Circuit Breaker 51Q1 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10238 | A | Check that the Door Safety Loop Indicator lamp 51H1 is ON |  | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10239 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2alldoorsclosedr1 = 1.0 | | OK | 1 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10240 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2alldoorsclosedr2 = 1.0 | | OK | 1 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10241 | I | Safety Doors Loop Train Line Dev2/60 = Coupler pin 016 Dev2/61 = Coupler pin 116 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |

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|-------|---|---|---|----|---|---------------------------------------|-----|
| 10242 | R | Read Defined Variable [NI] Dev2/60 = 0.0 | | OK | 0 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10243 | R | Read Defined Variable [NI] Dev2/61 = 0.0 | | OK | 0 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10244 | I | Doors Open Train Line Dev2/82 = Coupler pin 029 Dev2/83 = Coupler pin 129 Dev5/55 = END2 90XP15 pin 66 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10245 | R | Read Defined Variable [NI] Dev2/82 = 1.0 | | OK | 1 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10246 | R | Read Defined Variable [NI] Dev2/83 = 1.0 | | OK | 1 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10247 | R | Read Defined Variable [NI] Dev5/55 = 1.0 | | OK | 1 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10248 | I | Safety Doors Loop Train Line Dev4/89 = END2 90XP25 pin 96 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10249 | A | Force [NI] Dev4/89 = 1.0 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10250 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2alldoorsclosedr1 = 0.0 | | OK | 0 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10251 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2alldoorsclosedr2 = 0.0 | | OK | 0 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10252 | I | Safety Doors Loop Train Line Dev2/60 = Coupler pin 016 Dev2/61 = Coupler pin 116 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10253 | R | Read Defined Variable [NI] Dev2/60 = 1.0 | | OK | 1 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10254 | R | Read Defined Variable [NI] Dev2/61 = 1.0 | | OK | 1 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10255 | I | Doors Open Train Line Dev2/82 = Coupler pin 029 Dev2/83 = Coupler pin 129 Dev5/55 = END2 90XP15 pin 66 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10256 | R | Read Defined Variable [NI] Dev2/82 = 0.0 | | OK | 0 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10257 | R | Read Defined Variable [NI] Dev2/83 = 0.0 | | OK | 0 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10258 | R | Read Defined Variable [NI] Dev5/55 = 0.0 | | OK | 0 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10259 | A | Check that the Door Safety Loop Indicator lamp 51H1 is OFF |  | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10260 | I | Door 1 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10261 | I | ERTMS Auth Left Train Line Dev4/86 = END2 90XP15 pin 44 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10262 | A | Force [NI] Dev4/86 = 1.0 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |

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| 10263 | A | Force [TT] (MPU1)lo_dor_tc2distertmsauthlefr1 = 1.0 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10264 | A | Force [TT] (MPU1)lo_dor_tc2distertmsauthlefr2 = 1.0 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10265 | A | Force [TT] (MPU1)lo_dor_tc2opendoorleft = 1.0 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10266 | R | Check that the door opens in 3 sec (+1/-0) | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10267 | R | Check that the GREEN leds on both sides of the door blink while the door opens [Safety Request: Prasa8-05] | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10268 | I | Doors Open Train Line Dev2/82 = Coupler pin 029 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10269 | R | Read Defined Variable [NI] Dev2/82 = 1.0 | | OK | 1 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10270 | I | Door Opening Gap | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10271 | A | Measure the opening gap of the door. (The measurement must be done at the BOTTOM of the door). | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10272 | R | Door 1 gap Result Min/Max : 1390<= x <= 1410 (mm) | | OK | 1392 | Thandanani Makhanya - 463827 | TC2 |
| 10273 | A | Measure the opening gap of the door. (The measurement must be done at the TOP of the door). | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10274 | R | Door 1 gap Result Min/Max : 1390<= x <= 1410 (mm) | | OK | 1400 | Thandanani Makhanya - 463827 | TC2 |
| 10275 | A | Measure the opening gap of the door. (The measurement must be done in the MIDDLE of the door). | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10276 | R | Door 1 gap Result Min/Max : 1390<= x <= 1410 (mm) | | OK | 1396 | Thandanani Makhanya - 463827 | TC2 |
| 10277 | I | Door 3 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10278 | I | Door Opening Gap | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10279 | A | Measure the opening gap of the door. (The measurement must be done at the BOTTOM of the door). | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |

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| 10280 | R | Door 3 gap Result Min/Max : 1390<= x <= 1410 (mm) | | OK | 1398 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10281 | A | Measure the opening gap of the door. (The measurement must be done at the TOP of the door). | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10282 | R | Door 3 gap Result Min/Max : 1390<= x <= 1410 (mm) | | OK | 1410 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10283 | A | Measure the opening gap of the door. (The measurement must be done in the MIDDLE of the door). | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10284 | R | Door 3 gap Result Min/Max : 1390<= x <= 1410 (mm) | | OK | 1406 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10285 | I | Door 5 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10286 | I | Door Opening Gap | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10287 | A | Measure the opening gap of the door. (The measurement must be done at the BOTTOM of the door). | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10288 | R | Door 5 gap Result Min/Max : 1390<= x <= 1410 (mm) | | OK | 1390 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10289 | A | Measure the opening gap of the door. (The measurement must be done at the TOP of the door). | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10290 | R | Door 5 gap Result Min/Max : 1390<= x <= 1410 (mm) | | OK | 1400 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10291 | A | Measure the opening gap of the door. (The measurement must be done in the MIDDLE of the door). | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10292 | R | Door 5 gap Result Min/Max : 1390<= x <= 1410 (mm) | | OK | 1396 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10293 | A | Release [TT] (MPU1)lo_dor_tc2opendoorleft | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10294 | R | Check if ALL left doors closes in 3 sec (+1/-0) | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10295 | R | Check that the RED leds on both sides of the door blink while the door closes [Safety Request: Prasa8-05] | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10296 | I | Doors Open Train Line Dev2/82 = Coupler pin 029 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |

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| 10297 | R | Read Undefined Variable [NI] Dev2/82 | | OK | 1 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10298 | A | Release [TT] (MPU1)lo_dor_tc2distertmsauthlefr1 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10299 | A | Release [TT] (MPU1)lo_dor_tc2distertmsauthlefr2 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10300 | I | ERTMS Auth Left Train Line Dev4/86 = END2 90XP15 pin 44 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10301 | A | Force [NI] Dev4/86 = | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10302 | I | Door 2 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10303 | I | ERTMS Auth Right Train Line Dev4/87 = END2 90XP15 pin 47 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10304 | A | Force [NI] Dev4/87 = | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10305 | A | Force [TT] (MPU1)lo_dor_tc2distertmsauthrightr1 = | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10306 | A | Force [TT] (MPU1)lo_dor_tc2distertmsauthrightr2 = | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10307 | A | Force [TT] (MPU1)lo_dor_tc2opendoorright = | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10308 | R | Check that the door opens in 3 sec (+1/-0) | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10309 | R | Check that the GREEN leds on both sides of the door blink while the door opens [Safety Request: Prasa8-05] | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10310 | I | Doors Open Train Line Dev2/82 = Coupler pin 029 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10311 | R | Read Undefined Variable [NI] Dev2/82 | | OK | 0 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10312 | I | Door Opening Gap | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10313 | A | Measure the opening gap of the door. (The measurement must be done at the BOTTOM of the door). | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10314 | R | Door 2 gap Result Min/Max : 1390<= x <= 1410 (mm) | | OK | 1396 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10315 | A | Measure the opening gap of the door. (The measurement must be done at the TOP of the door). | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |

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| 10316 | R | Door 2 gap Result Min/Max : 1390<= x <= 1410 (mm) | | OK | 1408 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10317 | A | Measure the opening gap of the door. (The measurement must be done in the MIDDLE of the door). | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10318 | R | Door 2 gap Result Min/Max : 1390<= x <= 1410 (mm) | | OK | 1400 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10319 | I | Door 4 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10320 | I | Door Opening Gap | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10321 | A | Measure the opening gap of the door. (The measurement must be done at the BOTTOM of the door). | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10322 | R | Door 4 gap Result Min/Max : 1390<= x <= 1410 (mm) | | OK | 1394 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10323 | A | Measure the opening gap of the door. (The measurement must be done at the TOP of the door). | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10324 | R | Door 4 gap Result Min/Max : 1390<= x <= 1410 (mm) | | OK | 1402 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10325 | A | Measure the opening gap of the door. (The measurement must be done in the MIDDLE of the door). | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10326 | R | Door 4 gap Result Min/Max : 1390<= x <= 1410 (mm) | | OK | 1400 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10327 | I | Door 6 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10328 | I | Door Opening Gap | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10329 | A | Measure the opening gap of the door. (The measurement must be done at the BOTTOM of the door). | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10330 | R | Door 6 gap Result Min/Max : 1390<= x <= 1410 (mm) | | OK | 1398 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10331 | A | Measure the opening gap of the door. (The measurement must be done at the TOP of the door). | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10332 | R | Door 6 gap Result Min/Max : 1390<= x <= 1410 (mm) | | OK | 1406 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10333 | A | Measure the opening gap of the door. (The measurement must be done in the | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |

