

| PROJECT         | CUSTOMER | TRAIN     |
|-----------------|----------|-----------|
| Xtrapolis-PRASA | PRASA    | 251 – TFD |

RTR Train Functional Dynamic Testing TS251 Report  
GIB0000007324



|           | CREATED             | VERIFIED       | APPROVED        | DISTRIBUTION                                                                                                                                                        |
|-----------|---------------------|----------------|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Name      | Kealeboga MOCWAGOLE | Sifiso LUKHELE | Kgomotso NKOANA | Confidentiality Category<br><i>Restricted</i> <i>Project</i> <i>Normal</i><br><input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> |
| Date      | 18/10/2024          | 18/10/2024     | 18/10/2024      | Control Category<br><i>Controlled</i> <i>Not Controlled</i><br><input checked="" type="checkbox"/> <input type="checkbox"/>                                         |
| Signature |                     |                |                 | Language<br><b>EN</b>                                                                                                                                               |

This report has been automatically generated from TES version 1

## Table of modifications

| Rev | Date       | Modifications Content | Writer              |
|-----|------------|-----------------------|---------------------|
| A0  | 18/10/2024 | Creation              | Kealeboga MOCWAGOLE |

## Internal validations

|                 | Name                | Function            | Date       | Signature                                                                                                                       |
|-----------------|---------------------|---------------------|------------|---------------------------------------------------------------------------------------------------------------------------------|
| <b>Creator</b>  | Kealeboga MOCWAGOLE | EPU Manager         | 18/10/2024 | X <br>Kealeboga MOCWAGOLE<br>EPU Manager     |
| <b>Verifier</b> | Sifiso LUKHELE      | Serial Test Manager | 18/10/2024 | X <br>Sifiso LUKHELE<br>Serial Test Manager |
| <b>Approver</b> | Kgomotso NKOANA     | Test Expert         | 18/10/2024 | X <br>Kgomotso NKOANA<br>Test Expert       |

## Execution Plan

|                   |            |
|-------------------|------------|
| <b>Start Date</b> | 15/10/2024 |
| <b>End Date</b>   | 15/10/2024 |

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| Serial Tests Report<br>TS251 – TFD<br>RTR Train Functional Static Test Report | Document Reference<br>GIB0000007324<br>Version: A0 | Emission date<br>18/10/2024 |
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**Section 1 – Purpose / Objectives**

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|                                                                               |                                                    |                             |
|-------------------------------------------------------------------------------|----------------------------------------------------|-----------------------------|
| Serial Tests Report<br>TS251 – TFD<br>RTR Train Functional Static Test Report | Document Reference<br>GIB0000007324<br>Version: A0 | Emission date<br>18/10/2024 |
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## Section 2 – Dynamic

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### 2.2 Instructions list

## 2.2.1 TFD-Dynamic

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

| N°    | Type | Instruction                                                                                                                                                                                                                                              | File                                                                                | Result status | Result value | Operator              | Vehicle |
|-------|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------|--------------|-----------------------|---------|
| 10001 | I    | Dynamic Test                                                                                                                                                                                                                                             |                                                                                     | OK            |              | Amanda Ntuli - 526239 | Train   |
| 10002 | I    | Initial conditions                                                                                                                                                                                                                                       |                                                                                     | OK            |              | Amanda Ntuli - 526239 | Train   |
| 10003 | I    | This test shall be done under dry weather conditions i.e. no rain                                                                                                                                                                                        |                                                                                     | OK            |              | Amanda Ntuli - 526239 | Train   |
| 10004 | I    | This test shall be carried out on a straight rail( $R \geq 700m$ ). The track must be well bedded with a maximum gradient $\leq 5\%$ of 3 km length. The track must be dry and clean before commencing the test to prevent degraded adhesion conditions. |                                                                                     | OK            |              | Amanda Ntuli - 526239 | Train   |
| 10005 | I    | The catenary nominal voltage should be 3.3 +/- 0.3 kV DC.                                                                                                                                                                                                |                                                                                     | OK            |              | Amanda Ntuli - 526239 | Train   |
| 10006 | I    | The test must be done with a complete 6-car configuration Prasa X'Trapolis Train.                                                                                                                                                                        |                                                                                     | OK            |              | Amanda Ntuli - 526239 | Train   |
| 10007 | I    | All routine static tests must be completed before commencing with this test, unless authorization has been given by Management                                                                                                                           |                                                                                     | OK            |              | Amanda Ntuli - 526239 | Train   |
| 10008 | I    | Dynamic Pre-Test has been completed                                                                                                                                                                                                                      |                                                                                     | OK            |              | Amanda Ntuli - 526239 | Train   |
| 10009 | I    | The test shall be performed in M1 load configuration                                                                                                                                                                                                     |                                                                                     | OK            |              | Amanda Ntuli - 526239 | Train   |
| 10010 | I    | Have a laptop ready with Train Tracer installed and loaded with the dashboard attached.                                                                                                                                                                  |  | OK            |              | Amanda Ntuli - 526239 | Train   |
| 10011 | I    | Refer to this image for all lamp in alarm module                                                                                                                                                                                                         |  | OK            |              | Amanda Ntuli - 526239 | Train   |
| 10012 | I    | Initial Conditions                                                                                                                                                                                                                                       |                                                                                     | OK            |              | Amanda Ntuli - 526239 | Train   |
| 10013 | I    | Deadman switch 60S1 is in NORMAL position on both TC cars                                                                                                                                                                                                |                                                                                     | OK            |              | Amanda Ntuli - 526239 | Train   |
| 10014 | I    | The Traction Isolation switch 22S1 should be in NORMAL position on both TC cars                                                                                                                                                                          |                                                                                     | OK            |              | Amanda Ntuli - 526239 | Train   |

|       |   |                                                                         |  |    |         |                       |       |
|-------|---|-------------------------------------------------------------------------|--|----|---------|-----------------------|-------|
| 10015 | A | Put the ERTMS switch 62S1 in ISOLATION position in both TC cars         |  | OK |         | Amanda Ntuli - 526239 | Train |
| 10016 | A | Apply the Safety procedure for movements before starting the test below |  | OK |         | Amanda Ntuli - 526239 | Train |
| 10017 | I | All traction units are in black colour on the DDU maintenance screen    |  | OK |         | Amanda Ntuli - 526239 | Train |
| 10018 | A | Prepare the train in high voltage with active cab on TC1                |  | OK |         | Amanda Ntuli - 526239 | Train |
| 10019 | R | Read Min [TT] BKT_LineVoltageGl : 2700<= x                              |  | OK | 3248.82 | Amanda Ntuli - 526239 | Train |
| 10020 | I | Movement preparation                                                    |  | OK |         | Amanda Ntuli - 526239 | Train |
| 10021 | A | Put the switch 45S1 to 0 position to release the parking brake          |  | OK |         | Amanda Ntuli - 526239 | Train |
| 10022 | A | Select Driving Mode to EFFORT position                                  |  | OK |         | Amanda Ntuli - 526239 | Train |
| 10023 | A | Put the direction selector switch in FORWARD position in TC1            |  | OK |         | Amanda Ntuli - 526239 | Train |
| 10024 | R | Lamp 31H1 is "ON" on the alarm module                                   |  | OK |         | Amanda Ntuli - 526239 | Train |
| 10025 | R | TA appears on DDU screen                                                |  | OK |         | Amanda Ntuli - 526239 | Train |
| 10026 | A | Force [TT] (TBCU1)DSP2_WR_inv_B_inv_on = 0.0                            |  | OK |         | Amanda Ntuli - 526239 | Train |
| 10027 | A | Force [TT] (TBCU2)DSP2_WR_inv_B_inv_on = 0.0                            |  | OK |         | Amanda Ntuli - 526239 | Train |
| 10028 | A | Force [TT] (TBCU3)DSP2_WR_inv_B_inv_on = 0.0                            |  | OK |         | Amanda Ntuli - 526239 | Train |
| 10029 | A | Force [TT] (TBCU4)DSP2_WR_inv_B_inv_on = 0.0                            |  | OK |         | Amanda Ntuli - 526239 | Train |
| 10030 | A | Slowly move the Master Controller to TRACTION position                  |  | OK |         | Amanda Ntuli - 526239 | Train |
| 10031 | R | The train does not move                                                 |  | OK |         | Amanda Ntuli - 526239 | Train |
| 10032 | R | Read Defined Variable [TT] (MPU1)BKT_Tbcu1EffAchPerc = 0.0              |  | OK | 0       | Amanda Ntuli - 526239 | Train |

|       |   |                                                                                                               |  |    |   |                       |       |
|-------|---|---------------------------------------------------------------------------------------------------------------|--|----|---|-----------------------|-------|
| 10033 | R | Read Defined Variable [TT]<br>(MPU1)BKT_Tbcu2EffAchPerc = 0.0                                                 |  | OK | 0 | Amanda Ntuli - 526239 | Train |
| 10034 | R | Read Defined Variable [TT]<br>(MPU1)BKT_Tbcu3EffAchPerc = 0.0                                                 |  | OK | 0 | Amanda Ntuli - 526239 | Train |
| 10035 | R | Read Defined Variable [TT]<br>(MPU1)BKT_Tbcu4EffAchPerc = 0.0                                                 |  | OK | 0 | Amanda Ntuli - 526239 | Train |
| 10036 | A | Release [TT]<br>(TBCU1)DSP2_WR_inv_B_inv_on                                                                   |  | OK |   | Amanda Ntuli - 526239 | Train |
| 10037 | A | Release [TT]<br>(TBCU2)DSP2_WR_inv_B_inv_on                                                                   |  | OK |   | Amanda Ntuli - 526239 | Train |
| 10038 | A | Release [TT]<br>(TBCU3)DSP2_WR_inv_B_inv_on                                                                   |  | OK |   | Amanda Ntuli - 526239 | Train |
| 10039 | A | Release [TT]<br>(TBCU4)DSP2_WR_inv_B_inv_on                                                                   |  | OK |   | Amanda Ntuli - 526239 | Train |
| 10040 | A | Put the direction selector switch in<br>NEUTRAL position in TC1                                               |  | OK |   | Amanda Ntuli - 526239 | Train |
| 10041 | R | Read Defined Variable [TT]<br>(MPU1)bcu1_tlnb = 0.0                                                           |  | OK | 0 | Amanda Ntuli - 526239 | Train |
| 10042 | R | Read Defined Variable [TT]<br>(MPU1)li_drc_tc1dsnozeror1 = 0.0                                                |  | OK | 0 | Amanda Ntuli - 526239 | Train |
| 10043 | A | Put the direction selector switch to<br>FORWARD and again in NEUTRAL<br>position to reset the emergency brake |  | OK |   | Amanda Ntuli - 526239 | Train |
| 10044 | I | Traction and Electric Brake - Wheel Turn<br>Test                                                              |  | OK |   | Amanda Ntuli - 526239 | Train |
| 10045 | A | Prepare and run Dynamic dashboard                                                                             |  | OK |   | Amanda Ntuli - 526239 | Train |
| 10046 | A | Record and SAVE the above dashboard for<br>each car                                                           |  | OK |   | Amanda Ntuli - 526239 | Train |
| 10047 | I | Traction and Brake M4 - Wheel Turn Test                                                                       |  | OK |   | Amanda Ntuli - 526239 | Train |
| 10048 | A | Force [TT]<br>(TBCU1)DSP2_WR_inv_B_inv_on =<br>0.0                                                            |  | OK |   | Amanda Ntuli - 526239 | Train |
| 10049 | A | Force [TT]<br>(TBCU2)DSP2_WR_inv_B_inv_on =<br>0.0                                                            |  | OK |   | Amanda Ntuli - 526239 | Train |
| 10050 | A | Force [TT]                                                                                                    |  | OK |   | Amanda Ntuli - 526239 | Train |

