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| *TEST CASE DESCRIPTION* | | | | | | | |
|  | | Code | Version | | Title | | |
| Test Case | | 4.2.7 | 1 | | TSR management at level transition from L2 to L0+LZB. TSR in LZB area. | | |
|
| Baseline applicable | | Baseline 3 | | | | | |
| Test case author | | ADIF | | | | | |
| Test Objective(s) | | Verify that the EVC supervises the permitted speed for the TSR in the LZB area after performing the level transition from level 2 to level L0 + LZB. (TSR is announced from the level 2 area). | | | | | |
| Diagram | |  | | | | | |
| Starting conditions | | Level | | | | 2 | |
| Mode | | | | FS | |
| Train Speed (km/h) | | | | Maximum permitted speed | |
| Additional starting conditions | | | | The train is approaching the transition border to L0 + LZB.  A TSR is set in the LZB area close to the level transition. This TSR shall be set in both systems (LZB and ETCS). | |
| Sequence of the Test Case | | Checkpoints | | | | | |
| Step | Step description | Interfaces | | Description of what to be tested at the interface | | | OK? |
| 1 | The RBC sends a MA with EoA beyond the transition border. | DMI (O) | |  | | |  |
| DMI (I) | |  | | |  |
| JRU | | Message 3/33  Packet 15  Packet 21  Packet 27 | | |  |
| 2 (\*) | The train receives the level transition announcement via balise group or RBC. | DMI (O) | | Level 0 transition announcement | | |  |
| DMI (I) | |  | | |  |
| JRU | | (LRBG1)  (If received from RBC Message 3/24/33)  Packet 41 | | |  |
| D\_LEVELTR = D1  M\_LEVELTR = 0  L\_ACKLEVELTR = L1  DMI\_SYMB\_STATUS  LE06  START DISPLAYING TEXT MESSAGE (1) | | |
| 3 (\*) | The EVC receives TSR information located in the level L0 + LZB area. | DMI (O) | |  | | |  |
| DMI (I) | |  | | |  |
| JRU | | (LRBG2) Message 3/24/33  Packet 65   NID\_TSR= TSR1  V\_TSR = V1  L\_TSR= L2  D\_TSR= D2 > D1 | | |  |
| 4 (\*) | The train starts the braking curve to the TSR. | DMI (O) | | Braking curve with Vtarget = V1  Vtrain < Vpermitted | | |  |
| DMI (I) | |  | | |  |
| JRU | | V\_TRAIN < V\_PERMITTED V\_TARGET = V1 | | |  |
| 5 (\*) | The EVC runs the distance “D1-L1” at which the acknowledgement window of the transition to Level L0 + LZB is shown to the driver. | DMI (O) | | Level 0 acknowledgement is displayed | | |  |
| DMI (I) | |  | | |  |
| JRU | | Estimated front end=D1-L1-L\_DOUBTUNDER  DMI\_SYMB\_STATUS  LE07 | | |  |
| 6 (\*)  (\*\*) | The train passes over BKW/CDI with its rear End and the LZB onboard unit enters in “transmission mode”. | DMI (O) | |  | | |  |
| DMI (I) | |  | | |  |
| JRU | |  | | |  |
| 7 (\*) | The driver acknowledges the level transition. | DMI (O) | | Level 0 acknowledgement disappears | | |  |
| DMI (I) | | Driver acknowledges the level transition. | | |  |
| JRU | | M\_DRIVERACTIONS = 6  STOP DISPLAYINGTEXT MESSAGE (2) | | |  |
| 8 | The EVC runs the distance "D1" or the balise group with level transition order to L0 is read. | DMI (O) | |  | | |  |
| DMI (I) | |  | | |  |
| JRU | | (LRBG2)  Packet 41 | | |  |
| D\_LEVELTR =32767  M\_LEVELTR = 0 | | |
| 9 | The EVC switches to Level L0 + LZB (the permitted speed does not decrease). No abrupt decrease in the permitted speed takes place during the level transition. | DMI (O) | | Level 0 symbol  UN Symbol  Level 0 transition announcement disappears | | |  |
| DMI (I) | |  | | |  |
| JRU | | M\_LEVEL=0  M\_MODE=4 | | |  |
| DMI\_SYMB\_STATUS  LE01, MO16  STOP DISPLAYING TEXT MESSAGE (1) | | |
| 10 | The train reports its position to the RBC due to the level transition. | DMI (O) | |  | | |  |
| DMI (I) | |  | | |  |
| JRU | | Message 136  Packet 0 | | |  |
| M\_LEVEL=0 | | |
| 11 | The train reaches the TSR area when the max safe front end of the train has run the distance D2. | DMI (O) | | Vtrain ≤ V1 | | |  |
| DMI (I) | |  | | |  |
| JRU | | V\_PERMITTED = V1 V\_TRAIN ≤ V1  estimated front end = D2(LRBG2) - L\_DOUBTUNDER | | |  |
| 12 | The EVC runs the distance of the train from the transition border. | DMI (O) | |  | | |  |
| DMI (I) | |  | | |  |
| JRU | | Message 136  Packet 0/1 | | |  |
| estimated front end (LRBG2) = L\_TRAIN + L\_DOUBTOVER | | |
| 13 | The RBC sends an order to terminate the communication session and the termination of the communication session is performed. | DMI (O) | | Safe radio connection “Connection Up” symbol disappears | | |  |
| DMI (I) | |  | | |  |
| JRU | | Message 3/24/33  Packet 42 | | |  |
| Q\_RBC=0  Message 156  Message 39 | | |
| 14 (\*\*) | LZB system continues with transmission mode. | DMI (O) | |  | | |  |
| DMI (I) | |  | | |  |
| JRU | |  | | |  |
| 15 | The supervision of the TSR finishes when the min safe rear end of the train has reached the end of the TSR area. | DMI (O) | |  | | |  |
| DMI (I) | |  | | |  |
| JRU | | estimated front end = D2 (LRBG2) + L2 + L\_TRAIN + L\_DOUBTOVER V\_PERMITTED ≥ V1 | | |  |
| Final state | | Level | | 0 | | |  |
| Mode | | UN | | |  |
| Train Speed (km/h) | | NR | | |  |
| Other parameters | |  | | |  |
| Final Test Result | |  | | | | | |
| Field of Application | | Spain | | | | | |
| Briefing instructions | | It shall be verified that no abrupt decrease in the permitted speed takes place during the level transition, and that the TSR is correctly managed in the LZB area.  (\*) These steps could be executed in different order.  (\*\*) These steps should be checked in the LZB onboard unit | | | | | |