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| | | MIDDLE of the door). | | | | | |
| 10334 | R | Door 6 gap Result Min/Max : 1390<= x <= 1410 (mm) | | OK | 1400 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10335 | I | Obstacle Detection | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10336 | I | ERTMS Auth Left Train Line Dev4/86 = END2 90XP15 pin 44 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10337 | A | Force [NI] Dev4/86 = 1.0 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10338 | A | Force [TT] (MPU1)lo_dor_tc2distertmsauthlefr1 = 1.0 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10339 | A | Force [TT] (MPU1)lo_dor_tc2distertmsauthlefr2 = 1.0 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10340 | A | Position an obstacle on the floor in the centre of each and every door closing line | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10341 | A | Release [TT] (MPU1)lo_dor_tc2opendoorright | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10342 | A | Release [TT] (MPU1)lo_dor_tc2opendoorleft | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10343 | 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 | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10344 | A | Force [TT] (MPU1)lo_dor_tc2opendoorright = 1.0 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10345 | A | Force [TT] (MPU1)lo_dor_tc2opendoorleft = 1.0 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10346 | A | Remove the obstacles | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10347 | A | Release [TT] (MPU1)lo_dor_tc2opendoorright | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10348 | A | Release [TT] (MPU1)lo_dor_tc2opendoorleft | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10349 | R | Check if ALL doors closes in 3 sec (+1/-0) | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10350 | R | Check that the RED leds on both sides of the door blink while the door closes | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |

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| | | [Safety Request: Prasa8-05] | | | | | |
| 10351 | I | Doors Open Train Line Dev2/82 = Coupler pin 029 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10352 | R | Read Defined Variable [NI] Dev2/82 = 0.0 | | OK | 0 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10353 | A | Release [TT] (MPU1)lo_dor_tc2distertmsauthrightr1 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10354 | A | Release [TT] (MPU1)lo_dor_tc2distertmsauthrightr2 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10355 | A | Release [TT] (MPU1)lo_dor_tc2distertmsauthlefr1 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10356 | A | Release [TT] (MPU1)lo_dor_tc2distertmsauthlefr2 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10357 | I | Safety Doors Loop Train Line Dev4/89 = END2 90XP25 pin 96 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10358 | A | Force [NI] Dev4/89 = 0.0 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10359 | I | ERTMS Auth Right Train Line Dev4/87 = END2 90XP15 pin 47 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10360 | A | Force [NI] Dev4/87 = 0.0 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10361 | I | V<3km/h Train Line Dev4/39 = END2 90XP15 pin 29 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10362 | A | Force [NI] Dev4/39 = 0.0 | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10363 | A | Switch Door Authorization Selector 50S7 to DRIVER | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |



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TS228 – TC2 – VFT
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Section 15 – HVAC Air Conditioning


15.3 Instructions list



15.3.1 057_HVA-HVAC Air Conditioning

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



| N° | Type | Instruction | File | Result status | Result value | Operator | Vehicle |
|-------|------|--|------|---------------|--------------|--------------------------|---------|
| 10001 | I | Initial conditions | | OK | | Philemon Milani - 484650 | TC2 |
| 10002 | A | Car Should be Prepared | | OK | | Philemon Milani - 484650 | TC2 |
| 10003 | I | Power Supply | | OK | | Philemon Milani - 484650 | TC2 |
| 10004 | A | Remove Connector 57XP1_5 from HVAC Panel | | OK | | Philemon Milani - 484650 | TC2 |
| 10005 | A | Close Circuit Breaker 57Q2 | | OK | | Philemon Milani - 484650 | TC2 |
| 10006 | A | Force [TT] (MPU1)lo_hva_tc2hvacinhibr1__1 = 0.0 | | OK | | Philemon Milani - 484650 | TC2 |
| 10007 | A | Force [TT] (MPU1)lo_hva_tc2hvacinhibr2__1 = 0.0 | | OK | | Philemon Milani - 484650 | TC2 |
| 10008 | R | Check battery voltage (above 80Vdc) between points 11 and 9 of the connector 57XP1_5 | | OK | | Philemon Milani - 484650 | TC2 |
| 10009 | A | Force [TT] (MPU1)lo_hva_tc2hvacinhibr2__1 = 1.0 | | OK | | Philemon Milani - 484650 | TC2 |
| 10010 | R | Check 0Vdc between points 11 and 9 of the connector 57XP1_5 | | OK | | Philemon Milani - 484650 | TC2 |
| 10011 | A | Force [TT] (MPU1)lo_hva_tc2hvacinhibr1__1 = 1.0 | | OK | | Philemon Milani - 484650 | TC2 |
| 10012 | R | Check 0Vdc between points 11 and 9 of the connector 57XP1_5 | | OK | | Philemon Milani - 484650 | TC2 |
| 10013 | R | Check 0Vdc between points 10 and 9 of the connector 57XP1_5 | | OK | | Philemon Milani - 484650 | TC2 |
| 10014 | A | Force [TT] (MPU1)lo_hva_tc2hvacinhibr2__1 = 0.0 | | OK | | Philemon Milani - 484650 | TC2 |
| 10015 | A | Force [TT] (MPU1)lo_hva_tc2emergventil__1 = 1.0 | | OK | | Philemon Milani - 484650 | TC2 |
| 10016 | R | Check 0Vdc between points 11 and 9 of the connector 57XP1_5 | | OK | | Philemon Milani - 484650 | TC2 |

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|-------|---|--|---|----|---|------------------------------|-----|
| 10017 | R | Check battery voltage (above 80Vdc) between points 10 and 9 of the connector 57XP1_5 | | OK | | Philemon Milani - 484650 | TC2 |
| 10018 | A | Release [TT] (MPU1)lo_hva_tc2emergventil__1 | | OK | | Philemon Milani - 484650 | TC2 |
| 10019 | A | Release [TT] (MPU1)lo_hva_tc2hvacinhibr1__1 | | OK | | Philemon Milani - 484650 | TC2 |
| 10020 | A | Release [TT] (MPU1)lo_hva_tc2hvacinhibr2__1 | | OK | | Philemon Milani - 484650 | TC2 |
| 10021 | A | Put Back the Connector 57XP1_5 from HVAC Panel | | OK | | Philemon Milani - 484650 | TC2 |
| 10022 | I | HVAC Electronic Power Supply | | OK | | Philemon Milani - 484650 | TC2 |
| 10023 | A | Close Circuit Breaker F1 on the HVAC Panel | | OK | | Philemon Milani - 484650 | TC2 |
| 10024 | A | Turn the control switch to AUTO position on the HVAC Panel | | OK | | Philemon Milani - 484650 | TC2 |
| 10025 | R | The HVAC electronic is ON | | OK | | Philemon Milani - 484650 | TC2 |
| 10026 | A | Open Circuit Breaker F1 on the HVAC Panel | | OK | | Philemon Milani - 484650 | TC2 |
| 10027 | R | The HVAC electronic is OFF | | OK | | Philemon Milani - 484650 | TC2 |
| 10028 | A | Close Circuit Breaker F1 on the HVAC Panel | | OK | | Philemon Milani - 484650 | TC2 |
| 10029 | I | Software Upload |  | OK | | Philemon Milani - 484650 | TC2 |
| 10030 | I | Follow the procedure in the document below to upload software onto the HVAC electronic |  | OK | | Philemon Milani - 484650 | TC2 |
| 10031 | I | Sensor's Grade | | OK | | Philemon Milani - 484650 | TC2 |
| 10032 | I | Each temperature sensor has calibrated grade information. The sensor must be setup with this information. | | OK | | Philemon Milani - 484650 | TC2 |
| 10033 | A | The label with sensor grade information is found inside the HVAC frame, near the filter. Inside the train, open the ceiling filter access, rotate a damper and read the label. | | OK | | Philemon Milani - 484650 | TC2 |
| 10034 | R | Sensor grade for HVAC Return Air (RAS) is: | | OK | 4 | Thandanani Makhanya - 463827 | TC2 |