|       |   |                                                                                                                                                                               |  |    |       |                       |       |
|-------|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----|-------|-----------------------|-------|
|       |   | (TBCU3)DSP2_WR_inv_B_inv_on = 0.0                                                                                                                                             |  |    |       |                       |       |
| 10051 | R | Read Defined Variable [TT]<br>(MPU1)BKT_Tbcu1TcuDrinC1 = 1.0                                                                                                                  |  | OK | 1     | Amanda Ntuli - 526239 | Train |
| 10052 | R | Read Defined Variable [TT]<br>(MPU1)BKT_Tbcu2TcuDrinC2 = 1.0                                                                                                                  |  | OK | 1     | Amanda Ntuli - 526239 | Train |
| 10053 | R | Read Defined Variable [TT]<br>(MPU1)BKT_Tbcu3TcuDrinC3 = 1.0                                                                                                                  |  | OK | 1     | Amanda Ntuli - 526239 | Train |
| 10054 | R | Read Defined Variable [TT]<br>(MPU1)BKT_Tbcu4TcuDrinC4 = 1.0                                                                                                                  |  | OK | 1     | Amanda Ntuli - 526239 | Train |
| 10055 | A | Put the direction selector switch in FORWARD position                                                                                                                         |  | OK |       | Amanda Ntuli - 526239 | Train |
| 10056 | A | Put the Master controller in 100% TRACTION immediately, accelerate to speed 15 km/h                                                                                           |  | OK |       | Amanda Ntuli - 526239 | Train |
| 10057 | R | The train is moving forward towards TC1 direction                                                                                                                             |  | OK |       | Amanda Ntuli - 526239 | Train |
| 10058 | R | Read Min [TT]<br>(MPU1)BKT_Tbcu4EffAchPerc : 1<= x                                                                                                                            |  | OK | 100   | Amanda Ntuli - 526239 | Train |
| 10059 | R | Read Defined Variable [TT]<br>(MPU1)BKT_Tbcu2EffAchPerc = 0.0                                                                                                                 |  | OK | 0     | Amanda Ntuli - 526239 | Train |
| 10060 | R | Read Defined Variable [TT]<br>(MPU1)BKT_Tbcu3EffAchPerc = 0.0                                                                                                                 |  | OK | 0     | Amanda Ntuli - 526239 | Train |
| 10061 | R | Read Defined Variable [TT]<br>(MPU1)BKT_Tbcu1EffAchPerc = 0.0                                                                                                                 |  | OK | 0     | Amanda Ntuli - 526239 | Train |
| 10062 | I | For FORWARD direction:<br>Speed sensor 1 axle 1 (+)<br>Speed sensor 2 axle 1 (direction) (-)<br>Speed sensor axle 2 (+)<br>Speed sensor axle 3 (+)<br>Speed sensor axle 4 (+) |  | OK |       | Amanda Ntuli - 526239 | Train |
| 10063 | R | Read Min [TT]<br>(TBCU4)dsp2_rd_inv_fq_axle0_4 : 1<= x                                                                                                                        |  | OK | 6.53  | Amanda Ntuli - 526239 | Train |
| 10064 | R | Result Max [TT]<br>(TBCU4)dsp2_rd_inv_fq_axle1_4 : x <= 0                                                                                                                     |  | OK | -6.95 | Amanda Ntuli - 526239 | Train |
| 10065 | R | Read Min [TT]<br>(TBCU4)dsp2_rd_inv_fq_axle2_4 : 1<= x                                                                                                                        |  | OK | 7.38  | Amanda Ntuli - 526239 | Train |

|       |   |                                                                                       |  |    |      |                       |       |
|-------|---|---------------------------------------------------------------------------------------|--|----|------|-----------------------|-------|
| 10066 | R | Read Min [TT]<br>(TBCU4)dsp2_rd_inv_fq_axle3_4 : 1<= x                                |  | OK | 7.82 | Amanda Ntuli - 526239 | Train |
| 10067 | R | Read Min [TT]<br>(TBCU4)dsp2_rd_inv_fq_axle4_4 : 1<= x                                |  | OK | 9.27 | Amanda Ntuli - 526239 | Train |
| 10068 | A | Put the Master controller in BRAKE position until the train comes to a complete stop  |  | OK |      | Amanda Ntuli - 526239 | Train |
| 10069 | A | Put the direction selector switch in REVERSE position                                 |  | OK |      | Amanda Ntuli - 526239 | Train |
| 10070 | A | Put the Master controller in TRACTION position and slowly accelerate to speed <5 km/h |  | OK |      | Amanda Ntuli - 526239 | Train |
| 10071 | R | The train is moving backward towards TC2 direction                                    |  | OK |      | Amanda Ntuli - 526239 | Train |
| 10072 | R | Result Max [TT]<br>(TBCU4)dsp2_rd_inv_fq_axle0_4 : x <= 0                             |  | OK | -2.6 | Amanda Ntuli - 526239 | Train |
| 10073 | R | Read Min [TT]<br>(TBCU4)dsp2_rd_inv_fq_axle1_4 : 1<= x                                |  | OK | 2.7  | Amanda Ntuli - 526239 | Train |
| 10074 | A | Put the Master controller in BRAKE position until the train comes to a complete stop  |  | OK |      | Amanda Ntuli - 526239 | Train |
| 10075 | A | Release [TT]<br>(TBCU1)DSP2_WR_inv_B_inv_on                                           |  | OK |      | Amanda Ntuli - 526239 | Train |
| 10076 | I | Traction and Brake M1 - Wheel Turn Test                                               |  | OK |      | Amanda Ntuli - 526239 | Train |
| 10077 | A | Force [TT]<br>(TBCU4)DSP2_WR_inv_B_inv_on = 0.0                                       |  | OK |      | Amanda Ntuli - 526239 | Train |
| 10078 | A | Put the direction selector switch in FORWARD position                                 |  | OK |      | Amanda Ntuli - 526239 | Train |
| 10079 | A | Put the Master controller in 100% TRACTION immediately, accelerate to speed 15 km/h   |  | OK |      | Amanda Ntuli - 526239 | Train |
| 10080 | R | The train is moving forward towards TC1 direction                                     |  | OK |      | Amanda Ntuli - 526239 | Train |
| 10081 | R | Read Min [TT]<br>(MPU1)BKT_Tbcu1EffAchPerc : 1<= x                                    |  | OK | 100  | Amanda Ntuli - 526239 | Train |

|       |   |                                                                                             |  |    |       |                       |       |
|-------|---|---------------------------------------------------------------------------------------------|--|----|-------|-----------------------|-------|
| 10082 | R | Read Defined Variable [TT]<br>(MPU1)BKT_Tbcu2EffAchPerc = 0.0                               |  | OK | 0     | Amanda Ntuli - 526239 | Train |
| 10083 | R | Read Defined Variable [TT]<br>(MPU1)BKT_Tbcu3EffAchPerc = 0.0                               |  | OK | 0     | Amanda Ntuli - 526239 | Train |
| 10084 | R | Read Defined Variable [TT]<br>(MPU1)BKT_Tbcu4EffAchPerc = 0.0                               |  | OK | 0     | Amanda Ntuli - 526239 | Train |
| 10085 | R | Read Min [TT]<br>(TBCU1)dsp2_rd_inv_fq_axle0_1 : 1<=<br>x                                   |  | OK | 2.09  | Amanda Ntuli - 526239 | Train |
| 10086 | R | Result Max [TT]<br>(TBCU1)dsp2_rd_inv_fq_axle1_1 : x<br><= 0                                |  | OK | -2.35 | Amanda Ntuli - 526239 | Train |
| 10087 | R | Read Min [TT]<br>(TBCU1)dsp2_rd_inv_fq_axle2_1 : 1<=<br>x                                   |  | OK | 2.59  | Amanda Ntuli - 526239 | Train |
| 10088 | R | Read Min [TT]<br>(TBCU1)dsp2_rd_inv_fq_axle3_1 : 1<=<br>x                                   |  | OK | 2.91  | Amanda Ntuli - 526239 | Train |
| 10089 | R | Read Min [TT]<br>(TBCU1)dsp2_rd_inv_fq_axle4_1 : 1<=<br>x                                   |  | OK | 3.47  | Amanda Ntuli - 526239 | Train |
| 10090 | A | Put the Master controller in BRAKE<br>position until the train comes to a<br>complete stop  |  | OK |       | Amanda Ntuli - 526239 | Train |
| 10091 | A | Put the direction selector switch in<br>REVERSE position                                    |  | OK |       | Amanda Ntuli - 526239 | Train |
| 10092 | A | Put the Master controller in TRACTION<br>position and slowly accelerate to speed <5<br>km/h |  | OK |       | Amanda Ntuli - 526239 | Train |
| 10093 | R | The train is moving backward towards<br>TC2 direction                                       |  | OK |       | Amanda Ntuli - 526239 | Train |
| 10094 | R | Result Max [TT]<br>(TBCU1)dsp2_rd_inv_fq_axle0_1 : x<br><= 0                                |  | OK | -0.66 | Amanda Ntuli - 526239 | Train |
| 10095 | R | Read Min [TT]<br>(TBCU1)dsp2_rd_inv_fq_axle1_1 : 1<=<br>x                                   |  | OK | 1.34  | Amanda Ntuli - 526239 | Train |
| 10096 | A | Put the Master controller in BRAKE<br>position until the train comes to a<br>complete stop  |  | OK |       | Amanda Ntuli - 526239 | Train |

|       |   |                                                                                      |  |    |       |                       |       |
|-------|---|--------------------------------------------------------------------------------------|--|----|-------|-----------------------|-------|
| 10097 | A | Release [TT]<br>(TBCU2)DSP2_WVR_inv_B_inv_on                                         |  | OK |       | Amanda Ntuli - 526239 | Train |
| 10098 | I | Traction and Brake M2 - Wheel Turn Test                                              |  | OK |       | Amanda Ntuli - 526239 | Train |
| 10099 | A | Force [TT]<br>(TBCU1)DSP2_WVR_inv_B_inv_on = 0.0                                     |  | OK |       | Amanda Ntuli - 526239 | Train |
| 10100 | A | Put the direction selector switch in FORWARD position                                |  | OK |       | Amanda Ntuli - 526239 | Train |
| 10101 | A | Put the Master controller in 100% TRACTION immediately, accelerate to speed 15 km/h  |  | OK |       | Amanda Ntuli - 526239 | Train |
| 10102 | R | The train moves forward towards TC1 direction                                        |  | OK |       | Amanda Ntuli - 526239 | Train |
| 10103 | R | Read Defined Variable [TT]<br>(MPU1)BKT_Tbcu1EffAchPerc = 0.0                        |  | OK | 0     | Amanda Ntuli - 526239 | Train |
| 10104 | R | Read Min [TT]<br>(MPU1)BKT_Tbcu2EffAchPerc : 1<= x                                   |  | OK | 100   | Amanda Ntuli - 526239 | Train |
| 10105 | R | Read Defined Variable [TT]<br>(MPU1)BKT_Tbcu3EffAchPerc = 0.0                        |  | OK | 0     | Amanda Ntuli - 526239 | Train |
| 10106 | R | Read Defined Variable [TT]<br>(MPU1)BKT_Tbcu4EffAchPerc = 0.0                        |  | OK | 0     | Amanda Ntuli - 526239 | Train |
| 10107 | R | Result Max [TT]<br>(TBCU2)dsp2_rd_inv_fq_axle0_2 : x <= 0                            |  | OK | -2.73 | Amanda Ntuli - 526239 | Train |
| 10108 | R | Read Min [TT]<br>(TBCU2)dsp2_rd_inv_fq_axle1_2 : 1<= x                               |  | OK | 3.01  | Amanda Ntuli - 526239 | Train |
| 10109 | R | Read Min [TT]<br>(TBCU2)dsp2_rd_inv_fq_axle2_2 : 1<= x                               |  | OK | 3.33  | Amanda Ntuli - 526239 | Train |
| 10110 | R | Read Min [TT]<br>(TBCU2)dsp2_rd_inv_fq_axle3_2 : 1<= x                               |  | OK | 3.66  | Amanda Ntuli - 526239 | Train |
| 10111 | R | Read Min [TT]<br>(TBCU2)dsp2_rd_inv_fq_axle4_2 : 1<= x                               |  | OK | 4.09  | Amanda Ntuli - 526239 | Train |
| 10112 | A | Put the Master controller in BRAKE position until the train comes to a complete stop |  | OK |       | Amanda Ntuli - 526239 | Train |

|       |   |                                                                                       |  |    |       |                       |       |
|-------|---|---------------------------------------------------------------------------------------|--|----|-------|-----------------------|-------|
| 10113 | A | Put the direction selector switch in REVERSE position                                 |  | OK |       | Amanda Ntuli - 526239 | Train |
| 10114 | A | Put the Master controller in TRACTION position and slowly accelerate to speed <5 km/h |  | OK |       | Amanda Ntuli - 526239 | Train |
| 10115 | R | The train moves backward towards TC2 direction                                        |  | OK |       | Amanda Ntuli - 526239 | Train |
| 10116 | R | Read Min [TT]<br>(TBCU2)dsp2_rd_inv_fq_axle0_2 : 1<= x                                |  | OK | 1.11  | Amanda Ntuli - 526239 | Train |
| 10117 | R | Result Max [TT]<br>(TBCU2)dsp2_rd_inv_fq_axle1_2 : x <= 0                             |  | OK | -1.33 | Amanda Ntuli - 526239 | Train |
| 10118 | A | Put the Master controller in BRAKE position until the train comes to a complete stop  |  | OK |       | Amanda Ntuli - 526239 | Train |
| 10119 | A | Release [TT]<br>(TBCU3)DSP2_WR_inv_B_inv_on                                           |  | OK |       | Amanda Ntuli - 526239 | Train |
| 10120 | I | Traction and Brake M3 - Wheel Turn Test                                               |  | OK |       | Amanda Ntuli - 526239 | Train |
| 10121 | A | Force [TT]<br>(TBCU2)DSP2_WR_inv_B_inv_on = 0.0                                       |  | OK |       | Amanda Ntuli - 526239 | Train |
| 10122 | A | Put the direction selector switch in FORWARD position                                 |  | OK |       | Amanda Ntuli - 526239 | Train |
| 10123 | A | Put the Master controller in 100% TRACTION immediately, accelerate to speed 15 km/h   |  | OK |       | Amanda Ntuli - 526239 | Train |
| 10124 | R | The train moves forward towards TC1 direction                                         |  | OK |       | Amanda Ntuli - 526239 | Train |
| 10125 | R | Read Defined Variable [TT]<br>(MPU1)BKT_Tbcu1EffAchPerc = 0.0                         |  | OK | 0     | Amanda Ntuli - 526239 | Train |
| 10126 | R | Read Defined Variable [TT]<br>(MPU1)BKT_Tbcu2EffAchPerc = 0.0                         |  | OK | 0     | Amanda Ntuli - 526239 | Train |
| 10127 | R | Read Min [TT]<br>(MPU1)BKT_Tbcu3EffAchPerc : 1<= x                                    |  | OK | 100   | Amanda Ntuli - 526239 | Train |
| 10128 | R | Read Defined Variable [TT]<br>(MPU1)BKT_Tbcu4EffAchPerc = 0.0                         |  | OK | 0     | Amanda Ntuli - 526239 | Train |
| 10129 | R | Result Max [TT]                                                                       |  | OK | -4.57 | Amanda Ntuli - 526239 | Train |