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|-------|---|---|---|----|----|------------------------------|-----|
| 10035 | R | Sensor grade for HVAC Duct Air (DAS) is: | | OK | 4 | Thandanani Makhanya - 463827 | TC2 |
| 10036 | R | Sensor grade for HVAC Fresh Air (FAS) is: | | OK | 4 | Thandanani Makhanya - 463827 | TC2 |
| 10037 | R | Sensor grade for HVAC Duct Air 2 (DAS2) is: | | OK | 4L | Thandanani Makhanya - 463827 | TC2 |
| 10038 | A | In the maintenance software, select the "Application settings" page and click the "Sensors" tab | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10039 | A | Enter the data found on the label for each grade. Then, click "Save settings" |  | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10040 | A | Open Circuit Breaker F1 on the HVAC Panel | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10041 | I | Checking 400Vac | | OK | | Philemon Milani - 484650 | TC2 |
| 10042 | A | Ensure that the 400Vac Shore Supply is connected to the vehicle, else connect it | | OK | | Philemon Milani - 484650 | TC2 |
| 10043 | A | Close Circuit Breaker 57Q1 | | OK | | Philemon Milani - 484650 | TC2 |
| 10044 | A | Measure 400Vac in the Terminal Block next to the connector '57XP1_10. A / '57XP1_10. B' on the HVAC Panel | | OK | | Philemon Milani - 484650 | TC2 |
| 10045 | R | 400Vac measured | | OK | | Philemon Milani - 484650 | TC2 |
| 10046 | A | On the HVAC Panel check 400Vac between points L1- Phase R, L2- Phase S, L3- Phase T | | OK | | Philemon Milani - 484650 | TC2 |
| 10047 | R | 400Vac is measured between each of the phases | | OK | | Philemon Milani - 484650 | TC2 |
| 10048 | A | On the HVAC Panel, with a phasemeter, check the correct Phase Rotation between points L1- Phase R, L2- Phase S and L3- Phase T. | | OK | | Philemon Milani - 484650 | TC2 |
| 10049 | R | The phase rotation is correct between all three phases | | OK | | Philemon Milani - 484650 | TC2 |
| 10050 | I | Using the tools list on the side of your screen, log the details of the phasemeter used | | OK | | Philemon Milani - 484650 | TC2 |
| 10051 | I | Saloon HVAC | | OK | | Philemon Milani - 484650 | TC2 |
| 10052 | A | Close Circuit Breaker F1 on the HVAC Panel | | OK | | Philemon Milani - 484650 | TC2 |

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|-------|---|---|---|----|--|--------------------------|-----|
| 10053 | R | HVAC unit turns ON and starts to work | | OK | | Philemon Milani - 484650 | TC2 |
| 10054 | I | Reconnect the laptop to the HVAC maintenance software using HCU Finder | | OK | | Philemon Milani - 484650 | TC2 |
| 10055 | R | The Exhaust fans are Turned Off (Confirm on Forced tab that Actual exhauster speed is OFF) |  | OK | | Philemon Milani - 484650 | TC2 |
| 10056 | I | Forced Mode (Saloon HVAC) | | OK | | Philemon Milani - 484650 | TC2 |
| 10057 | I | For the next sections, walk through the whole car and physically check (feel) that the HVAC is functioning as desired |  | OK | | Philemon Milani - 484650 | TC2 |
| 10058 | I | In the maintenance software, select the 'Forced' tab, and use the "Required working mode" drop down box to force the following modes: | | OK | | Philemon Milani - 484650 | TC2 |
| 10059 | I | Ventilation Mode | | OK | | Philemon Milani - 484650 | TC2 |
| 10060 | A | Force Ventilation mode on the Saloon HVAC | | OK | | Philemon Milani - 484650 | TC2 |
| 10061 | R | All saloon HVAC units work in Ventilation mode. Not heating/cooling | | OK | | Philemon Milani - 484650 | TC2 |
| 10062 | R | The Exhaust fans are Turned OFF | | OK | | Philemon Milani - 484650 | TC2 |
| 10063 | I | Cooling Mode | | OK | | Philemon Milani - 484650 | TC2 |
| 10064 | A | Force Cooling mode on the Saloon HVAC | | OK | | Philemon Milani - 484650 | TC2 |
| 10065 | R | All saloon HVAC units work in Cooling mode | | OK | | Philemon Milani - 484650 | TC2 |
| 10066 | R | The Exhaust fans are Turned OFF | | OK | | Philemon Milani - 484650 | TC2 |
| 10067 | I | Heating Mode | | OK | | Philemon Milani - 484650 | TC2 |
| 10068 | A | Force Heating mode on the Saloon HVAC | | OK | | Philemon Milani - 484650 | TC2 |
| 10069 | R | All saloon HVAC units work in Heating mode | | OK | | Philemon Milani - 484650 | TC2 |
| 10070 | R | The Exhaust fans are Turned OFF | | OK | | Philemon Milani - 484650 | TC2 |
| 10071 | I | Automatic Mode | | OK | | Philemon Milani - 484650 | TC2 |
| 10072 | A | Force Self-Test on the Saloon HVAC | | OK | | Philemon Milani - 484650 | TC2 |

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|-------|---|--|--|----|---|------------------------------|-----|
| 10073 | R | All saloon HVAC units work according to the mode described in the "Actual working mode" | | OK | | Philemon Milani - 484650 | TC2 |
| 10074 | R | The Exhaust fans are Turned OFF | | OK | | Philemon Milani - 484650 | TC2 |
| 10075 | I | Cabin Footrest Heater Test | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10076 | I | Use the tools list on the side of your screen, to record the serial number of the Infrared Thermometer that will be used in the next section | | OK | | Philemon Milani - 484650 | TC2 |
| 10077 | A | Close Circuit Breaker 57Q3 | | OK | | Philemon Milani - 484650 | TC2 |
| 10078 | R | The Foot Heater pushbutton white lamp 57S3 is OFF | | OK | | Philemon Milani - 484650 | TC2 |
| 10079 | R | Foot Heater is Off (UDM) | | OK | | Philemon Milani - 484650 | TC2 |
| 10080 | A | Press the Foot Heater Pushbutton 57S3 | | OK | | Philemon Milani - 484650 | TC2 |
| 10081 | R | The Foot Heater pushbutton white lamp 57S3 is ON | | OK | | Philemon Milani - 484650 | TC2 |
| 10082 | R | Read Defined Variable [TT] (MPU1)li_hva_tc2footheaterfault__1 = 0.0 | | OK | 0 | Philemon Milani - 484650 | TC2 |
| 10083 | R | Foot Heater is ON (allow some time for it to heat up and confirm with the Infrared Thermometer that it is heating up) | | OK | | Philemon Milani - 484650 | TC2 |
| 10084 | A | Once verified working, press the Foot Heater Pushbutton 57S3 | | OK | | Philemon Milani - 484650 | TC2 |
| 10085 | R | The Foot Heater pushbutton white lamp 57S3 is OFF | | OK | | Philemon Milani - 484650 | TC2 |
| 10086 | R | Read Defined Variable [TT] (MPU1)li_hva_tc2footheaterfault__1 = 0.0 | | OK | 0 | Philemon Milani - 484650 | TC2 |
| 10087 | R | Foot Heater is OFF (allow some time for it to cool down and confirm with the Infrared Thermometer that it is cooling down) | | OK | | Philemon Milani - 484650 | TC2 |
| 10088 | A | Check that the Footrest can go up by slightly pressing the adjusting pedal | | OK | | Philemon Milani - 484650 | TC2 |
| 10089 | R | The Footrest is adjustable, it can go up. | | OK | | Philemon Milani - 484650 | TC2 |
| 10090 | A | Check that the Footrest can go down by pressing the adjusting pedal. Ensure the | | OK | | Philemon Milani - 484650 | TC2 |

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|-------|---|---|---|----|--|--------------------------|-----|
| | | other foot applies force on the Footrest | | | | | |
| 10091 | R | The Footrest is adjustable, it can go down. | | OK | | Philemon Milani - 484650 | TC2 |
| 10092 | I | Forced Mode (Cabin HVAC) |  | OK | | Philemon Milani - 484650 | TC2 |
| 10093 | I | In the maintenance software, select the 'Forced' tab, and use the "Required working mode" drop down box to force the following modes: | | OK | | Philemon Milani - 484650 | TC2 |
| 10094 | I | Ventilation Mode | | OK | | Philemon Milani - 484650 | TC2 |
| 10095 | A | Force Ventilation mode on the Cab HVAC | | OK | | Philemon Milani - 484650 | TC2 |
| 10096 | R | The Cab HVAC works in Ventilation mode. Not heating/cooling | | OK | | Philemon Milani - 484650 | TC2 |
| 10097 | I | Cooling Mode | | OK | | Philemon Milani - 484650 | TC2 |
| 10098 | A | Force Cooling mode on the Cab HVAC | | OK | | Philemon Milani - 484650 | TC2 |
| 10099 | R | The Cab HVAC works in Cooling mode | | OK | | Philemon Milani - 484650 | TC2 |
| 10100 | I | Heating Mode | | OK | | Philemon Milani - 484650 | TC2 |
| 10101 | A | Force Heating mode on the Cab HVAC | | OK | | Philemon Milani - 484650 | TC2 |
| 10102 | R | The Cab HVAC works in Heating mode | | OK | | Philemon Milani - 484650 | TC2 |
| 10103 | I | Automatic Mode | | OK | | Philemon Milani - 484650 | TC2 |
| 10104 | A | Force Automatic mode on the Cab HVAC | | OK | | Philemon Milani - 484650 | TC2 |
| 10105 | R | The Cab HVAC works in Automatic mode - according to the mode described in the "Actual working mode" | | OK | | Philemon Milani - 484650 | TC2 |
| 10106 | I | HVAC Faults | | OK | | Philemon Milani - 484650 | TC2 |
| 10107 | A | In the maintenance software, select the "Alarms / Warnings" tab |  | OK | | Philemon Milani - 484650 | TC2 |
| 10108 | A | Ensure there are no active faults on the HVAC | | OK | | Philemon Milani - 484650 | TC2 |
| 10109 | R | No active faults identified on the HVAC unit | | OK | | Philemon Milani - 484650 | TC2 |
| 10110 | I | Air Flow Measure | | OK | | Philemon Milani - 484650 | TC2 |
| 10111 | I | Using the tools list on the side of your screen, log the details of the anemometer | | OK | | Philemon Milani - 484650 | TC2 |

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|-------|---|--|--|----|----|--------------------------|-----|
| | | used | | | | | |
| 10112 | A | Check that the windshield air outlet is open | | OK | | Philemon Milani - 484650 | TC2 |
| 10113 | A | On the left side diffuser, put an anemometer in the middle of the air diffuser directly in contact with the grill | | OK | | Philemon Milani - 484650 | TC2 |
| 10114 | A | Record the average air speed over 30 s | | OK | | Philemon Milani - 484650 | TC2 |
| 10115 | R | Average air speed | | OK | 26 | Philemon Milani - 484650 | TC2 |
| 10116 | A | On the right-side diffuser, put the anemometer in the middle of air diffuser directly in contact with the grill | | OK | | Philemon Milani - 484650 | TC2 |
| 10117 | A | Record the average air speed over 30s | | OK | | Philemon Milani - 484650 | TC2 |
| 10118 | R | Average air speed | | OK | 21 | Philemon Milani - 484650 | TC2 |
| 10119 | 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 | | Philemon Milani - 484650 | TC2 |
| 10120 | R | Difference between left-right air flow is within 15% | | OK | | Philemon Milani - 484650 | TC2 |
| 10121 | R | Cabin HVAC turned OFF | | OK | | Philemon Milani - 484650 | TC2 |



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Section 16 – Fire Protection

16.3 Instructions list

16.3.1 067_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 | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10002 | I | Initial conditions | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10003 | I | Car Should be Prepared | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10004 | I | Fire Detection Control | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10005 | I | Fire Detection Train Lines Dev4/76 = END2 90XP14 pin 21 Dev2/7 = END1 Coupler pin 008 Dev2/33 = END1 Coupler pin 108 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10006 | A | Force [NI] Dev4/76 = 1.0 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10007 | R | Read Defined Variable [NI] Dev2/7 = 1.0 | | OK | 1 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10008 | R | Read Defined Variable [NI] Dev2/33 = 1.0 | | OK | 1 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10009 | A | Check on the Alarm Module that the Fire Alarm 67H1 is illuminated | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10010 | I | Fire Detection Train Lines Dev4/76 = END2 90XP14 pin 21 Dev2/7 = END1 Coupler pin 008 Dev2/33 = END1 Coupler pin 108 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10011 | A | Force [NI] Dev4/76 = 0.0 | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10012 | R | Read Defined Variable [NI] Dev2/7 = 0.0 | | OK | 0 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10013 | R | Read Defined Variable [NI] Dev2/33 = 0.0 | | OK | 0 | Paseka Ditlhakanyane - 491468 | TC2 |
| 10014 | A | Check on the Alarm Module that the Fire Alarm 67H1 is OFF | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10015 | I | Continuity Check | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |

| | | | | | | | |
|-------|---|--|--|----|--|-------------------------------|-----|
| 10016 | A | Check the continuity between the two provided points of the line below | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10017 | A | From: [(local: +END2 connector - 90XP13.b (pin 4))] to: [-67A1 (local: +END2 connector -90XP13.a (pin 7))] | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10018 | A | From: [(local: +END2 connector - 90XP13.b (pin 5))] to: [-67A1 (local: +END2 connector -90XP13.a (pin 8))] | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |

Section 17 – Driving Command

17.3 Instructions list

17.3.1 030_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 | | Tshembhani Khosa - 446920 | TC2 |
| 10002 | I | Initial conditions | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10003 | I | Cabin should be active | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10004 | A | Ensure all the doors are closed | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10005 | A | Ensure that there is air connected to the main pipe | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10006 | A | Force [TT] (BCU1)li_mp_ps_ok = 1.0 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10007 | I | Circuit Breakers | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10008 | A | Close Circuit Breaker "30Q1" | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10009 | A | Close Circuit Breaker "30Q2" | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10010 | A | Close Circuit Breaker "30Q3" | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10011 | A | Close Circuit Breaker "31Q1" | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10012 | I | Direction Selector Switch | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10013 | I | Set the Running Direction Switch 30A1.S2 to "Neutral" position | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10014 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dsnozeror1 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10015 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dsnozeror2 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10016 | I | Set the Running Direction Switch 30A1.S2 to "Reverse" position | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10017 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dsnozeror1 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10018 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dsnozeror2 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10019 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dsreverser1 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |

| | | | | | | | |
|-------|---|---|--|----|---|------------------------------|-----|
| 10020 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dsreverser2 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10021 | I | Reverse Train lines Dev2/28 = coupler pin 011 Dev2/29 = coupler pin 132 Dev5/78 = END2 90XP15 pin 30 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10022 | R | Read Defined Variable [NI] Dev2/28 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10023 | R | Read Defined Variable [NI] Dev2/29 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10024 | R | Read Defined Variable [NI] Dev5/78 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10025 | I | Set the Running Direction Switch 30A1.S2 to "Forward" position | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10026 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dsnozeror1 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10027 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dsreverser1 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10028 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dsreverser2 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10029 | R | Read Defined Variable [NI] Dev2/28 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10030 | I | Reverse Train lines Dev2/28 = coupler pin 011 Dev2/29 = coupler pin 132 Dev5/78 = END2 90XP15 pin 30 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10031 | R | Read Defined Variable [NI] Dev2/29 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10032 | R | Read Defined Variable [NI] Dev5/78 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10033 | I | Forward Train lines Dev2/26 = coupler pin 032 Dev2/27 = coupler pin 111 Dev5/35 = END2 90XP15 pin 25 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10034 | R | Read Defined Variable [NI] Dev2/26 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10035 | R | Read Defined Variable [NI] Dev2/27 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10036 | R | Read Defined Variable [NI] Dev5/35 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10037 | I | Set the Running Direction Switch 30A1.S2 to "Neutral" position | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10038 | R | Read Defined Variable [NI] Dev2/26 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10039 | I | Forward Train lines Dev2/26 = coupler pin 032 | | OK | | Tshembhani Khosa - 446920 | TC2 |

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| | | Dev2/27 = coupler pin 111 Dev5/35 = END2 90XP15 pin 25 | | | | | |
| 10040 | R | Read Defined Variable [NI] Dev2/27 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10041 | R | Read Defined Variable [NI] Dev5/35 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10042 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dsnozeror1 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10043 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dsreverser1 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10044 | I | Driving Mode | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10045 | A | Turn the Driving Mode Switch 30S1 to "Speed" position | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10046 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dmodebit1r1 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10047 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dmodebit1r2 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10048 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dmodebit2r1 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10049 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dmodebit2r2 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10050 | A | Turn the Driving Mode Switch 30S1 to "Effort" position | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10051 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dmodebit1r1 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10052 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dmodebit3r1 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10053 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dmodebit2r1 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10054 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dmodebit2r2 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10055 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dmodebit4r1 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10056 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dmodebit4r2 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10057 | A | Turn the Driving Mode Switch 30S1 to "Depot" position | | OK | | Tshembhani Khosa - 446920 | TC2 |