|       |   |                                                                                                                                                                                                           |  |    |       |                       |       |
|-------|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----|-------|-----------------------|-------|
|       |   | (TBCU3)dsp2_rd_inv_fq_axle0_3 : x<br>≤ 0                                                                                                                                                                  |  |    |       |                       |       |
| 10130 | R | Read Min [TT]<br>(TBCU3)dsp2_rd_inv_fq_axle1_3 : 1≤<br>x                                                                                                                                                  |  | OK | 4.78  | Amanda Ntuli - 526239 | Train |
| 10131 | R | Read Min [TT]<br>(TBCU3)dsp2_rd_inv_fq_axle2_3 : 1≤<br>x                                                                                                                                                  |  | OK | 5.05  | Amanda Ntuli - 526239 | Train |
| 10132 | R | Read Min [TT]<br>(TBCU3)dsp2_rd_inv_fq_axle3_3 : 1≤<br>x                                                                                                                                                  |  | OK | 5.31  | Amanda Ntuli - 526239 | Train |
| 10133 | R | Read Min [TT]<br>(TBCU3)dsp2_rd_inv_fq_axle4_3 : 1≤<br>x                                                                                                                                                  |  | OK | 5.79  | Amanda Ntuli - 526239 | Train |
| 10134 | A | Put the Master controller in BRAKE<br>position until the train comes to a<br>complete stop                                                                                                                |  | OK |       | Amanda Ntuli - 526239 | Train |
| 10135 | A | Put the direction selector switch in<br>REVERSE position                                                                                                                                                  |  | OK |       | Amanda Ntuli - 526239 | Train |
| 10136 | A | Put the Master controller in TRACTION<br>position and slowly accelerate to speed <5<br>km/h                                                                                                               |  | OK |       | Amanda Ntuli - 526239 | Train |
| 10137 | R | The train moves backward towards TC2<br>direction                                                                                                                                                         |  | OK |       | Amanda Ntuli - 526239 | Train |
| 10138 | R | Read Min [TT]<br>(TBCU3)dsp2_rd_inv_fq_axle0_3 : 1≤<br>x                                                                                                                                                  |  | OK | 2.46  | Amanda Ntuli - 526239 | Train |
| 10139 | R | Result Max [TT]<br>(TBCU3)dsp2_rd_inv_fq_axle1_3 : x<br>≤ 0                                                                                                                                               |  | OK | -2.66 | Amanda Ntuli - 526239 | Train |
| 10140 | A | Put the Master controller in BRAKE<br>position until the train comes to a<br>complete stop                                                                                                                |  | OK |       | Amanda Ntuli - 526239 | Train |
| 10141 | I | Wheel Turn Test Results Check                                                                                                                                                                             |  | OK |       | Amanda Ntuli - 526239 | Train |
| 10142 | A | Analyse the recorded results before<br>continuing with the test. If the results are<br>out of range, the test must be STOPPED<br>immediately, and the respective car motor<br>wiring needs to be checked. |  | OK |       | Amanda Ntuli - 526239 | Train |
| 10143 | R | M4 - Time taken to reach 15km/h<br>Result Max : x ≤ 24 (s)                                                                                                                                                |  | OK | 13.21 | Amanda Ntuli - 526239 | Train |
| 10144 | R | M1 - Time taken to reach 15km/h<br>Result Max : x ≤ 24 (s)                                                                                                                                                |  | OK | 18.55 | Amanda Ntuli - 526239 | Train |

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| 10145 | R | M2 - Time taken to reach 15km/h<br>Result Max : x <= 24 (s)                                                                                                                                                                 |  | OK | 17.85 | Amanda Ntuli - 526239 | Train |
| 10146 | R | M3 - Time taken to reach 15km/h<br>Result Max : x <= 24 (s)                                                                                                                                                                 |  | OK | 19.21 | Amanda Ntuli - 526239 | Train |
| 10147 | R | All M cars reach 15km/h in less than 24 seconds                                                                                                                                                                             |  | OK |       | Amanda Ntuli - 526239 | Train |
| 10148 | I | All Motors Test Run                                                                                                                                                                                                         |  | OK |       | Amanda Ntuli - 526239 | Train |
| 10149 | A | Release [TT]<br>(TBCU1)DSP2_WR_inv_B_inv_on                                                                                                                                                                                 |  | OK |       | Amanda Ntuli - 526239 | Train |
| 10150 | A | Release [TT]<br>(TBCU2)DSP2_WR_inv_B_inv_on                                                                                                                                                                                 |  | OK |       | Amanda Ntuli - 526239 | Train |
| 10151 | A | Release [TT]<br>(TBCU4)DSP2_WR_inv_B_inv_on                                                                                                                                                                                 |  | OK |       | Amanda Ntuli - 526239 | Train |
| 10152 | A | Put the direction selector switch in FORWARD position                                                                                                                                                                       |  | OK |       | Amanda Ntuli - 526239 | Train |
| 10153 | A | Slowly move the Master Controller to TRACTION position until the train speed reaches 15km/h                                                                                                                                 |  | OK |       | Amanda Ntuli - 526239 | Train |
| 10154 | R | Read Defined Variable [TT]<br>(MPU1)bcu1_tlnb = 1.0                                                                                                                                                                         |  | OK | 1     | Amanda Ntuli - 526239 | Train |
| 10155 | R | Read Defined Variable [TT]<br>(MPU1)li_drc_tc1dsnozeror1 = 1.0                                                                                                                                                              |  | OK | 1     | Amanda Ntuli - 526239 | Train |
| 10156 | A | Put the Master Controller in OFF position                                                                                                                                                                                   |  | OK |       | Amanda Ntuli - 526239 | Train |
| 10157 | R | The train comes to a standstill                                                                                                                                                                                             |  | OK |       | Amanda Ntuli - 526239 | Train |
| 10158 | I | Wheel Diameter Calibration                                                                                                                                                                                                  |  | OK |       | Amanda Ntuli - 526239 | Train |
| 10159 | I | Following conditions need to be met in order to successfully calibrate the wheel diameter. Ensure that the OTDR reference value of a Wheel Diameter has been entered.                                                       |  | OK |       | Amanda Ntuli - 526239 | Train |
| 10160 | A | 1) Train running on a straight track<br>2) Effort Driving Mode<br>3) Speed>15km/h<br>4) No wheel slippage<br>5) No Emergency Braking<br>6) Traction Effort = 0% (Coasting)<br>7) All Traction and Braking Units are working |  | OK |       | Amanda Ntuli - 526239 | Train |
| 10161 | A | On the DDU screen select "First Acquisition Request"                                                                                                                                                                        |  | OK |       | Amanda Ntuli - 526239 | Train |

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| 10162 | A | Check if the wheel diameter for each axle is between 838 mm and 842 mm, see picture attached. |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10163 | R | Read Min/Max [TT]<br>(MPU1)BKT_Bcu1WhDiamAx1 : 839<= x <= 841                                 |                                                                                   | OK | 840 | Amanda Ntuli - 526239 | Train |
| 10164 | R | Read Min/Max [TT]<br>(MPU1)BKT_Bcu1WhDiamAx2 : 839<= x <= 841                                 |                                                                                   | OK | 840 | Amanda Ntuli - 526239 | Train |
| 10165 | R | Read Min/Max [TT]<br>(MPU1)BKT_Bcu1WhDiamAx3 : 839<= x <= 841                                 |                                                                                   | OK | 840 | Amanda Ntuli - 526239 | Train |
| 10166 | R | Read Min/Max [TT]<br>(MPU1)BKT_Bcu1WhDiamAx4 : 839<= x <= 841                                 |                                                                                   | OK | 840 | Amanda Ntuli - 526239 | Train |
| 10167 | R | Read Min/Max [TT]<br>(MPU1)BKT_Bcu2WhDiamAx1 : 839<= x <= 841                                 |                                                                                   | OK | 840 | Amanda Ntuli - 526239 | Train |
| 10168 | R | Read Min/Max [TT]<br>(MPU1)BKT_Bcu2WhDiamAx2 : 839<= x <= 841                                 |                                                                                   | OK | 840 | Amanda Ntuli - 526239 | Train |
| 10169 | R | Read Min/Max [TT]<br>(MPU1)BKT_Bcu2WhDiamAx3 : 839<= x <= 841                                 |                                                                                   | OK | 840 | Amanda Ntuli - 526239 | Train |
| 10170 | R | Read Min/Max [TT]<br>(MPU1)BKT_Bcu2WhDiamAx4 : 839<= x <= 841                                 |                                                                                   | OK | 840 | Amanda Ntuli - 526239 | Train |
| 10171 | R | Read Min/Max [TT]<br>(MPU1)BKT_Tbcu1WhDiamAx1 : 839<= x <= 841                                |                                                                                   | OK | 839 | Amanda Ntuli - 526239 | Train |
| 10172 | R | Read Min/Max [TT]<br>(MPU1)BKT_Tbcu1WhDiamAx2 : 839<= x <= 841                                |                                                                                   | OK | 839 | Amanda Ntuli - 526239 | Train |
| 10173 | R | Read Min/Max [TT]<br>(MPU1)BKT_Tbcu1WhDiamAx3 : 839<= x <= 841                                |                                                                                   | OK | 840 | Amanda Ntuli - 526239 | Train |
| 10174 | R | Read Min/Max [TT]<br>(MPU1)BKT_Tbcu1WhDiamAx4 : 839<= x <= 841                                |                                                                                   | OK | 840 | Amanda Ntuli - 526239 | Train |
| 10175 | R | Read Min/Max [TT]<br>(MPU1)BKT_Tbcu2WhDiamAx1 : 839<= x <= 841                                |                                                                                   | OK | 840 | Amanda Ntuli - 526239 | Train |

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| 10176 | R | Read Min/Max [TT]<br>(MPU1)BKT_Tbcu2WhDiamAx2 : 839<=<br>x <= 841                                                                                                                                                                                                                                                                                                                                       |  | OK | 840 | Amanda Ntuli - 526239 | Train |
| 10177 | R | Read Min/Max [TT]<br>(MPU1)BKT_Tbcu2WhDiamAx3 : 839<=<br>x <= 841                                                                                                                                                                                                                                                                                                                                       |  | OK | 840 | Amanda Ntuli - 526239 | Train |
| 10178 | R | Read Min/Max [TT]<br>(MPU1)BKT_Tbcu2WhDiamAx4 : 839<=<br>x <= 841                                                                                                                                                                                                                                                                                                                                       |  | OK | 840 | Amanda Ntuli - 526239 | Train |
| 10179 | R | Read Min/Max [TT]<br>(MPU1)BKT_Tbcu3WhDiamAx1 : 839<=<br>x <= 841                                                                                                                                                                                                                                                                                                                                       |  | OK | 840 | Amanda Ntuli - 526239 | Train |
| 10180 | R | Read Min/Max [TT]<br>(MPU1)BKT_Tbcu3WhDiamAx2 : 839<=<br>x <= 841                                                                                                                                                                                                                                                                                                                                       |  | OK | 839 | Amanda Ntuli - 526239 | Train |
| 10181 | R | Read Min/Max [TT]<br>(MPU1)BKT_Tbcu3WhDiamAx3 : 839<=<br>x <= 841                                                                                                                                                                                                                                                                                                                                       |  | OK | 840 | Amanda Ntuli - 526239 | Train |
| 10182 | R | Read Min/Max [TT]<br>(MPU1)BKT_Tbcu3WhDiamAx4 : 839<=<br>x <= 841                                                                                                                                                                                                                                                                                                                                       |  | OK | 840 | Amanda Ntuli - 526239 | Train |
| 10183 | R | Read Min/Max [TT]<br>(MPU1)BKT_Tbcu4WhDiamAx1 : 839<=<br>x <= 841                                                                                                                                                                                                                                                                                                                                       |  | OK | 840 | Amanda Ntuli - 526239 | Train |
| 10184 | R | Read Min/Max [TT]<br>(MPU1)BKT_Tbcu4WhDiamAx2 : 839<=<br>x <= 841                                                                                                                                                                                                                                                                                                                                       |  | OK | 840 | Amanda Ntuli - 526239 | Train |
| 10185 | R | Read Min/Max [TT]<br>(MPU1)BKT_Tbcu4WhDiamAx3 : 839<=<br>x <= 841                                                                                                                                                                                                                                                                                                                                       |  | OK | 840 | Amanda Ntuli - 526239 | Train |
| 10186 | R | Read Min/Max [TT]<br>(MPU1)BKT_Tbcu4WhDiamAx4 : 839<=<br>x <= 841                                                                                                                                                                                                                                                                                                                                       |  | OK | 839 | Amanda Ntuli - 526239 | Train |
| 10187 | I | Brake Tests                                                                                                                                                                                                                                                                                                                                                                                             |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10188 | I | For each test run, ensure the following are done:<br>-Prepare the dashboard on train tracer to record train performance<br>-Activate the relevant cab<br>-Login to DDU as Maintainer (70979080)<br>-Save each performance (only for speed of 60Km/h) result as .CVS on local drive of service laptop<br>-Ensure there is enough space remaining for each run, else put the train at the end of the line |  | OK |     | Amanda Ntuli - 526239 | Train |