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| 10058 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dmodebit1r1 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10059 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dmodebit1r2 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10060 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dmodebit2r1 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10061 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dmodebit3r1 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10062 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dmodebit4r1 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10063 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dmodebit4r2 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10064 | A | Turn the Driving Mode Switch 30S1 to "Couple/Wash" position | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10065 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dmodebit1r1 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10066 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dmodebit2r1 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10067 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dmodebit3r1 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10068 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dmodebit3r2 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10069 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dmodebit4r1 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10070 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dmodebit4r2 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10071 | I | Reduced Power | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10072 | A | Press and hold the Reduced Power Pushbutton 30S2 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10073 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2reducedpowerr1 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10074 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2reducedpowerr2 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10075 | A | Release the Reduced Power Pushbutton 30S2 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10076 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2reducedpowerr1 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |

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| 10077 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2reducedpower2 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10078 | A | Force [TT] (MPU1)lo_drc_tc2reducedlampr1 = 1.0 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10079 | R | Check that the Reduced Power Pushbutton lamp is ON | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10080 | A | Release [TT] (MPU1)lo_drc_tc2reducedlampr1 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10081 | R | Check that the Reduced Power Pushbutton lamp is OFF | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10082 | A | Force [TT] (MPU1)lo_drc_tc2reducedlampr2 = 1.0 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10083 | R | Check that the Reduced Power Pushbutton lamp is ON | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10084 | A | Release [TT] (MPU1)lo_drc_tc2reducedlampr2 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10085 | R | Check that the Reduced Power Pushbutton lamp is OFF | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10086 | I | Master Controller Traction / No Brake | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10087 | I | The Master Controller should be in "OFF" position | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10088 | R | Read Min/Max [TT] (MPU1)ai_drc_tc2mcpositionch1 : 5479<= x <= 6369 | | OK | 6016 | Tshembhani Khosa - 446920 | TC2 |
| 10089 | R | Read Min/Max [TT] (MPU1)ai_drc_tc2mcpositionch2 : 5479<= x <= 6369 | | OK | 5952 | Tshembhani Khosa - 446920 | TC2 |
| 10090 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2mcnoastr1 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10091 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2mcnoastr2 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10092 | I | No Brake Train lines Dev2/32 = coupler pin 039 Dev2/8 = coupler pin 139 Dev5/82 = 90XP15 pin 32 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10093 | R | Read Defined Variable [NI] Dev2/32 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10094 | R | Read Defined Variable [NI] Dev2/8 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |



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| 10095 | R | Read Defined Variable [NI] Dev5/82 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10096 | R | Read Defined Variable [TT] (MPU1)BCU2_BcuTINoBr = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10097 | I | Ensure that the blue mushroom is released | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10098 | A | Turn Emergency Braking Loop Override Switch 44S2 to BYPASS | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10099 | I | Emergency Brake Train Line Dev 4/61 = 90XP15 pin 67 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10100 | A | Force [NI] Dev4/61 = 1.0 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10101 | R | Read Defined Variable [NI] Dev2/84 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10102 | R | Read Defined Variable [NI] Dev2/85 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10103 | A | Turn the Traction Interlock Override Switch 31S1 to "Override" position | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10104 | R | Check that the indicator lamp 31H1 is ON | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10105 | I | Emergency Brake Train Loop Dev 4/61 = 90XP15 pin 67 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10106 | A | Force [NI] Dev4/61 = 0.0 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10107 | R | Read Defined Variable [NI] Dev2/84 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10108 | R | Read Defined Variable [NI] Dev2/85 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10109 | A | Turn the Emergency Braking Loop Override Switch 44S2 to NORMAL | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10110 | A | Check that the indicator lamp 31H1 is OFF | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10111 | A | Place the Master Controller in "100% Traction" position | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10112 | R | Read Min/Max [TT] (MPU1)ai_drc_tc2mcpositionch1 : 29183<= x <= 31102 | | OK | 30944 | Tshembhani Khosa - 446920 | TC2 |
| 10113 | R | Read Min/Max [TT] (MPU1)ai_drc_tc2mcpositionch2 : 29183<= x <= 31102 | | OK | 30832 | Tshembhani Khosa - 446920 | TC2 |
| 10114 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2mctractior1 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |



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| 10115 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2mctractonr2 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10116 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2mcnoastr1 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10117 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2mcnoastr2 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10118 | I | No Brake Train line Dev2/32 = coupler pin 039 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10119 | R | Read Defined Variable [NI] Dev2/32 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10120 | R | Read Defined Variable [TT] (MPU1)BCU2_BcuTINoBr = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10121 | R | Read Defined Variable [TT] (MPU1)BCU2_BcuTITract = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10122 | I | Traction Train lines Dev2/30 = coupler pin 026 Dev2/31 = coupler pin 126 Dev5/41 = END2 90XP15 pin 31 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10123 | R | Read Defined Variable [NI] Dev2/30 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10124 | R | Read Defined Variable [NI] Dev2/31 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10125 | R | Read Defined Variable [NI] Dev5/81 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10126 | A | Place the Master Controller in "100% Service Brake" position | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10127 | R | Read Min/Max [TT] (MPU1)ai_drc_tc2mcpositionch1 : 29183<= x <= 31102 | | OK | 30944 | Tshembhani Khosa - 446920 | TC2 |
| 10128 | R | Read Min/Max [TT] (MPU1)ai_drc_tc2mcpositionch2 : 29183<= x <= 31102 | | OK | 30832 | Tshembhani Khosa - 446920 | TC2 |
| 10129 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2mcbraker1 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10130 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2mcbraker2 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10131 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2mctractonr1 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10132 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2mctractonr2 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |

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| 10133 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2mcnoastr1 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10134 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2mcemergencybraker1 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10135 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2mcemergencybraker2 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10136 | I | No Brake Train lines Dev2/32 = coupler pin 039 Dev2/8 = coupler pin 139 Dev5/82 = 90XP15 pin 32 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10137 | R | Read Defined Variable [NI] Dev2/32 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10138 | R | Read Defined Variable [NI] Dev2/8 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10139 | R | Read Defined Variable [NI] Dev5/82 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10140 | I | Traction Train lines Dev2/30 = coupler pin 026 Dev2/31 = coupler pin 126 Dev5/81 = END2 90XP15 pin 31 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10141 | R | Read Defined Variable [NI] Dev2/30 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10142 | R | Read Defined Variable [NI] Dev2/31 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10143 | R | Read Defined Variable [NI] Dev5/81 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10144 | R | Read Defined Variable [TT] (MPU1)BCU2_BcuTINoBr = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10145 | R | Read Defined Variable [TT] (MPU1)BCU2_BcuTITract = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10146 | A | Place the Master Controller in "Emergency Brake" position | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10147 | R | Read Min/Max [TT] (MPU1)ai_drc_tc2mcpositionch1 : 29183<= x <= 31102 | | OK | 30960 | Tshembhani Khosa - 446920 | TC2 |
| 10148 | R | Read Min/Max [TT] (MPU1)ai_drc_tc2mcpositionch2 : 29183<= x <= 31102 | | OK | 30832 | Tshembhani Khosa - 446920 | TC2 |
| 10149 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2mcbraker1 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10150 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2mcbraker2 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |

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| 10151 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2mcnoastr1 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10152 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2mcemergencybraker1 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10153 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2mcemergencybraker2 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10154 | A | Place the Master Controller in "OFF" position | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10155 | R | Read Min/Max [TT] (MPU1)ai_drc_tc2mcpositionch1 : 5479<= x <= 6369 | | OK | 6032 | Tshembhani Khosa - 446920 | TC2 |
| 10156 | R | Read Min/Max [TT] (MPU1)ai_drc_tc2mcpositionch2 : 5479<= x <= 6369 | | OK | 5968 | Tshembhani Khosa - 446920 | TC2 |
| 10157 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2mcnoastr1 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10158 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2mcbraker1 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10159 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2mcbraker2 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10160 | I | Traction Interlock | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10161 | I | Traction Interlock Override | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10162 | I | Traction Interlock Train lines Dev2/34 = coupler pin 006 Dev2/35 = coupler pin 106 Dev5/83 = END2 90XP15 pin 41 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10163 | R | Read Defined Variable [NI] Dev2/34 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10164 | R | Read Defined Variable [NI] Dev2/35 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10165 | R | Read Defined Variable [NI] Dev5/83 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10166 | I | Traction Interlock Bypass Train Line Dev5/4 = END2 90XP14 pin 6 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10167 | R | Read Defined Variable [NI] Dev5/4 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10168 | R | Read Defined Variable [TT] (BCU2)LI_NOT_INHIB = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |

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| 10169 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2tractintoverrider1 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10170 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2tractintoverrider2 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10171 | R | Check that the Indicator Lamp 31H2 is ON |  | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10172 | A | Turn the Traction Interlock Override Switch 31S1 to "Normal" position | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10173 | I | Traction Interlock Train lines Dev2/34 = coupler pin 006 Dev2/35 = coupler pin 106 Dev5/83 = END2 90XP15 pin 41 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10174 | R | Read Defined Variable [NI] Dev2/34 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10175 | R | Read Defined Variable [NI] Dev2/35 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10176 | R | Read Defined Variable [NI] Dev5/83 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10177 | I | Traction Interlock Bypass Train Line Dev5/4 = END2 90XP14 pin 6 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10178 | R | Read Defined Variable [NI] Dev5/4 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10179 | R | Read Defined Variable [TT] (BCU2)LI_NOT_INHIB = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10180 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2tractintoverrider1 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10181 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2tractintoverrider2 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10182 | R | Check that the Indicator Lamp 31H2 is OFF |  | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10183 | I | Traction Interlock Relay | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10184 | A | Open Circuit Breaker "30Q1" | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10185 | A | Open Circuit Breaker "30Q2" | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10186 | I | Set the Running Direction Switch 30A1.S2 to "Forward" position | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10187 | I | Safety Doors Loop Train Line Dev4/89 = END2 90XP15 pin 96 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10188 | A | Force [NI] Dev4/89 = 1.0 | | OK | | Tshembhani Khosa - 446920 | TC2 |

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|-------|---|--|---|----|---|------------------------------|-----|
| 10189 | A | Force [TT] (MPU1)lo_drc_tc2tractionloopr1 = 1.0 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10190 | I | Emergency Brake Loop Train Line Dev4/5 = END2 90XP14 pin 9 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10191 | A | Force [NI] Dev4/5 = 1.0 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10192 | A | Force [TT] (MPU1)lo_ubk_tc2emergbraker1 = 1.0 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10193 | A | Turn the Dead Man Override Switch 60S1 to "Override" position | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10194 | A | Turn the ERTMS Isolation switch 62S1 to "Isolation" position | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10195 | I | Traction Interlock Train lines Dev5/83 = END2 90XP15 pin 41 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10196 | R | Read Defined Variable [NI] Dev5/83 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10197 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc2emergrelay1 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10198 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2tractionauthorr1 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10199 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2tractionauthorr2 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10200 | R | Check that the Indicator Lamp 31H1 is ON |  | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10201 | A | Press and Activate the Mushroom switch 44S1 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10202 | R | Check that the Indicator Lamp 31H1 is OFF | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10203 | A | Release the Mushroom switch 44S1 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10204 | R | Check that the Indicator Lamp 31H1 is ON |  | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10205 | A | Place the Master Controller in "100% Traction" position | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10206 | I | Traction Train lines Dev5/81 = END2 90XP15 pin 31 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10207 | R | Read Defined Variable [NI] Dev5/81 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10208 | A | Place the Master Controller in "Neutral" position | | OK | | Tshembhani Khosa - 446920 | TC2 |

| | | | | | | | |
|-------|---|--|---|----|---|---------------------------|-----|
| 10209 | A | Close Circuit Breaker "30Q1" | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10210 | A | Close Circuit Breaker "30Q2" | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10211 | I | Set the Running Direction Switch 30A1.S2 to "Neutral" position | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10212 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2tractionauthorr1 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10213 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2tractionauthorr2 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10214 | I | Traction Interlock Train lines Dev5/83 = END2 90XP15 pin 41 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10215 | R | Read Defined Variable [NI] Dev5/83 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10216 | R | Check Indicator Lamp 31H1 is OFF |  | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10217 | A | Release [TT] (MPU1)lo_drc_tc2tractionloopr1 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10218 | A | Force [TT] (MPU1)lo_drc_tc2tractionloopr2 = 1.0 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10219 | I | Set the Running Direction Switch 30A1.S2 to "Reverse" position | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10220 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2tractionauthorr1 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |
| 10221 | R | Check Indicator Lamp 31H1 is ON |  | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10222 | I | Traction Authorization at V>5km/h | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10223 | I | Safety Doors Loop Train Line Dev4/89 = END2 90XP15 pin 96 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10224 | A | Force [NI] Dev4/89 = 0.0 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10225 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2tractionauthorr1 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10226 | I | V>5km/h Train Line Dev4/38 = END2 90XP15 pin 28 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10227 | A | Force [NI] Dev4/38 = 1.0 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10228 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2tractionauthorr1 = 0.0 | | OK | 0 | Tshembhani Khosa - 446920 | TC2 |

| | | | | | | | |
|-------|---|--|--|----|---|------------------------------|-----|
| 10229 | I | PEA Loop Train Line Dev4/62 = END2 90XP15 pin 95 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10230 | A | Force [NI] Dev4/62 = 1.0 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10231 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2tractionauthorr1 = 1.0 | | OK | 1 | Tshembhani Khosa - 446920 | TC2 |
| 10232 | I | PEA Loop Train Line Dev4/62 = END2 90XP15 pin 95 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10233 | A | Force [NI] Dev4/62 = 0.0 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10234 | I | V>5km/h Train Line Dev4/38 = END2 90XP15 pin 28 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10235 | A | Force [NI] Dev4/38 = 0.0 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10236 | I | Emergency Brake Loop Train Line Dev4/5 = END2 90XP14 pin 9 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10237 | A | Force [NI] Dev4/5 = 0.0 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10238 | A | Release [TT] (MPU1)lo_ubk_tc2emergbraker1 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10239 | A | Release [TT] (MPU1)lo_drc_tc2tractionloopr2 | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10240 | I | Set the Running Direction Switch 30A1.S2 to "Normal" position | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10241 | A | Turn the Dead Man Override Switch 60S1 to "Normal" position | | OK | | Tshembhani Khosa - 446920 | TC2 |
| 10242 | A | Turn the ERTMS Isolation switch 62S1 to "Normal" position | | OK | | Tshembhani Khosa - 446920 | TC2 |



Serial Tests Report
TS228 – TC2 – VFT
RTR Vehicle Functional Static Testing Report

Document Reference
GIB0000006567
Version: A0

Emission date
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Section 18 – Train-Ground Communication




18.3 Instructions list

18.3.1 062_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 | | Sizwe Sibanyoni - 484647 | TC2 |
| 10002 | A | Ensure Circuit Breaker 62Q1 is OPEN | | OK | | Sizwe Sibanyoni - 484647 | TC2 |
| 10003 | I | DMI Power Supply | | OK | | Sizwe Sibanyoni - 484647 | TC2 |
| 10004 | A | Use the following procedure to perform Electrical check on the DMI power supply |  | OK | | Sizwe Sibanyoni - 484647 | TC2 |
| 10005 | A | Close Circuit Breaker 62Q1 | | OK | | Sizwe Sibanyoni - 484647 | TC2 |
| 10006 | R | The ERTMS Display Unit (MMI) is powered ON | | OK | | Sizwe Sibanyoni - 484647 | TC2 |
| 10007 | A | Place the ERTMS Isolation Switch 62S1 is in Isolation position | | OK | | Sizwe Sibanyoni - 484647 | TC2 |
| 10008 | R | The ERTMS Display Unit (MMI) is powered OFF | | OK | | Sizwe Sibanyoni - 484647 | TC2 |
| 10009 | I | DMI Software Upload | | OK | | Sizwe Sibanyoni - 484647 | TC2 |
| 10010 | A | Use the following procedure to upload the DMI software |  | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10011 | I | Emergency Brake By ERTMS | | OK | | Sizwe Sibanyoni - 484647 | TC2 |
| 10012 | I | Emergency Brake ERTMS Train lines Dev4/88 =END2 Emergency Brake ERTMS 1 | | OK | | Sizwe Sibanyoni - 484647 | TC2 |
| 10013 | A | Force [NI] Dev4/88 = 1.0 | | OK | | Sizwe Sibanyoni - 484647 | TC2 |
| 10014 | R | Read Defined Variable [TT] (MPU1)li_ets_tc2ertmsebk1r1 = 0.0 | | OK | 0 | Sizwe Sibanyoni - 484647 | TC2 |
| 10015 | R | Read Defined Variable [TT] (MPU1)li_ets_tc2ertmsebk1r2 = 0.0 | | OK | 0 | Sizwe Sibanyoni - 484647 | TC2 |
| 10016 | R | Read Defined Variable [TT] (MPU1)li_ets_tc2ertmsebk2r1 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC2 |
| 10017 | R | Read Defined Variable [TT] (MPU1)li_ets_tc2ertmsebk2r2 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC2 |