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|       |   | -From 40km/h tests IT IS FORBIDDEN to do more than one run at a time on the track, each run should start at the beginning/end of the track |  |    |    |                       |       |
| 10189 | I | Initial Conditions for each car:<br>-ERTMS is ISOLATED<br>-Driving mode set to EFFORT mode                                                 |  | OK |    | Amanda Ntuli - 526239 | Train |
| 10190 | I | ALL the brake tests should be done from the extremities of the test track                                                                  |  | OK |    | Amanda Ntuli - 526239 | Train |
| 10191 | I | Emergency Brake @ 20km/h TC1                                                                                                               |  | OK |    | Amanda Ntuli - 526239 | Train |
| 10192 | A | Force [TT] SBK_BrakeDist = 0.0                                                                                                             |  | OK |    | Amanda Ntuli - 526239 | Train |
| 10193 | A | Release [TT] SBK_BrakeDist                                                                                                                 |  | OK |    | Amanda Ntuli - 526239 | Train |
| 10194 | A | Put the direction selector switch in FORWARD position                                                                                      |  | OK |    | Amanda Ntuli - 526239 | Train |
| 10195 | A | Put the Master Controller in MAX TRACTION position until the train speed reaches 20 +/- 2 km/h                                             |  | OK |    | Amanda Ntuli - 526239 | Train |
| 10196 | A | Push the emergency brake mushroom button 44S1                                                                                              |  | OK |    | Amanda Ntuli - 526239 | Train |
| 10197 | R | Result Max [TT] SBK_BrakeDist : x <= 42                                                                                                    |  | OK | 16 | Amanda Ntuli - 526239 | Train |
| 10198 | A | Put the direction selector switch in NEUTRAL position                                                                                      |  | OK |    | Amanda Ntuli - 526239 | Train |
| 10199 | A | Release the emergency brake button 44S1                                                                                                    |  | OK |    | Amanda Ntuli - 526239 | Train |
| 10200 | I | Service Brake @ 30km/h TC1                                                                                                                 |  | OK |    | Amanda Ntuli - 526239 | Train |
| 10201 | A | Force [TT] SBK_BrakeDist = 0.0                                                                                                             |  | OK |    | Amanda Ntuli - 526239 | Train |
| 10202 | A | Release [TT] SBK_BrakeDist                                                                                                                 |  | OK |    | Amanda Ntuli - 526239 | Train |
| 10203 | A | Put the direction selector switch in FORWARD position                                                                                      |  | OK |    | Amanda Ntuli - 526239 | Train |
| 10204 | A | Put the Master Controller in MAX TRACTION position until the train speed reaches 30 +/- 2 km/h                                             |  | OK |    | Amanda Ntuli - 526239 | Train |
| 10205 | A | Put the Master Controller in 100% BRAKE position                                                                                           |  | OK |    | Amanda Ntuli - 526239 | Train |
| 10206 | R | Result Max [TT] SBK_BrakeDist : x <= 87                                                                                                    |  | OK | 45 | Amanda Ntuli - 526239 | Train |

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| 10207 | A | Put the direction selector switch in NEUTRAL position                                          |  | OK |    | Amanda Ntuli - 526239 | Train |
| 10208 | I | Emergency Brake @ 40km/h TC1                                                                   |  | OK |    | Amanda Ntuli - 526239 | Train |
| 10209 | A | Force [TT] SBK_BrakeDist = 0.0                                                                 |  | OK |    | Amanda Ntuli - 526239 | Train |
| 10210 | A | Release [TT] SBK_BrakeDist                                                                     |  | OK |    | Amanda Ntuli - 526239 | Train |
| 10211 | A | Put the direction selector switch in FORWARD position                                          |  | OK |    | Amanda Ntuli - 526239 | Train |
| 10212 | A | Put the Master Controller in MAX TRACTION position until the train speed reaches 40 +/- 2 km/h |  | OK |    | Amanda Ntuli - 526239 | Train |
| 10213 | A | Push the emergency brake mushroom button 44S1                                                  |  | OK |    | Amanda Ntuli - 526239 | Train |
| 10214 | R | Result Max [TT] SBK_BrakeDist : $x \leq 80$                                                    |  | OK | 59 | Amanda Ntuli - 526239 | Train |
| 10215 | A | Put the direction selector switch in NEUTRAL position                                          |  | OK |    | Amanda Ntuli - 526239 | Train |
| 10216 | A | Release the emergency brake button 44S1                                                        |  | OK |    | Amanda Ntuli - 526239 | Train |
| 10217 | I | Service Brake @ 20km/h TC2                                                                     |  | OK |    | Amanda Ntuli - 526239 | Train |
| 10218 | A | Force [TT] SBK_BrakeDist = 0.0                                                                 |  | OK |    | Amanda Ntuli - 526239 | Train |
| 10219 | A | Release [TT] SBK_BrakeDist                                                                     |  | OK |    | Amanda Ntuli - 526239 | Train |
| 10220 | A | Put the direction selector switch in FORWARD position                                          |  | OK |    | Amanda Ntuli - 526239 | Train |
| 10221 | A | Put the Master Controller in MAX TRACTION position until the train speed reaches 20 +/- 2 km/h |  | OK |    | Amanda Ntuli - 526239 | Train |
| 10222 | A | Put the Master Controller in OFF position                                                      |  | OK |    | Amanda Ntuli - 526239 | Train |
| 10223 | R | Result Max [TT] SBK_BrakeDist : $x \leq 60$                                                    |  | OK | 23 | Amanda Ntuli - 526239 | Train |
| 10224 | A | Put the direction selector switch in NEUTRAL position                                          |  | OK |    | Amanda Ntuli - 526239 | Train |
| 10225 | I | Emergency Brake @ 30km/h TC2                                                                   |  | OK |    | Amanda Ntuli - 526239 | Train |
| 10226 | A | Force [TT] SBK_BrakeDist = 0.0                                                                 |  | OK |    | Amanda Ntuli - 526239 | Train |
| 10227 | A | Release [TT] SBK_BrakeDist                                                                     |  | OK |    | Amanda Ntuli - 526239 | Train |

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| 10228 | A | Put the direction selector switch in FORWARD position                                          |                                                                                     | OK |    | Amanda Ntuli - 526239 | Train |
| 10229 | A | Put the Master Controller in MAX TRACTION position until the train speed reaches 30 +/- 2 km/h |                                                                                     | OK |    | Amanda Ntuli - 526239 | Train |
| 10230 | A | Put the Master Controller in OFF position                                                      |                                                                                     | OK |    | Amanda Ntuli - 526239 | Train |
| 10231 | A | Push the emergency brake mushroom button 44S1                                                  |                                                                                     | OK |    | Amanda Ntuli - 526239 | Train |
| 10232 | R | Result Max [TT] SBK_BrakeDist : x <= 62                                                        |                                                                                     | OK | 39 | Amanda Ntuli - 526239 | Train |
| 10233 | A | Put the direction selector switch in NEUTRAL position                                          |                                                                                     | OK |    | Amanda Ntuli - 526239 | Train |
| 10234 | A | Release the emergency brake button 44S1                                                        |                                                                                     | OK |    | Amanda Ntuli - 526239 | Train |
| 10235 | I | Service Brake @ 40km/h TC2                                                                     |                                                                                     | OK |    | Amanda Ntuli - 526239 | Train |
| 10236 | A | Force [TT] SBK_BrakeDist = 0.0                                                                 |                                                                                     | OK |    | Amanda Ntuli - 526239 | Train |
| 10237 | A | Release [TT] SBK_BrakeDist                                                                     |                                                                                     | OK |    | Amanda Ntuli - 526239 | Train |
| 10238 | A | Put the direction selector switch in FORWARD position                                          |                                                                                     | OK |    | Amanda Ntuli - 526239 | Train |
| 10239 | A | Put the Master Controller in MAX TRACTION position until the train speed reaches 40 +/- 2 km/h |                                                                                     | OK |    | Amanda Ntuli - 526239 | Train |
| 10240 | A | Put the Master Controller in 100% BRAKE position                                               |                                                                                     | OK |    | Amanda Ntuli - 526239 | Train |
| 10241 | R | Result Max [TT] SBK_BrakeDist : x <= 113                                                       |                                                                                     | OK | 68 | Amanda Ntuli - 526239 | Train |
| 10242 | A | Put the direction selector switch in NEUTRAL position                                          |                                                                                     | OK |    | Amanda Ntuli - 526239 | Train |
| 10243 | I | ERTMS Dynamic                                                                                  |                                                                                     | OK |    | Amanda Ntuli - 526239 | Train |
| 10244 | A | Put the ERTMS switch 62S1 in NORMAL position in both TC cars                                   |                                                                                     | OK |    | Amanda Ntuli - 526239 | Train |
| 10245 | A | Active cab on TC1                                                                              |                                                                                     | OK |    | Amanda Ntuli - 526239 | Train |
| 10246 | A | Use the procedure attached for ERTMS dynamic commissioning.                                    |  | OK |    | Amanda Ntuli - 526239 | Train |
| 10247 | R | Dynamic ERTMS commissioning has been completed successfully                                    |                                                                                     | OK |    | Amanda Ntuli - 526239 | Train |

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| 10248 | I | HIGH SPEED TEST                                                                                                                                                                                   |                                                                                   | OK |    | Amanda Ntuli - 526239 | Train |
| 10249 | I | For each and the following high-speed test make sure that the train is positioned at the start of the track, and the driver can see the Eurobalise on the track as shown in the picture attached. |  | OK |    | Amanda Ntuli - 526239 | Train |
| 10250 | I | Service Brake @ 50km/h TC1                                                                                                                                                                        |                                                                                   | OK |    | Amanda Ntuli - 526239 | Train |
| 10251 | A | Use maintenance code (70979080) to log into DMI screen and do start of mission                                                                                                                    |                                                                                   | OK |    | Amanda Ntuli - 526239 | Train |
| 10252 | A | Force [TT] SBK_BrakeDist = 0.0                                                                                                                                                                    |                                                                                   | OK |    | Amanda Ntuli - 526239 | Train |
| 10253 | A | Release [TT] SBK_BrakeDist                                                                                                                                                                        |                                                                                   | OK |    | Amanda Ntuli - 526239 | Train |
| 10254 | A | Put the direction selector switch in FORWARD position                                                                                                                                             |                                                                                   | OK |    | Amanda Ntuli - 526239 | Train |
| 10255 | A | Put the Master Controller in MAX TRACTION position until the train speed reaches 50 +/- 2 km/h                                                                                                    |                                                                                   | OK |    | Amanda Ntuli - 526239 | Train |
| 10256 | A | Put the Master Controller in 100% BRAKE position                                                                                                                                                  |                                                                                   | OK |    | Amanda Ntuli - 526239 | Train |
| 10257 | R | Result Max [TT] SBK_BrakeDist : x <= 142                                                                                                                                                          |                                                                                   | OK | 91 | Amanda Ntuli - 526239 | Train |
| 10258 | A | Put the direction selector switch in NEUTRAL position                                                                                                                                             |                                                                                   | OK |    | Amanda Ntuli - 526239 | Train |
| 10259 | I | Emergency Brake @ 50km/h TC2                                                                                                                                                                      |                                                                                   | OK |    | Amanda Ntuli - 526239 | Train |
| 10260 | A | Use maintenance code (70979080) to log into DMI screen and do start of mission                                                                                                                    |                                                                                   | OK |    | Amanda Ntuli - 526239 | Train |
| 10261 | A | Force [TT] SBK_BrakeDist = 0.0                                                                                                                                                                    |                                                                                   | OK |    | Amanda Ntuli - 526239 | Train |
| 10262 | A | Release [TT] SBK_BrakeDist                                                                                                                                                                        |                                                                                   | OK |    | Amanda Ntuli - 526239 | Train |
| 10263 | A | Put the direction selector switch in FORWARD position                                                                                                                                             |                                                                                   | OK |    | Amanda Ntuli - 526239 | Train |
| 10264 | A | Put the Master Controller in MAX TRACTION position until the train speed reaches 50 +/- 2 km/h                                                                                                    |                                                                                   | OK |    | Amanda Ntuli - 526239 | Train |
| 10265 | A | Push the emergency brake mushroom button 44S1                                                                                                                                                     |                                                                                   | OK |    | Amanda Ntuli - 526239 | Train |
| 10266 | R | Result Max [TT] SBK_BrakeDist : x <= 100                                                                                                                                                          |                                                                                   | OK | 80 | Amanda Ntuli - 526239 | Train |

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| 10267 | A | Put the direction selector switch in NEUTRAL position                                                      |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10268 | A | Release the emergency brake button 44S1                                                                    |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10269 | I | For the following tests, ensure the dashboard is running and record each result and save each file as .CSV |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10270 | I | Service Brake @ 60km/h TC1                                                                                 |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10271 | A | Use maintenance code (70979080) to log into DMI screen and do start of mission                             |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10272 | A | Put the train in starting position on the track                                                            |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10273 | A | Force [TT] SBK_BrakeDist = 0.0                                                                             |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10274 | A | Release [TT] SBK_BrakeDist                                                                                 |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10275 | A | Put the direction selector switch in FORWARD position                                                      |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10276 | A | Put the Master Controller in MAX TRACTION position until the train speed reaches 60 +/- 2 km/h             |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10277 | A | Put the Master Controller in 100% BRAKE position                                                           |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10278 | R | Result Max [TT] SBK_BrakeDist : x <= 171                                                                   |  | OK | 136 | Amanda Ntuli - 526239 | Train |
| 10279 | A | Put the direction selector switch in NEUTRAL position                                                      |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10280 | I | Service Brake @ 60km/h TC2                                                                                 |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10281 | A | Use maintenance code (70979080) to log into DMI screen and do start of mission                             |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10282 | A | Force [TT] SBK_BrakeDist = 0.0                                                                             |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10283 | A | Release [TT] SBK_BrakeDist                                                                                 |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10284 | A | Put the direction selector switch in FORWARD position                                                      |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10285 | A | Put the Master Controller in MAX TRACTION position until the train speed reaches 60 +/- 2 km/h             |  | OK |     | Amanda Ntuli - 526239 | Train |

|       |   |                                                                                                |  |    |     |                       |       |
|-------|---|------------------------------------------------------------------------------------------------|--|----|-----|-----------------------|-------|
| 10286 | A | Put the Master Controller in 100% BRAKE position                                               |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10287 | R | Result Max [TT] SBK_BrakeDist : x <= 171                                                       |  | OK | 140 | Amanda Ntuli - 526239 | Train |
| 10288 | A | Put the direction selector switch in NEUTRAL position                                          |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10289 | I | Emergency brake @ 60kh/h TC1                                                                   |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10290 | A | Use maintenance code (70979080) to log into DMI screen and do start of mission                 |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10291 | A | Force [TT] SBK_BrakeDist = 0.0                                                                 |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10292 | A | Release [TT] SBK_BrakeDist                                                                     |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10293 | A | Put the direction selector switch in FORWARD position                                          |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10294 | A | Put the Master Controller in MAX TRACTION position until the train speed reaches 60 +/- 2 km/h |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10295 | A | Push the emergency brake mushroom button 44S1                                                  |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10296 | R | Result Max [TT] SBK_BrakeDist : x <= 121                                                       |  | OK | 112 | Amanda Ntuli - 526239 | Train |
| 10297 | A | Put the direction selector switch in NEUTRAL position                                          |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10298 | A | Release the emergency brake button 44S1                                                        |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10299 | A | Put the train at the end of the line                                                           |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10300 | I | Remember to save the .csv result file on the local drive of the PC used                        |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10301 | I | Emergency brake @ 60km/h TC2                                                                   |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10302 | A | Use maintenance code (70979080) to log into DMI screen and do start of mission                 |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10303 | A | Force [TT] SBK_BrakeDist = 0.0                                                                 |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10304 | A | Release [TT] SBK_BrakeDist                                                                     |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10305 | A | Put the direction selector switch in FORWARD position                                          |  | OK |     | Amanda Ntuli - 526239 | Train |

|       |   |                                                                                                |  |    |     |                       |       |
|-------|---|------------------------------------------------------------------------------------------------|--|----|-----|-----------------------|-------|
| 10306 | A | Put the Master Controller in MAX TRACTION position until the train speed reaches 60 +/- 2 km/h |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10307 | A | Push the emergency brake mushroom button 44S1                                                  |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10308 | R | Result Max [TT] SBK_BrakeDist : x <= 121                                                       |  | OK | 112 | Amanda Ntuli - 526239 | Train |
| 10309 | A | Release the emergency brake button 44S1                                                        |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10310 | A | Put the direction selector switch in NEUTRAL position                                          |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10311 | I | Remember to save the .csv result file on the local drive of the PC used                        |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10312 | I | Degraded mode @60 km/h TC1                                                                     |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10313 | A | Use maintenance code (70979080) to log into DMI screen and do start of mission                 |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10314 | I | Degraded mode simulation                                                                       |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10315 | A | Force [TT] (TBCU1)f55_b_br_auth = 0.0                                                          |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10316 | A | Force [TT] (TBCU2)f55_b_br_auth = 0.0                                                          |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10317 | A | Force [TT] (TBCU3)f55_b_br_auth = 0.0                                                          |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10318 | A | Force [TT] (TBCU4)f55_b_br_auth = 0.0                                                          |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10319 | A | Put the direction selector switch in FORWARD position                                          |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10320 | R | Lamp 31H1 is "ON" on the alarm module                                                          |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10321 | R | TA appears on DDU screen                                                                       |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10322 | A | Prepare the dashboard on Train Tracer to record the train performance                          |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10323 | A | Force [TT] SBK_BrakeDist = 0.0                                                                 |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10324 | A | Release [TT] SBK_BrakeDist                                                                     |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10325 | A | Put the Master Controller in MAX TRACTION position until the train speed reaches 60 +/- 2 km/h |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10326 | A | Put the Master Controller in 100% BRAKE position                                               |  | OK |     | Amanda Ntuli - 526239 | Train |

|       |   |                                                                                                |  |    |     |                       |       |
|-------|---|------------------------------------------------------------------------------------------------|--|----|-----|-----------------------|-------|
| 10327 | R | Result Max [TT] SBK_BrakeDist : x <= 171                                                       |  | OK | 146 | Amanda Ntuli - 526239 | Train |
| 10328 | A | Put the train at the end of the line                                                           |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10329 | I | Remember to save the .csv result file on the local drive of the PC used                        |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10330 | I | Degraded mode @ 60km/h TC2                                                                     |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10331 | A | Use maintenance code (70979080) to log into DMI screen and do start of mission                 |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10332 | A | Put the direction selector switch in FORWARD position                                          |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10333 | R | Lamp 31H1 is ON on the alarm module                                                            |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10334 | R | TA appears on DDU screen                                                                       |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10335 | A | Prepare the dashboard on Train Tracer to record the train performance                          |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10336 | A | Force [TT] SBK_BrakeDist = 0.0                                                                 |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10337 | A | Release [TT] SBK_BrakeDist                                                                     |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10338 | A | Put the Master Controller in MAX TRACTION position until the train speed reaches 60 +/- 2 km/h |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10339 | A | Put the Master Controller in 100% BRAKE position                                               |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10340 | R | Result Max [TT] SBK_BrakeDist : x <= 171                                                       |  | OK | 112 | Amanda Ntuli - 526239 | Train |
| 10341 | A | Release [TT] (TBCU1)f55_b_br_auth                                                              |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10342 | A | Release [TT] (TBCU2)f55_b_br_auth                                                              |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10343 | A | Release [TT] (TBCU3)f55_b_br_auth                                                              |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10344 | A | Release [TT] (TBCU4)f55_b_br_auth                                                              |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10345 | I | Remember to save the .csv result file on the local drive of the PC used                        |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10346 | A | Put the train at the end of the line                                                           |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10347 | I | Normal service brake operation                                                                 |  | OK |     | Amanda Ntuli - 526239 | Train |
| 10348 | A | Active cab on TC1                                                                              |  | OK |     | Amanda Ntuli - 526239 | Train |

|       |   |                                                                                                 |  |    |       |                       |       |
|-------|---|-------------------------------------------------------------------------------------------------|--|----|-------|-----------------------|-------|
| 10349 | A | Put the direction selector switch in FORWARD position                                           |  | OK |       | Amanda Ntuli - 526239 | Train |
| 10350 | R | Lamp 31H1 is "ON" on the alarm module                                                           |  | OK |       | Amanda Ntuli - 526239 | Train |
| 10351 | R | TA appears on DDU screen                                                                        |  | OK |       | Amanda Ntuli - 526239 | Train |
| 10352 | A | Put the Master controller in TRACTION position until the train speed reaches 10km/h             |  | OK |       | Amanda Ntuli - 526239 | Train |
| 10353 | A | Put the Master controller in LOW BRAKE position until the train reaches a speed less than 3km/h |  | OK |       | Amanda Ntuli - 526239 | Train |
| 10354 | R | Read Defined Variable [TT] (BCU1)LI_NOT_INHIB = 0.0                                             |  | OK | 0     | Amanda Ntuli - 526239 | Train |
| 10355 | R | Read Defined Variable [TT] (BCU2)LI_NOT_INHIB = 0.0                                             |  | OK | 0     | Amanda Ntuli - 526239 | Train |
| 10356 | R | Read Defined Variable [TT] (TBCU1)LI_NOT_INHIB = 0.0                                            |  | OK | 0     | Amanda Ntuli - 526239 | Train |
| 10357 | R | Read Defined Variable [TT] (TBCU2)LI_NOT_INHIB = 0.0                                            |  | OK | 0     | Amanda Ntuli - 526239 | Train |
| 10358 | R | Read Defined Variable [TT] (TBCU3)LI_NOT_INHIB = 0.0                                            |  | OK | 0     | Amanda Ntuli - 526239 | Train |
| 10359 | R | Read Defined Variable [TT] (TBCU4)LI_NOT_INHIB = 0.0                                            |  | OK | 0     | Amanda Ntuli - 526239 | Train |
| 10360 | A | Put the Master controller in OFF position                                                       |  | OK |       | Amanda Ntuli - 526239 | Train |
| 10361 | R | Observe that the train continues to brake until it comes to a complete stop                     |  | OK |       | Amanda Ntuli - 526239 | Train |
| 10362 | R | Read Min [TT] (BCU1)AO_SERV_BRAKE : 1.2<= x                                                     |  | OK | 38.33 | Amanda Ntuli - 526239 | Train |
| 10363 | R | Read Min [TT] (BCU2)AO_SERV_BRAKE : 1.2<= x                                                     |  | OK | 38.33 | Amanda Ntuli - 526239 | Train |
| 10364 | R | Read Min [TT] (TBCU1)AO_SERV_BRAKE : 1.2<= x                                                    |  | OK | 38.32 | Amanda Ntuli - 526239 | Train |
| 10365 | R | Read Min [TT] (TBCU2)AO_SERV_BRAKE : 1.2<= x                                                    |  | OK | 38.32 | Amanda Ntuli - 526239 | Train |
| 10366 | R | Read Min [TT] (TBCU3)AO_SERV_BRAKE : 1.2<= x                                                    |  | OK | 38.33 | Amanda Ntuli - 526239 | Train |

|       |   |                                                                                                                                                                                                                 |                                                                                   |    |       |                       |       |
|-------|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|----|-------|-----------------------|-------|
| 10367 | R | Read Min [TT]<br>(TBCU4)AO_SERV_BRAKE : 1.2<= x                                                                                                                                                                 |                                                                                   | OK | 38.33 | Amanda Ntuli - 526239 | Train |
| 10368 | A | Put the ERTMS switch 62S1 in<br>ISOLATION position in both TC cars                                                                                                                                              |                                                                                   | OK |       | Amanda Ntuli - 526239 | Train |
| 10369 | I | Brake Distances Results                                                                                                                                                                                         |                                                                                   | OK |       | Amanda Ntuli - 526239 | Train |
| 10370 | A | Zip All the recorded CSV files of Braking<br>distances into one folder and upload on<br>teams "shifts reports" channel under a<br>specific train folder.<br><br>Rename the folder as:<br>TSXX_Braking_Distances |                                                                                   | OK |       | Amanda Ntuli - 526239 | Train |
| 10371 | I | Train Acceleration Results                                                                                                                                                                                      |                                                                                   | OK |       | Amanda Ntuli - 526239 | Train |
| 10372 | A | Use the following spreadsheet to calculate<br>the acceleration                                                                                                                                                  |                                                                                   | OK |       | Amanda Ntuli - 526239 | Train |
| 10373 | A |                                                                                                                                                                                                                 |  | OK |       | Amanda Ntuli - 526239 | Train |
| 10374 | A | On the recorded dashboard, check how<br>long it takes to reach 55km/h from<br>Rec_speed>0 using Trace CSV software.<br><br>Delta T (s)<br>Delta V (km/h)                                                        |                                                                                   | OK |       | Amanda Ntuli - 526239 | Train |
| 10375 | R | TC1 Acceleration<br>Result Min : 0.85<= x (m/s <sup>2</sup> )                                                                                                                                                   |                                                                                   | OK | 1.09  | Amanda Ntuli - 526239 | Train |
| 10376 | R | TC2 Acceleration<br>Result Min : 0.85<= x (m/s <sup>2</sup> )                                                                                                                                                   |                                                                                   | OK | 0.89  | Amanda Ntuli - 526239 | Train |
| 10377 | I | 25km/h Speed limit in Reverse Direction                                                                                                                                                                         |                                                                                   | OK |       | Amanda Ntuli - 526239 | Train |
| 10378 | A | Active Cab in TC1                                                                                                                                                                                               |                                                                                   | OK |       | Amanda Ntuli - 526239 | Train |
| 10379 | A | Select Driving Mode to EFFORT position                                                                                                                                                                          |                                                                                   | OK |       | Amanda Ntuli - 526239 | Train |
| 10380 | A | Put the direction selector switch in<br>REVERSE position                                                                                                                                                        |                                                                                   | OK |       | Amanda Ntuli - 526239 | Train |
| 10381 | A | Put the Master controller in 100% Traction<br>position                                                                                                                                                          |                                                                                   | OK |       | Amanda Ntuli - 526239 | Train |
| 10382 | R | The maximum train speed reached is<br>25km/h                                                                                                                                                                    |                                                                                   | OK |       | Amanda Ntuli - 526239 | Train |
| 10383 | A | Put the Master controller in OFF position                                                                                                                                                                       |                                                                                   | OK |       | Amanda Ntuli - 526239 | Train |
| 10384 | R | The train comes to a complete stop                                                                                                                                                                              |                                                                                   | OK |       | Amanda Ntuli - 526239 | Train |