| | | | | | | | |
|-------|---|--|--|----|---|-----------------------------|-----|
| 10018 | I | Emergency Brake ERTMS Train lines Dev4/80 = END2 Emergency Brake ERTMS 2 | | OK | | Sizwe Sibanyoni - 484647 | TC2 |
| 10019 | A | Force [NI] Dev4/80 = 1.0 | | OK | | Sizwe Sibanyoni - 484647 | TC2 |
| 10020 | R | Read Defined Variable [TT] (MPU1)li_ets_tc2ertmsebk1r1 = 0.0 | | OK | 0 | Sizwe Sibanyoni - 484647 | TC2 |
| 10021 | R | Read Defined Variable [TT] (MPU1)li_ets_tc2ertmsebk1r2 = 0.0 | | OK | 0 | Sizwe Sibanyoni - 484647 | TC2 |
| 10022 | R | Read Defined Variable [TT] (MPU1)li_ets_tc2ertmsebk2r1 = 0.0 | | OK | 0 | Sizwe Sibanyoni - 484647 | TC2 |
| 10023 | R | Read Defined Variable [TT] (MPU1)li_ets_tc2ertmsebk2r2 = 0.0 | | OK | 0 | Sizwe Sibanyoni - 484647 | TC2 |
| 10024 | A | Force [NI] Dev4/88 = 0.0 | | OK | | Sizwe Sibanyoni - 484647 | TC2 |
| 10025 | R | Read Defined Variable [TT] (MPU1)li_ets_tc2ertmsebk1r1 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC2 |
| 10026 | R | Read Defined Variable [TT] (MPU1)li_ets_tc2ertmsebk1r2 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC2 |
| 10027 | R | Read Defined Variable [TT] (MPU1)li_ets_tc2ertmsebk2r1 = 0.0 | | OK | 0 | Sizwe Sibanyoni - 484647 | TC2 |
| 10028 | R | Read Defined Variable [TT] (MPU1)li_ets_tc2ertmsebk2r2 = 0.0 | | OK | 0 | Sizwe Sibanyoni - 484647 | TC2 |
| 10029 | A | Force [NI] Dev4/80 = 0.0 | | OK | | Sizwe Sibanyoni - 484647 | TC2 |
| 10030 | R | Read Defined Variable [TT] (MPU1)li_ets_tc2ertmsebk1r1 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC2 |
| 10031 | R | Read Defined Variable [TT] (MPU1)li_ets_tc2ertmsebk1r2 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC2 |
| 10032 | R | Read Defined Variable [TT] (MPU1)li_ets_tc2ertmsebk2r1 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC2 |
| 10033 | R | Read Defined Variable [TT] (MPU1)li_ets_tc2ertmsebk2r2 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC2 |
| 10034 | I | ERTMS Bypass/Reset | | OK | | Sizwe Sibanyoni - 484647 | TC2 |
| 10035 | I | ERTMS Bypass Train Lines Dev2/5 = coupler pin 036 Dev2/6 = coupler pin 136 Dev5/8 = END2 train line | | OK | | Sizwe Sibanyoni - 484647 | TC2 |
| 10036 | R | Read Defined Variable [NI] Dev2/5 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC2 |

| | | | | | | | |
|-------|---|--|---|----|---|--------------------------|-----|
| 10037 | R | Read Defined Variable [NI] Dev2/6 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC2 |
| 10038 | R | Read Defined Variable [NI] Dev5/8 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC2 |
| 10039 | A | Turn cab key 30A1.S1 to non-active cab position | | OK | | Sizwe Sibanyoni - 484647 | TC2 |
| 10040 | R | Read Defined Variable [NI] Dev2/5 = 0.0 | | OK | 0 | Sizwe Sibanyoni - 484647 | TC2 |
| 10041 | R | Read Defined Variable [NI] Dev2/6 = 0.0 | | OK | 0 | Sizwe Sibanyoni - 484647 | TC2 |
| 10042 | R | Read Defined Variable [NI] Dev5/8 = 0.0 | | OK | 0 | Sizwe Sibanyoni - 484647 | TC2 |
| 10043 | A | Turn cab key 30A1.S1 to active cab position | | OK | | Sizwe Sibanyoni - 484647 | TC2 |
| 10044 | A | Place the ERTMS Isolation Switch 62S1 in Normal position | | OK | | Sizwe Sibanyoni - 484647 | TC2 |
| 10045 | R | Read Defined Variable [NI] Dev2/5 = 0.0 | | OK | 0 | Sizwe Sibanyoni - 484647 | TC2 |
| 10046 | R | Read Defined Variable [NI] Dev5/8 = 0.0 | | OK | 0 | Sizwe Sibanyoni - 484647 | TC2 |
| 10047 | R | Read Defined Variable [TT] (MPU1)li_ets_tc2ertmsbypassr1 = 0.0 | | OK | 0 | Sizwe Sibanyoni - 484647 | TC2 |
| 10048 | R | Read Defined Variable [TT] (MPU1)li_ets_tc2ertmsbypassr2 = 0.0 | | OK | 0 | Sizwe Sibanyoni - 484647 | TC2 |
| 10049 | R | The indicator Lamp 62H1 is OFF |  | OK | | Sizwe Sibanyoni - 484647 | TC2 |
| 10050 | A | Place the ERTMS Isolation Switch 62S1 in Isolation position | | OK | | Sizwe Sibanyoni - 484647 | TC2 |
| 10051 | R | Read Defined Variable [NI] Dev2/5 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC2 |
| 10052 | R | Read Defined Variable [NI] Dev5/8 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC2 |
| 10053 | R | Read Defined Variable [TT] (MPU1)li_ets_tc2ertmsbypassr1 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC2 |
| 10054 | R | Read Defined Variable [TT] (MPU1)li_ets_tc2ertmsbypassr2 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC2 |
| 10055 | R | The indicator Lamp 62H1 is ON |  | OK | | Sizwe Sibanyoni - 484647 | TC2 |
| 10056 | A | Place the ERTMS Isolation Switch 62S1 in Normal position | | OK | | Sizwe Sibanyoni - 484647 | TC2 |
| 10057 | I | Eurobalise Antenna Cable | | OK | | Sizwe Sibanyoni - 484647 | TC2 |
| 10058 | A | Check continuity between [Inter-car (LOCAL: +END2; Connector -90XR10) and Eurobalise Antenna (LOCAL: +UCA; |  | OK | | Sizwe Sibanyoni - 484647 | TC2 |

| | | | | | | | |
|-------|---|--|--|----|--|--------------------------|-----|
| | | connector -62XP3_X1] according to the image | | | | | |
| 10059 | R | Eurobalise Antenna cable is correctly configured | | OK | | Sizwe Sibanyoni - 484647 | TC2 |

18.3.2 063_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 | | Sqiniseko Xulu - 493646 | TC2 |
| 10002 | A | Turn Driver Key 30A1.S1 to Active Cab position | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10003 | I | UHF Radio | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 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 | | Sqiniseko Xulu - 493646 | TC2 |
| 10005 | I | Tester Calibration | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10006 | I | PERFORM THIS CALIBRATION BEFORE TESTING EACH CABLE | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10007 | A | Select "preset", then Set the test frequency by selecting "FREQ/DIST" then setting the start and stop frequency, select "calibrate", then "Full 1-port" then Calibrate the Antenna cable tester using the 0.5m extension cable and the T-calibration unit. | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10008 | I | Relay 63D1 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10009 | A | Check for continuity between pins B3, B4 and C3 of relay 63D1 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10010 | R | All points are continuous with each other | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10011 | I | Power Supply | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10012 | A | Close Circuit Breaker 63Q2 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10013 | R | Check that the UHF Radio is ON | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10014 | A | Open Circuit Breaker 63Q2 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10015 | R | Check that the UHF Radio is OFF | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10016 | A | Turn the UHF Radio Emergency Supply switch 63S1 to the "Emergency" position, | | OK | | Sqiniseko Xulu - 493646 | TC2 |

| | | | | | | | |
|-------|---|--|--|----|--|-------------------------|-----|
| | | and release it | | | | | |
| 10017 | R | Check that the UHF Radio is ON | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10018 | 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 | | Sqiniseko Xulu - 493646 | TC2 |
| 10019 | R | After 10 minutes the UHF Radio turns OFF | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10020 | I | GSMR Radio | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10021 | I | Relay 65D1 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10022 | A | Check for continuity between pins B3, B4 and C3 of relay 65D1 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10023 | R | All points are continuous with each other | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10024 | I | Power Supply GSM_RADIO | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10025 | A | Close Circuit Breaker 65Q2 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10026 | R | Check that the GSM Radio is ON | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10027 | A | Open Circuit Breaker 65Q2 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10028 | R | Check that the GSM Radio is OFF | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10029 | A | Close Circuit Breaker 65Q1 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10030 | A | Turn the GSM Radio Emergency Supply switch 65S1 to the "Emergency" position, and release it | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10031 | R | Check that the GSM Radio is ON | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 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 | | Sqiniseko Xulu - 493646 | TC2 |
| 10033 | R | After 10 minutes the GSM Radio turns OFF | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10034 | I | HMI Power On | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10035 | I | Proceed with the following steps after the Radio has turned OFF | | OK | | Sqiniseko Xulu - 493646 | TC2 |

| | | | | | | | |
|-------|---|---|--|----|--|-------------------------|-----|
| 10036 | A | Close Circuit Breaker 65Q2 - allow time for the Radio to turn ON | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10037 | A | Turn Driver Key 30A1.S1 to Non-Active Cab position | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10038 | A | Reset (Off then On) Circuit Breaker 20Q2 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10039 | R | The GSMR HMI Screen turns OFF | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10040 | A | Turn the GSM Radio Emergency Supply switch 65S1 to the "Emergency" position, and release it | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10041 | R | The GSMR HMI Screen turns ON | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10042 | A | Open Circuit Breaker 65Q1 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10043 | R | The GSMR HMI Screen turns OFF | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10044 | A | Turn Driver Key 30A1.S1 to Active Cab position | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10045 | R | The GSMR turns ON | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10046 | A | Close Circuit Breaker 65Q1 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10047 | I | Handset and Loudspeaker Volume | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10048 | A | Pick up the GSM-R handset. On the GSM-R, press the "11" key | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10049 | R | On the GSM-R MMI, volume symbol flashes above the "11" key. | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10050 | A | Adjust the volume using the arrow upward (louder) or arrow downward (quieter) | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10051 | R | The sound change is audible (in the handset and visible on MMI) immediately | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10052 | A | On the GSM-R, press the "11" key. | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10053 | R | On the GSM-R MMI, volume symbol is no longer flashing above the "11" key. | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10054 | A | Hang up the GSM-R handset. On GSM-R M, Press the "11" key. | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10055 | R | On the GSM-R MMI, volume symbol flashes above the "11" key. | | OK | | Sqiniseko Xulu - 493646 | TC2 |

| | | | | | | | |
|-------|---|--|--|----|--|-------------------------|-----|
| 10056 | A | Adjust the volume using the arrow upward (louder) or arrow downward (quieter) | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10057 | R | The sound change is audible (in the loudspeaker located in the ceiling and visible on MMI) immediately | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10058 | A | On the GSM-R, press the "11" key. | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10059 | R | On the GSM-R M, volume symbol is no longer flashing above the "11" key. | | OK | | Sqiniseko Xulu - 493646 | TC2 |



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TS228 – TC2 – VFT
RTR Vehicle Functional Static Testing Report

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Emission date
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Section 19 – Vehicle Normalization

19.3 Instructions list

19.3.1 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 | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10002 | I | This inspection must be performed by the EPU/Acting EPU Manager on shift | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10003 | I | The VFT procedures are all completed | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10004 | I | Vehicle Normalization Check | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10005 | R | On LV1 all Circuit Breakers are installed and secured | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10006 | R | On LV1 all Switches and Buttons are installed properly | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10007 | R | On LV1 all Relays and Timers are installed and secured | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10008 | R | On LV1 all Dataplugs are installed, tightened and earth braids are fastened | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10009 | R | On LV1 BRIOMs are properly installed | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10010 | R | On LV1 all UMC Rack cards are installed properly | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10011 | R | On LV1 all Connectors are tightened | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10012 | R | On LV1 there are no missing components, device, wiring or connectors. | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10013 | R | On LV2 the MCE is installed and properly tightened | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10014 | R | On LV2 the GSMR-Radio is installed and properly tightened and its connectors are tightened | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10015 | R | On LV2 the UHF-Radio is installed and properly tightened and its connectors are tightened | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10016 | R | On LV2 OTDR is installed and properly tightened, and its connectors are tightened. | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |

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| 10017 | A | On LV2 CPM is installed and properly tightened, and its connectors are tightened. | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10018 | R | On LV2 all Circuit Breakers are installed and secured | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10019 | R | On LV2 all Connectors are tightened | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10020 | R | On LV2 there are no missing components, device, wiring or connectors. | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10021 | A | On the Driver's Desk, all Switches and Buttons are installed properly. Refer to the image |  | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10022 | R | On the Driver's Desk, DDU is installed and properly tightened | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10023 | R | On the Driver's Desk, ERTMS HMI is installed and properly tightened | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10024 | R | On the Driver's Desk, GSMR HMI and Handset are installed and properly tightened | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10025 | R | On the Driver's Desk, Speedometer is installed and properly tightened | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10026 | R | On the Driver's Desk, Pressure Gauge is installed and properly tightened | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10027 | R | On the Driver's Desk, Alarm Module is installed and properly tightened | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10028 | R | On the Driver's Desk, Voltage/Traction Indicator is installed and properly tightened | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10029 | R | On the Driver's Desk, Master Controller is installed and properly tightened | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10030 | R | On the UDM, all connectors are tightened | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10031 | R | On the UDR, Wiper Controller is properly installed | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10032 | R | On the UDL, BRIOMs are properly installed | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10033 | R | CPM is properly installed and secured | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10034 | R | Driver Foot Heater is properly installed | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |

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| 10035 | R | On the Cab Ceiling, Lights are all properly installed | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10036 | R | On the Cab Ceiling, Speakers are all properly installed | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10037 | R | On the Cab Ceiling, Fire Detector is properly installed and secured | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10038 | R | On the Cab Ceiling, Frontal Camera is properly installed | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10039 | R | All DCUs are properly installed and secured | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10040 | R | All Internal Displays are properly installed and secured | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10041 | R | All Light Covers are properly installed | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10042 | R | All Saloon Cameras are properly installed | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10043 | R | All PEAs and PEIs are properly installed | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10044 | R | On LV7 all Dataplugs are installed, tightened and earth braids are fastened | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10045 | R | On HC Cubicle the Controller is installed and properly tightened and its connectors are tightened | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10046 | R | On the LVB, all Relays and Timers are installed and properly tightened | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10047 | R | On the LVB, all Circuit Breakers are installed and properly tightened | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10048 | R | On the Underframe, CVS Agate is installed and properly tightened | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10049 | R | On the Underframe, Speed Sensors are installed and properly tightened | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10050 | R | On the Underframe, Battery Box cables are properly connected | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10051 | R | ALL underframe covers are normalised | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10052 | R | On END1 the Octopus cables are disconnected from the coupler and properly stored. | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10053 | R | On END2 the Octopus cables are disconnected from the car and properly | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |

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| | | stored. | | | | | |
| 10054 | R | The Test Bench is switched OFF and Octopus is disconnected and properly stored | | OK | | Paseka Ditlhakanyane - 491468 | TC2 |
| 10055 | R | ALL P.Os of this car are closed | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10056 | I | End Of Test | | OK | | Thandanani Makhanya - 463827 | TC2 |



Serial Tests Report
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RTR Vehicle Functional Static Testing Report

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Section 20 – Report summaries

20.2 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 Signaling | X | | |
| Energy Distribution | X | | |
| Emergency Brake | X | | |
| Driving Command | X | | |
| Driver Desk Illumination | X | | |
| Dead Man | X | | |
| Cabin Control | X | | |

20.3 Tools used

| Function | Tool name | Tool number | Next Calibration date |
|----------|------------|--------------|-----------------------|
| 015_NRG | Phasemeter | Phasemeter | 8/25/2024 |
| 040_SBK | Manometer | Manometer | 7/31/2024 |
| 045_PBK | Manometer | Manometer | 7/31/2024 |
| 057_HVA | Anemometer | Anemometer 1 | 8/25/2024 |



| | | | |
|-------------|----------------|----------------|-----------|
| 063_065_COM | GSM-R - tester | Radio Analyser | 8/23/2024 |
| 067_FSD | Multimeter | Multimeter 2 | 8/23/2024 |
| 070_SIG_2 | Manometer | Manometer | 7/31/2024 |

| Vehicle | Equipment | Expected version | Version loaded |
|---------|-----------|------------------|----------------|
| TC2 | | | |