|       |   |                                                       |  |    |  |                       |       |
|-------|---|-------------------------------------------------------|--|----|--|-----------------------|-------|
| 10385 | A | Put the direction selector switch in NEUTRAL position |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10386 | A | Remove active cab in TC1                              |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10387 | I | 25km/h Speed limit in Reverse Direction               |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10388 | A | Active Cab in TC2                                     |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10389 | A | Select Driving Mode to EFFORT position                |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10390 | A | Put the direction selector switch in REVERSE position |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10391 | A | Put the Master controller in 100% Traction position   |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10392 | R | The maximum train speed reached is 25km/h             |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10393 | A | Put the Master controller in OFF position             |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10394 | R | The train comes to a complete stop                    |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10395 | A | Put the direction selector switch in NEUTRAL position |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10396 | I | DEPOT mode speed limit TC1                            |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10397 | A | Put the driving mode switch in DEPOT position         |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10398 | A | Put the direction selector switch in FORWARD position |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10399 | A | Put the Master controller in 100% Traction position   |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10400 | R | The maximum train speed reached is 15km/h             |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10401 | A | Put the Master controller in OFF position             |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10402 | R | The train comes to a complete stop                    |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10403 | A | Put the direction selector switch in NEUTRAL position |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10404 | I | DEPOT mode speed limit TC2                            |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10405 | A | Active cab on TC2                                     |  | OK |  | Amanda Ntuli - 526239 | Train |

|       |   |                                                                                      |  |    |  |                       |       |
|-------|---|--------------------------------------------------------------------------------------|--|----|--|-----------------------|-------|
| 10406 | A | Put the driving mode switch in DEPOT position                                        |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10407 | A | Put the direction selector switch in FORWARD position                                |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10408 | A | Put the Master controller in 100% Traction position                                  |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10409 | R | The maximum train speed reached is 15km/h                                            |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10410 | A | Put the Master controller in OFF position                                            |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10411 | R | The train comes to a complete stop                                                   |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10412 | A | Put the direction selector switch in NEUTRAL position                                |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10413 | A | Remove active cab on TC2                                                             |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10414 | I | Doors                                                                                |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10415 | I | Test 04 - PEA activation and override within timeout [PRASA-40-Val-2]                |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10416 | A | Put the Master controller in TRACTION position and accelerate the train up to 10km/h |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10417 | A | Press Left and Right Door Authorization Buttons (50S6 and 50S5)                      |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10418 | R | When train is running above 5km/h it is not possible to get Door Authorization.      |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10419 | A | Pull any PEA on the train                                                            |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10420 | A | Before 10s elapses with PEA pulled, press the button 44S5 to override the PEA        |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10421 | R | TA lamp is ON                                                                        |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10422 | A | Apply brake until the complete stop of the Train.                                    |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10423 | A | Reset PEA using the switch 44S6                                                      |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10424 | I | Test 06 - PEA activation with timeout respected [PRASA-40-Val-1]                     |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10425 | A | Put the Master controller in TRACTION position and accelerate the train up to        |  | OK |  | Amanda Ntuli - 526239 | Train |

|       |   |                                                                                                                |  |    |  |                       |       |
|-------|---|----------------------------------------------------------------------------------------------------------------|--|----|--|-----------------------|-------|
|       |   | 10km/h                                                                                                         |  |    |  |                       |       |
| 10426 | A | Pull another PEA on the train                                                                                  |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10427 | R | After 10s with PEA pulled, Emergency Brakes should be applied.                                                 |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10428 | A | Put the Master controller in OFF position                                                                      |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10429 | A | Press the button 54S3 twice to acknowledge the PEA                                                             |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10430 | A | Reset PEA using the switch 44S6                                                                                |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10431 | A | Release Emergency Brakes                                                                                       |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10432 | I | Test 05 - PEA activation with Train speed lower than 5 km/h [PRASA-40-Val-4]                                   |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10433 | A | Put the Master controller in TRACTION position, pull any PEA on the train before the train speed reaches 5km/h |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10434 | R | An alarm appears on DDU screen warning that a PEA was pulled                                                   |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10435 | R | TA lamp turns OFF                                                                                              |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10436 | R | Emergency Brake is applied                                                                                     |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10437 | A | Press the button 54S3 twice to acknowledge the PEA                                                             |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10438 | A | Reset the PEA using switch 44S6                                                                                |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10439 | A | Open and close the doors on the side where the PEA was pulled                                                  |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10440 | R | All doors are closed on DDU screen                                                                             |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10441 | A | Put the Master controller in OFF position                                                                      |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10442 | A | Reset Emergency Brakes                                                                                         |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10443 | I | Test 07 - PEA activation with reset PEA switch permanently active [PRASA-40-Val-3]                             |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10444 | A | Force [TT] (MPU1)lo_ubk_tc1resetpea = 1.0                                                                      |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10445 | A | Accelerate the train up to 10 km/h.                                                                            |  | OK |  | Amanda Ntuli - 526239 | Train |

|       |   |                                                                              |  |    |   |                       |       |
|-------|---|------------------------------------------------------------------------------|--|----|---|-----------------------|-------|
| 10446 | A | Pull any in TC1 car, but not till its final position                         |  | OK |   | Amanda Ntuli - 526239 | Train |
| 10447 | I | The lamp 44H1 (Emergency Brake Interlock Open) turns ON.                     |  | OK |   | Amanda Ntuli - 526239 | Train |
| 10448 | R | Read Defined Variable [TT]<br>(MPU1)li_ubk_tc1pealoo = 1.0                   |  | OK | 1 | Amanda Ntuli - 526239 | Train |
| 10449 | R | Read Defined Variable [TT]<br>(MPU1)li_dor_tc1alldoorsclosedr1 = 0.0         |  | OK | 0 | Amanda Ntuli - 526239 | Train |
| 10450 | R | Read Defined Variable [TT]<br>(MPU1)li_dor_tc1alldoorsclosedr2 = 0.0         |  | OK | 0 | Amanda Ntuli - 526239 | Train |
| 10451 | R | An alarm appears on DDU screen warning that a PEA was pulled.                |  | OK |   | Amanda Ntuli - 526239 | Train |
| 10452 | I | The lamp 31H1 (Traction Authorized) turns OFF.                               |  | OK |   | Amanda Ntuli - 526239 | Train |
| 10453 | R | Traction effort bar graph is indicating no effort on the line voltage module |  | OK |   | Amanda Ntuli - 526239 | Train |
| 10454 | R | Read Defined Variable [TT]<br>(MPU1)lo_drc_tc1tractionloopr2 = 0.0           |  | OK | 0 | Amanda Ntuli - 526239 | Train |
| 10455 | R | Read Defined Variable [TT]<br>(MPU1)lo_drc_tc1tractionloopr1 = 0.0           |  | OK | 0 | Amanda Ntuli - 526239 | Train |
| 10456 | A | After 10 seconds that PEA has been pulled check that:                        |  | OK |   | Amanda Ntuli - 526239 | Train |
| 10457 | R | Read Defined Variable [TT]<br>UBK_EmgcyBrkApd = 1.0                          |  | OK | 1 | Amanda Ntuli - 526239 | Train |
| 10458 | I | The lamp 44H4 (Emergency Brake Loop) turns ON.                               |  | OK |   | Amanda Ntuli - 526239 | Train |
| 10459 | R | Read Defined Variable [TT]<br>(MPU1)bcu1_tlnb = 0.0                          |  | OK | 0 | Amanda Ntuli - 526239 | Train |
| 10460 | A | Release [TT] (MPU1)lo_ubk_tc1resetpea                                        |  | OK |   | Amanda Ntuli - 526239 | Train |
| 10461 | R | The lamp 51H1 turns OFF (door closed and locked).                            |  | OK |   | Amanda Ntuli - 526239 | Train |
| 10462 | A | Set Passenger Emergency Alarm Reset Switch (44S6) to "Reset" position.       |  | OK |   | Amanda Ntuli - 526239 | Train |
| 10463 | R | PEA alarm signal is reset.                                                   |  | OK |   | Amanda Ntuli - 526239 | Train |
| 10464 | A | Move Master Controller Handle (30A1) to "OFF" position.                      |  | OK |   | Amanda Ntuli - 526239 | Train |

|       |   |                                                                                                                  |  |    |   |                       |       |
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| 10465 | A | Reset the emergency brake setting the direction switch (S2.2) to "NEUTRAL" and then to "FORWARD" position again. |  | OK |   | Amanda Ntuli - 526239 | Train |
| 10466 | R | Read Defined Variable [TT]<br>UBK_EmgcyBrkApld = 0.0                                                             |  | OK | 0 | Amanda Ntuli - 526239 | Train |
| 10467 | I | The lamp 44H4 (Emergency Brake Loop) turns OFF.                                                                  |  | OK |   | Amanda Ntuli - 526239 | Train |
| 10468 | R | Read Defined Variable [TT]<br>(MPU1)bcu1_tlnb = 1.0                                                              |  | OK | 1 | Amanda Ntuli - 526239 | Train |
| 10469 | I | The lamp 31H1 (Traction Authorized) turns ON.                                                                    |  | OK |   | Amanda Ntuli - 526239 | Train |
| 10470 | R | Read Defined Variable [TT]<br>(MPU1)lo_drc_tc1tractionloopr1 = 1.0                                               |  | OK | 1 | Amanda Ntuli - 526239 | Train |
| 10471 | R | Read Defined Variable [TT]<br>(MPU1)lo_drc_tc1tractionloopr2 = 1.0                                               |  | OK | 1 | Amanda Ntuli - 526239 | Train |
| 10472 | I | Test 08 - Safety Requirement [PRASA-34A-a]                                                                       |  | OK |   | Amanda Ntuli - 526239 | Train |
| 10473 | I | On the beginning the Train shall be stationary.                                                                  |  | OK |   | Amanda Ntuli - 526239 | Train |
| 10474 | A | Force [TT] (MPU1)lo_ets_tc1rstotdrr1 = 1.0                                                                       |  | OK |   | Amanda Ntuli - 526239 | Train |
| 10475 | A | Force [TT] (MPU1)lo_ets_tc1rstotdrr2 = 1.0                                                                       |  | OK |   | Amanda Ntuli - 526239 | Train |
| 10476 | R | Check on DDU that the On-board Train Data Recorder is offline                                                    |  | OK |   | Amanda Ntuli - 526239 | Train |
| 10477 | R | Read Defined Variable [TT]<br>(MPU1)li_rec_tc1thresholdfive1 = 0.0                                               |  | OK | 0 | Amanda Ntuli - 526239 | Train |
| 10478 | R | Read Defined Variable [TT]<br>(MPU1)li_rec_tc1thresholdfive2 = 0.0                                               |  | OK | 0 | Amanda Ntuli - 526239 | Train |
| 10479 | R | Read Defined Variable [TT]<br>(MPU1)li_rec_tc2thresholdfive1 = 0.0                                               |  | OK | 0 | Amanda Ntuli - 526239 | Train |
| 10480 | R | Read Defined Variable [TT]<br>(MPU1)li_rec_tc2thresholdfive2 = 0.0                                               |  | OK | 0 | Amanda Ntuli - 526239 | Train |
| 10481 | R | Read Defined Variable [TT]<br>(BCU2)LO_SPEED_THRSLD1 = 1.0                                                       |  | OK | 1 | Amanda Ntuli - 526239 | Train |
| 10482 | A | Accelerate the Train up to 4km/h.                                                                                |  | OK |   | Amanda Ntuli - 526239 | Train |

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| 10483 | R | Read Defined Variable [TT]<br>(BCU2)LO_SPEED_THRSLD1 = 0.0                                                                                                                                                                                                                                    |                                                                                     | OK | 0      | Amanda Ntuli - 526239 | Train |
| 10484 | A | Accelerate the Train up to 10km/h.                                                                                                                                                                                                                                                            |                                                                                     | OK |        | Amanda Ntuli - 526239 | Train |
| 10485 | R | Read Defined Variable [TT]<br>(MPU1)li_rec_tc1thresholdfive1 = 0.0                                                                                                                                                                                                                            |                                                                                     | OK | 0      | Amanda Ntuli - 526239 | Train |
| 10486 | R | Read Defined Variable [TT]<br>(MPU1)li_rec_tc1thresholdfive2 = 0.0                                                                                                                                                                                                                            |                                                                                     | OK | 0      | Amanda Ntuli - 526239 | Train |
| 10487 | R | Read Defined Variable [TT]<br>(MPU1)li_rec_tc2thresholdfive1 = 0.0                                                                                                                                                                                                                            |                                                                                     | OK | 0      | Amanda Ntuli - 526239 | Train |
| 10488 | R | Read Defined Variable [TT]<br>(MPU1)li_rec_tc2thresholdfive2 = 0.0                                                                                                                                                                                                                            |                                                                                     | OK | 0      | Amanda Ntuli - 526239 | Train |
| 10489 | R | Read Defined Variable [TT]<br>(BCU2)LO_SPEED_THRSLD1 = 0.0                                                                                                                                                                                                                                    |                                                                                     | OK | 0      | Amanda Ntuli - 526239 | Train |
| 10490 | R | Read Defined Variable [TT]<br>(MPU1)REC_Speed5ThresholdFail = 1.0                                                                                                                                                                                                                             |                                                                                     | OK | 1      | Amanda Ntuli - 526239 | Train |
| 10491 | A | Apply brake until the complete stop of the Train.                                                                                                                                                                                                                                             |                                                                                     | OK |        | Amanda Ntuli - 526239 | Train |
| 10492 | R | Read Defined Variable [TT]<br>(BCU2)LO_SPEED_THRSLD1 = 1.0                                                                                                                                                                                                                                    |                                                                                     | OK | 1      | Amanda Ntuli - 526239 | Train |
| 10493 | R | The OTDR is maintained OFF.                                                                                                                                                                                                                                                                   |                                                                                     | OK |        | Amanda Ntuli - 526239 | Train |
| 10494 | A | Release [TT] (MPU1)lo_ets_tc2rstotdrr1                                                                                                                                                                                                                                                        |                                                                                     | OK |        | Amanda Ntuli - 526239 | Train |
| 10495 | R | The OTDR is turned ON.                                                                                                                                                                                                                                                                        |                                                                                     | OK |        | Amanda Ntuli - 526239 | Train |
| 10496 | I | Test 09 - Safety Requirement [PRASA-23-Val-2]                                                                                                                                                                                                                                                 |                                                                                     | OK |        | Amanda Ntuli - 526239 | Train |
| 10497 | I | On the beginning the Train shall be stationary.                                                                                                                                                                                                                                               |                                                                                     | OK |        | Amanda Ntuli - 526239 | Train |
| 10498 | A | Force [TT] (BCU2)LO_SPEED_THRSLD1 = 0.0                                                                                                                                                                                                                                                       |                                                                                     | OK |        | Amanda Ntuli - 526239 | Train |
| 10499 | R | Read Undefined Variable [TT]<br>(MPU1)DCU1_TC1_HwIOStatus                                                                                                                                                                                                                                     |                                                                                     | OK | 136756 | Amanda Ntuli - 526239 | Train |
| 10500 | I | TrainTracer gives a numerical information through the variable "DCU1_TC1_HwIOStatus". In order to check the state of the bits 2 and 8, with the help of a programable calculator (use the computer's one), change the numerical information to a word information and read the state of these |  | OK |        | Amanda Ntuli - 526239 | Train |

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|       |   | bits.                                                                                                                                                  |  |    |        |                       |       |
| 10501 | R | DCU1_TC1_HwIOStatus.bit2 = 1                                                                                                                           |  | OK |        | Amanda Ntuli - 526239 | Train |
| 10502 | R | DCU1_TC1_HwIOStatus.bit8 = 0                                                                                                                           |  | OK |        | Amanda Ntuli - 526239 | Train |
| 10503 | R | Read Defined Variable [TT]<br>(MPU1)li_rec_tc1thresholdfive1 = 0.0                                                                                     |  | OK | 0      | Amanda Ntuli - 526239 | Train |
| 10504 | R | Read Defined Variable [TT]<br>(MPU1)li_rec_tc1thresholdfive2 = 0.0                                                                                     |  | OK | 0      | Amanda Ntuli - 526239 | Train |
| 10505 | R | Read Defined Variable [TT]<br>(MPU1)li_rec_tc2thresholdfive1 = 0.0                                                                                     |  | OK | 0      | Amanda Ntuli - 526239 | Train |
| 10506 | R | Read Defined Variable [TT]<br>(MPU1)li_rec_tc2thresholdfive2 = 0.0                                                                                     |  | OK | 0      | Amanda Ntuli - 526239 | Train |
| 10507 | A | Accelerate the Train up to 10km/h and check the variable "DCU1_TC1_HwIOStatus" as soon as the speed overpasses 5km/h (according to DDU's speed value). |  | OK |        | Amanda Ntuli - 526239 | Train |
| 10508 | R | Read Undefined Variable [TT]<br>(MPU1)DCU1_TC1_HwIOStatus                                                                                              |  | OK | 137008 | Amanda Ntuli - 526239 | Train |
| 10509 | R | DCU1_TC1_HwIOStatus.bit2 = 0                                                                                                                           |  | OK |        | Amanda Ntuli - 526239 | Train |
| 10510 | R | DCU1_TC1_HwIOStatus.bit8 = 1                                                                                                                           |  | OK |        | Amanda Ntuli - 526239 | Train |
| 10511 | R | Read Defined Variable [TT]<br>(MPU1)li_rec_tc1thresholdfive1 = 1.0                                                                                     |  | OK | 1      | Amanda Ntuli - 526239 | Train |
| 10512 | R | Read Defined Variable [TT]<br>(MPU1)li_rec_tc1thresholdfive2 = 1.0                                                                                     |  | OK | 1      | Amanda Ntuli - 526239 | Train |
| 10513 | R | Read Defined Variable [TT]<br>(MPU1)li_rec_tc2thresholdfive1 = 1.0                                                                                     |  | OK | 1      | Amanda Ntuli - 526239 | Train |
| 10514 | R | Read Defined Variable [TT]<br>(MPU1)li_rec_tc2thresholdfive2 = 1.0                                                                                     |  | OK | 1      | Amanda Ntuli - 526239 | Train |
| 10515 | I | Test 10 - Safety Requirement [PRASA-23-Val-1]                                                                                                          |  | OK |        | Amanda Ntuli - 526239 | Train |
| 10516 | R | Read Undefined Variable [TT]<br>(MPU1)DCU1_TC1_HwIOStatus                                                                                              |  | OK | 137008 | Amanda Ntuli - 526239 | Train |
| 10517 | R | DCU1_TC1_HwIOStatus.bit2 = 1                                                                                                                           |  | OK |        | Amanda Ntuli - 526239 | Train |
| 10518 | R | DCU1_TC1_HwIOStatus.bit8 = 0                                                                                                                           |  | OK |        | Amanda Ntuli - 526239 | Train |

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| 10519 | A | Release [TT]<br>(BCU2)LO_SPEED_THRSLD1                                                                                                                                                                                                                                                                 |  | OK |        | Amanda Ntuli - 526239 | Train |
| 10520 | I | Test 11 - Safety Requirement [PRASA-23-Val-4]                                                                                                                                                                                                                                                          |  | OK |        | Amanda Ntuli - 526239 | Train |
| 10521 | I | In case it is not possible to go further at the same direction, change cab and perform the tests with the opposite cab active.                                                                                                                                                                         |  | OK |        | Amanda Ntuli - 526239 | Train |
| 10522 | A | Force [TT] (BCU1)LO_SPEED_THRSLD1 = 1.0                                                                                                                                                                                                                                                                |  | OK |        | Amanda Ntuli - 526239 | Train |
| 10523 | A | Force [TT] (BCU2)LO_SPEED_THRSLD1 = 1.0                                                                                                                                                                                                                                                                |  | OK |        | Amanda Ntuli - 526239 | Train |
| 10524 | R | Relay 61k3 permanently supplied in all cars.                                                                                                                                                                                                                                                           |  | OK |        | Amanda Ntuli - 526239 | Train |
| 10525 | R | DCU1_TC1_HwIOStatus.bit2 = 1                                                                                                                                                                                                                                                                           |  | OK |        | Amanda Ntuli - 526239 | Train |
| 10526 | R | DCU1_TC1_HwIOStatus.bit8 = 0                                                                                                                                                                                                                                                                           |  | OK |        | Amanda Ntuli - 526239 | Train |
| 10527 | I | TrainTracer gives a numerical information through the variable "DCU1_TC1_DiagData1". In order to check the state of the bits 22 and 23, with the help of a programmable calculator (use the computer's one), change the numerical information to a Dword information and read the state of these bits. |  | OK |        | Amanda Ntuli - 526239 | Train |
| 10528 | R | Read Undefined Variable [TT]<br>(MPU1)DCU1_TC1_DiagData1                                                                                                                                                                                                                                               |  | OK | 0      | Amanda Ntuli - 526239 | Train |
| 10529 | R | DCU1_TC1_DiagData1.bit22 = 0                                                                                                                                                                                                                                                                           |  | OK |        | Amanda Ntuli - 526239 | Train |
| 10530 | R | DCU1_TC1_DiagData1.bit23 = 0                                                                                                                                                                                                                                                                           |  | OK |        | Amanda Ntuli - 526239 | Train |
| 10531 | A | Accelerate the Train up to 10km/h and check the status of the variables "DCU1_TC1_HwIOStatus" and "DCU1_TC1_DiagData1" when the speed overpasses 5km/h (according to DDU's speed value).                                                                                                               |  | OK |        | Amanda Ntuli - 526239 | Train |
| 10532 | R | Read Undefined Variable [TT]<br>(MPU1)DCU1_TC1_HwIOStatus                                                                                                                                                                                                                                              |  | OK | 137008 | Amanda Ntuli - 526239 | Train |
| 10533 | R | DCU1_TC1_HwIOStatus.bit2 = 1                                                                                                                                                                                                                                                                           |  | OK |        | Amanda Ntuli - 526239 | Train |
| 10534 | R | DCU1_TC1_HwIOStatus.bit8 = 1                                                                                                                                                                                                                                                                           |  | OK |        | Amanda Ntuli - 526239 | Train |

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| 10535 | R | Read Undefined Variable [TT]<br>(MPU1)DCU1_TC1_DiagData1                                         |                                                                                     | OK | 0      | Amanda Ntuli - 526239 | Train |
| 10536 | R | DCU1_TC1_DiagData1.bit22 = 1                                                                     |                                                                                     | OK |        | Amanda Ntuli - 526239 | Train |
| 10537 | R | DCU1_TC1_DiagData1.bit23 = 0                                                                     |                                                                                     | OK |        | Amanda Ntuli - 526239 | Train |
| 10538 | A | Force [TT] (MPU1)OTDR_5kphSpeedFlt = 1.0                                                         |                                                                                     | OK |        | Amanda Ntuli - 526239 | Train |
| 10539 | R | Check on DDU screen the appearance of an IOS (838) requiring a reparation at the end of the day. |                                                                                     | OK |        | Amanda Ntuli - 526239 | Train |
| 10540 | A | Release [TT] (MPU1)OTDR_5kphSpeedFlt                                                             |                                                                                     | OK |        | Amanda Ntuli - 526239 | Train |
| 10541 | A | Release [TT]<br>(BCU1)LO_SPEED_THRSLD1                                                           |                                                                                     | OK |        | Amanda Ntuli - 526239 | Train |
| 10542 | A | Release [TT]<br>(BCU2)LO_SPEED_THRSLD1                                                           |                                                                                     | OK |        | Amanda Ntuli - 526239 | Train |
| 10543 | A | Brake the train until its complete stop.                                                         |                                                                                     | OK |        | Amanda Ntuli - 526239 | Train |
| 10544 | I | Test 12 - Safety Requirement [PRASA-23-Val-5]                                                    |                                                                                     | OK |        | Amanda Ntuli - 526239 | Train |
| 10545 | A | For the following test use OTDR web portal to force the speed of above 5km/h                     |  | OK |        | Amanda Ntuli - 526239 | Train |
| 10546 | R | Relays 61k1 permanently supplied in all cars plus relays 61k2 in TC1 and TC2 cars.               |                                                                                     | OK |        | Amanda Ntuli - 526239 | Train |
| 10547 | R | Read Undefined Variable [TT]<br>(MPU1)DCU1_TC1_HwIOSStatus                                       |                                                                                     | OK | 136752 | Amanda Ntuli - 526239 | Train |
| 10548 | R | DCU1_TC1_HwIOSStatus.bit2 = 1                                                                    |                                                                                     | OK |        | Amanda Ntuli - 526239 | Train |
| 10549 | R | DCU1_TC1_HwIOSStatus.bit8 = 1                                                                    |                                                                                     | OK |        | Amanda Ntuli - 526239 | Train |
| 10550 | R | Read Defined Variable [TT]<br>(MPU1)li_rec_tc1thresholdfive1 = 1.0                               |                                                                                     | OK | 1      | Amanda Ntuli - 526239 | Train |
| 10551 | R | Read Defined Variable [TT]<br>(MPU1)li_rec_tc2thresholdfive1 = 1.0                               |                                                                                     | OK | 1      | Amanda Ntuli - 526239 | Train |
| 10552 | R | Check on DDU screen the appearance of an IOS (839) requiring a reparation at the end of the day. |                                                                                     | OK |        | Amanda Ntuli - 526239 | Train |
| 10553 | R | Read Defined Variable [TT]<br>(MPU1)DOR_FDcuSpeedThr = 1.0                                       |                                                                                     | OK | 1      | Amanda Ntuli - 526239 | Train |
| 10554 | A | Accelerate the Train up to 10km/h.                                                               |                                                                                     | OK |        | Amanda Ntuli - 526239 | Train |

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| 10555 | R | Read Undefined Variable [TT]<br>(MPU1)DCU1_TC1_HwIOStatus                                                                                                                     |  | OK | 136752 | Amanda Ntuli - 526239 | Train |
| 10556 | R | DCU1_TC1_HwIOStatus.bit2 = 0                                                                                                                                                  |  | OK |        | Amanda Ntuli - 526239 | Train |
| 10557 | R | DCU1_TC1_HwIOStatus.bit8 = 1                                                                                                                                                  |  | OK |        | Amanda Ntuli - 526239 | Train |
| 10558 | R | Read Undefined Variable [TT]<br>(MPU1)DCU1_TC1_DiagData1                                                                                                                      |  | OK | 0      | Amanda Ntuli - 526239 | Train |
| 10559 | R | DCU1_TC1_DiagData1.bit22 = 0                                                                                                                                                  |  | OK |        | Amanda Ntuli - 526239 | Train |
| 10560 | R | DCU1_TC1_DiagData1.bit23 = 0                                                                                                                                                  |  | OK |        | Amanda Ntuli - 526239 | Train |
| 10561 | R | Read Defined Variable [TT]<br>(MPU1)li_rec_tc1thresholdfive1 = 1.0                                                                                                            |  | OK | 1      | Amanda Ntuli - 526239 | Train |
| 10562 | R | Read Defined Variable [TT]<br>(MPU1)li_rec_tc2thresholdfive1 = 1.0                                                                                                            |  | OK | 1      | Amanda Ntuli - 526239 | Train |
| 10563 | A | Decelerate the Train until comes to a complete stop and check the status of the variables "DCU1_TC1_HwIOStatus" and "DCU1_TC1_DiagData1" as soon as the speed is below 5km/h. |  | OK |        | Amanda Ntuli - 526239 | Train |
| 10564 | R | Read Undefined Variable [TT]<br>(MPU1)DCU1_TC1_HwIOStatus                                                                                                                     |  | OK | 136752 | Amanda Ntuli - 526239 | Train |
| 10565 | R | DCU1_TC1_HwIOStatus.bit2 = 0, if 5km/h > train speed > 3km/h.                                                                                                                 |  | OK |        | Amanda Ntuli - 526239 | Train |
| 10566 | R | DCU1_TC1_HwIOStatus.bit2 = 1, if train speed < 3km/h.                                                                                                                         |  | OK |        | Amanda Ntuli - 526239 | Train |
| 10567 | R | DCU1_TC1_HwIOStatus.bit8 = 1                                                                                                                                                  |  | OK |        | Amanda Ntuli - 526239 | Train |
| 10568 | R | Read Undefined Variable [TT]<br>(MPU1)DCU1_TC1_DiagData1                                                                                                                      |  | OK | 0      | Amanda Ntuli - 526239 | Train |
| 10569 | R | DCU1_DiagData1.bit22 = 0                                                                                                                                                      |  | OK |        | Amanda Ntuli - 526239 | Train |
| 10570 | R | DCU1_DiagData1.bit23 = 1                                                                                                                                                      |  | OK |        | Amanda Ntuli - 526239 | Train |
| 10571 | R | Read Defined Variable [TT]<br>(MPU1)li_rec_tc1thresholdfive1 = 0.0                                                                                                            |  | OK | 0      | Amanda Ntuli - 526239 | Train |
| 10572 | R | Read Defined Variable [TT]<br>(MPU1)li_rec_tc2thresholdfive1 = 0.0                                                                                                            |  | OK | 0      | Amanda Ntuli - 526239 | Train |
| 10573 | R | Read Defined Variable [TT]<br>(MPU1)DOR_FDcuSpeedThr = 0.0                                                                                                                    |  | OK | 0      | Amanda Ntuli - 526239 | Train |

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| 10574 | I | Rescue Mode and Emergency Disconnection                                                                                                            |                                                                                     | OK |  | Amanda Ntuli - 526239 | Train |
| 10575 | I | BACKUP MODE                                                                                                                                        |                                                                                     | OK |  | Amanda Ntuli - 526239 | Train |
| 10576 | A | Active cab in TC1                                                                                                                                  |                                                                                     | OK |  | Amanda Ntuli - 526239 | Train |
| 10577 | A | Put the backup mode switch 27S1 in Backup position                                                                                                 |                                                                                     | OK |  | Amanda Ntuli - 526239 | Train |
| 10578 | A | Put the Driving Direction Switch to FORWARD position                                                                                               |                                                                                     | OK |  | Amanda Ntuli - 526239 | Train |
| 10579 | A | Hold pressed the "Master's Deadman Device (30A1.S4)" and move "Master Controller handle (30A1)" to initial "Traction" zone position.               |    | OK |  | Amanda Ntuli - 526239 | Train |
| 10580 | I | Low tractive effort demand is requested.                                                                                                           |                                                                                     | OK |  | Amanda Ntuli - 526239 | Train |
| 10581 | R | Although the low tractive effort demand has been requested, the Train moves with a standard tractive demand                                        |                                                                                     | OK |  | Amanda Ntuli - 526239 | Train |
| 10582 | A | Move "Master Controller (30A1)" handle to extreme "Traction" zone position                                                                         |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10583 | R | Verify that there wasn't an impact on train movement and the tractive demand was maintained                                                        |                                                                                     | OK |  | Amanda Ntuli - 526239 | Train |
| 10584 | A | Release the Master's Deadman Device (30A1.S4) for more than 5 seconds                                                                              |                                                                                     | OK |  | Amanda Ntuli - 526239 | Train |
| 10585 | R | Train applies emergency brake                                                                                                                      |                                                                                     | OK |  | Amanda Ntuli - 526239 | Train |
| 10586 | I | The Deadman device must remain pressed to allow traction in backup mode, otherwise the emergency brake loop is opened when the timer relay expire. |                                                                                     | OK |  | Amanda Ntuli - 526239 | Train |
| 10587 | A | Set the master controller to "OFF" position.                                                                                                       |                                                                                     | OK |  | Amanda Ntuli - 526239 | Train |
| 10588 | A | Set the Driving Direction Switch to NEUTRAL and then to FORWARD position again                                                                     |                                                                                     | OK |  | Amanda Ntuli - 526239 | Train |
| 10589 | R | Emergency brake released on Train.                                                                                                                 |                                                                                     | OK |  | Amanda Ntuli - 526239 | Train |
| 10590 | I | From now on, when operating the master controller don't forget to maintain anyone of the deadman devices pressed.                                  |                                                                                     | OK |  | Amanda Ntuli - 526239 | Train |

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| 10591 | A | Move "Master Controller (30A1)" handle to "Traction" zone position.                                                              |                                                                                    | OK |  | Amanda Ntuli - 526239 | Train |
| 10592 | R | Train starts to move.                                                                                                            |                                                                                    | OK |  | Amanda Ntuli - 526239 | Train |
| 10593 | A | Keeping the Master's handle within traction zone, check that the train is capable to reach 25km/h.                               |                                                                                    | OK |  | Amanda Ntuli - 526239 | Train |
| 10594 | R | Verify that train reaches, but does not exceed the speed of 25km/h.                                                              |                                                                                    | OK |  | Amanda Ntuli - 526239 | Train |
| 10595 | I | On Backup mode, train speed is limited to 25km/h.                                                                                |                                                                                    | OK |  | Amanda Ntuli - 526239 | Train |
| 10596 | A | Move "Master Controller (30A1)" handle to initial "Brake" zone position.                                                         |   | OK |  | Amanda Ntuli - 526239 | Train |
| 10597 | I | Low brake effort demand is requested.                                                                                            |                                                                                    | OK |  | Amanda Ntuli - 526239 | Train |
| 10598 | R | Verify that the train starts to brake with a standard brake effort.                                                              |                                                                                    | OK |  | Amanda Ntuli - 526239 | Train |
| 10599 | A | Move "Master Controller (30A1)" handle to extreme "Brake" zone position (stop before achieving "Emergency Brake" position).      |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10600 | I | High brake effort demand is requested.                                                                                           |                                                                                    | OK |  | Amanda Ntuli - 526239 | Train |
| 10601 | R | Verify that there wasn't an impact on train movement, and the brake demand was maintained.                                       |                                                                                    | OK |  | Amanda Ntuli - 526239 | Train |
| 10602 | I | On Backup Mode, brake system considers a single brake demand and disregards master controller handle position within brake zone. |                                                                                    | OK |  | Amanda Ntuli - 526239 | Train |
| 10603 | R | Train stops.                                                                                                                     |                                                                                    | OK |  | Amanda Ntuli - 526239 | Train |
| 10604 | I | BACKUP MODE TC2                                                                                                                  |                                                                                    | OK |  | Amanda Ntuli - 526239 | Train |
| 10605 | A | Active cab in TC2                                                                                                                |                                                                                    | OK |  | Amanda Ntuli - 526239 | Train |
| 10606 | A | Press the automatic start button 20S1 to prepare the train in high voltage                                                       |                                                                                    | OK |  | Amanda Ntuli - 526239 | Train |
| 10607 | R | After few seconds, the train is prepared in high voltage with HSCBs closed                                                       |                                                                                    | OK |  | Amanda Ntuli - 526239 | Train |
| 10608 | A | Put the backup mode switch 27S1 in Backup position                                                                               |                                                                                    | OK |  | Amanda Ntuli - 526239 | Train |

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| 10609 | A | Put the Driving Direction Switch to FORWARD position                                                                                               |                                                                                   | OK |  | Amanda Ntuli - 526239 | Train |
| 10610 | A | Hold pressed the "Master's Deadman Device (30A1.S4)" and move "Master Controller handle (30A1)" to initial "Traction" zone position.               |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10611 | I | Low tractive effort demand is requested.                                                                                                           |                                                                                   | OK |  | Amanda Ntuli - 526239 | Train |
| 10612 | R | Although the low tractive effort demand has been requested, the Train moves with a standard tractive demand                                        |                                                                                   | OK |  | Amanda Ntuli - 526239 | Train |
| 10613 | A | Move "Master Controller (30A1)" handle to extreme "Traction" zone position                                                                         |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10614 | R | Verify that there wasn't an impact on train movement and the tractive demand was maintained                                                        |                                                                                   | OK |  | Amanda Ntuli - 526239 | Train |
| 10615 | A | Release the Master's Deadman Device (30A1.S4) for more than 5 seconds                                                                              |                                                                                   | OK |  | Amanda Ntuli - 526239 | Train |
| 10616 | R | Train applies emergency brake                                                                                                                      |                                                                                   | OK |  | Amanda Ntuli - 526239 | Train |
| 10617 | I | The Deadman device must remain pressed to allow traction in backup mode, otherwise the emergency brake loop is opened when the timer relay expire. |                                                                                   | OK |  | Amanda Ntuli - 526239 | Train |
| 10618 | A | Set the master controller to "OFF" position.                                                                                                       |                                                                                   | OK |  | Amanda Ntuli - 526239 | Train |
| 10619 | A | Set the Driving Direction Switch to NEUTRAL and then to FORWARD position again                                                                     |                                                                                   | OK |  | Amanda Ntuli - 526239 | Train |
| 10620 | R | Emergency brake released on Train.                                                                                                                 |                                                                                   | OK |  | Amanda Ntuli - 526239 | Train |
| 10621 | I | From now on, when operating the master controller don't forget to maintain anyone of the deadman devices pressed.                                  |                                                                                   | OK |  | Amanda Ntuli - 526239 | Train |
| 10622 | A | Move "Master Controller (30A1)" handle to "Traction" zone position.                                                                                |                                                                                   | OK |  | Amanda Ntuli - 526239 | Train |
| 10623 | R | Train starts to move.                                                                                                                              |                                                                                   | OK |  | Amanda Ntuli - 526239 | Train |
| 10624 | A | Keeping the Master's handle within traction zone, check that the train is capable to reach 25km/h.                                                 |                                                                                   | OK |  | Amanda Ntuli - 526239 | Train |

|       |   |                                                                                                                                  |                                                                                   |    |  |                       |       |
|-------|---|----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|----|--|-----------------------|-------|
| 10625 | R | Verify that train reaches, but does not exceed the speed of 25km/h.                                                              |                                                                                   | OK |  | Amanda Ntuli - 526239 | Train |
| 10626 | I | On Backup mode, train speed is limited to 25km/h.                                                                                |                                                                                   | OK |  | Amanda Ntuli - 526239 | Train |
| 10627 | A | Move "Master Controller (30A1)" handle to initial "Brake" zone position.                                                         |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10628 | I | Low brake effort demand is requested.                                                                                            |                                                                                   | OK |  | Amanda Ntuli - 526239 | Train |
| 10629 | R | Verify that the train starts to brake with a standard brake effort.                                                              |                                                                                   | OK |  | Amanda Ntuli - 526239 | Train |
| 10630 | A | Move "Master Controller (30A1)" handle to extreme "Brake" zone position (stop before achieving "Emergency Brake" position).      |  | OK |  | Amanda Ntuli - 526239 | Train |
| 10631 | I | High brake effort demand is requested.                                                                                           |                                                                                   | OK |  | Amanda Ntuli - 526239 | Train |
| 10632 | R | Verify that there wasn't an impact on train movement, and the brake demand was maintained.                                       |                                                                                   | OK |  | Amanda Ntuli - 526239 | Train |
| 10633 | I | On Backup Mode, brake system considers a single brake demand and disregards master controller handle position within brake zone. |                                                                                   | OK |  | Amanda Ntuli - 526239 | Train |
| 10634 | R | Train stops.                                                                                                                     |                                                                                   | OK |  | Amanda Ntuli - 526239 | Train |
| 10635 | I | End of Test                                                                                                                      |                                                                                   | OK |  | Amanda Ntuli - 526239 | Train |



|                                                                               |                                                    |                             |
|-------------------------------------------------------------------------------|----------------------------------------------------|-----------------------------|
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## Section 3 – Report summaries

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### 3.1 Results status

| Test Instruction Sheet | Compliant | Incomplete | Non-compliant |
|------------------------|-----------|------------|---------------|
| Dynamic                | X         |            |               |

### 3.2 Tools used

| Function | Tool name | Tool number      | Next Calibration date |
|----------|-----------|------------------|-----------------------|
| Vehicle  | Equipment | Expected version | Version loaded        |
| Train    |           |                  |                       |