



**REPUBLIC OF TÜRKİYE
MINISTRY OF TRANSPORT AND INFRASTRUCTURE
DİREKTORATE GENERAL FOR REGULATION OF TRANSPORTATION
SERVICES**

NATIONAL RAILWAY VEHICLE RULES

**V.05
2025**

Revision Table				
Serial No.	Revision No.	Revision Date	Revision Place	Revision Content
1	V.03	19.09.2022	5. Type Change and Modification	Type Change and Modification description has been added.
2	V.04	24.10.2024	5. Type Change and Modification 6. Activities of ECM Certification Bodies 7. Inspection, Maintenance and Repair Activities 8. Conformity Assessment Criteria for Tram-Train Sets	- An AsBo report requirement has been regulated for changes that are not within the scope of the modification. - National rules regarding the activities of ECM certification bodies have been regulated. - National rules regarding the activities of organizations holding ECM and certificate of maintenance functions have been regulated. - National Rules regarding Conformity Assessment Criteria for Tram-Train Sets
3	V.05	22.04.2025	Provisional Article 1 - Type Approval and Registration Criteria for Electric Locomotives to be Used in National Transportation Activities	- National rules on Provisional Type Approval and Registration Criteria for Electric Locomotives to be Used in National Transportation Activities have been regulated.

EXPLANATION

These national rules have been prepared in accordance with the following legislation;

- COTIF Annex-F APTU Article 12,
- Article 477 of the Presidential Decree No. 1 on the Presidential Organization, published in the Official Gazette dated 10.07.2018 and numbered 30474,
- By-law on Railway Vehicles Type Approval,
- By-law on Railway Vehicles Registration and Record,
- By-law on Entities in Charge of Maintenance (ECM) Certification,
- Communiqué on Issuance of Entities in Charge of Maintenance (ECM) Certificate,
- Communiqué on the Activities of the Entities in Charge of Maintenance (ECM),
- Communiqué on Type Approval and Registration Criteria for Electric Locomotives to be Used in National Transportation Activities.

These national rules have been prepared taking into account the following EU legislation

- (EU) 2016/797, (EU) 2023/1695, (EU) 2018/868, (EU) 2019/776, (EU) 2019/779, (EU) 2018/545.

1. NATIONAL ON-BOARD SIGNALING SYSTEM

ID:	TR-NTR-RV-001	State:	Türkiye	Version:	0.0	From:	01.01.2022
Title:	Requirements and Test Procedure for Class B On-Board Signaling System						
Office responsible:	Directorate General for Regulation of Transport Services				Address:	GMK Bulvarı No:128/A 06570 Maltepe Cankaya ANKARA	
Communication:	0090 312 203 10 00						
Referenced COTIF/UTP/TSI:	COTIF Annex F APTU Article 12 COTIF Annex F APTU Annex “2 Classification of National Technical Rules, Group B”						
Referenced National Regulation:	By-law on the Preparation and Traffic of Trains ATS (Automatic Train Stop) Instruction						
National rule classification:	<input type="checkbox"/> Due to the difference between national legislation and the relevant requirements in UTP/ TSI <input checked="" type="checkbox"/> Due to additional requirements in national legislation that have no equivalent in UTP/ TSI <input type="checkbox"/> 'Open point' in UTP/ TSI						
Full description:	The requirements and test procedures for the type B local signalling system are described in Annex 1.						
Current applicable norms in Türkiye:	-						
Test specification for certificate of conformity:	Annex 1: Requirements and Test Procedure for Type B On-Board Signaling System						

2. EMC CHARACTERISTICS

ID:	TR-NTR-RV-002	State:	Türkiye	Version:	0.0	From:	01.01.2022
Title:	EMC Characteristics at the Railway Vehicle - Infrastructure Interface						
Office responsible:	Directorate General for Regulation of Transport Services				Address:	GMK Bulvarı No:128/A 06570 Maltepe Cankaya ANKARA	
Communication:	0090 312 203 10 00						
Referenced COTIF/UTP/TSI:	COTIF Annex F APTU Article 12 COTIF Annex F APTU Annex “2 Classification of National Technical Rules, Group A” UTP LOC&PAS Article 4.2.3.3.1.1, EMC LOC&PAS TSI Article 4.2.3.3.1, IV EMC						
Referenced National Regulation:	By-law on Railway Vehicles Type Approval						
National rule classification:	<input type="checkbox"/> Due to the difference between national legislation and the relevant requirements in UTP/ TSI <input checked="" type="checkbox"/> Due to additional requirements in national legislation that have no equivalent in UTP/ TSI <input type="checkbox"/> 'Open point' in UTP/TSI						
Full description:	These are the open issues in the ERA/ERTMS 033281 ver 4.0 document, which is included in article 4.2.3.3.1 of UTP/TSI titled Compatibility of railway vehicles with train detection systems.						
Current applicable norms in Türkiye:	TS EN 50238, TS EN 50121						
Test specification for certificate of conformity:	-						

3. RUNNING DYNAMIC BEHAVIOR

ID:	TR-NTR-RV-003	State:	Türkiye	Version:	0.0	From:	01.01.2022
Title:	Running Dynamic Behavior						
Office responsible:	Directorate General for Regulation of Transport Services				Address:	GMK Bulvarı No:128/A 06570 Maltepe Cankaya ANKARA	
Communication:	0090 312 203 10 00						
Referenced COTIF/UTP/TSI:	COTIF Annex F APTU Article 12 COTIF Annex F APTU Annex “2 Classification of National Technical Rules, Group A” UTP WAG Article 6.2.2.3 “Running Dynamic Behavior” WAG TSI Article 6.2.2.6 “Running Dynamic Behavior”						
Referenced National Regulation:	By-law on Railway Vehicles Type Approval						
National rule classification:	<input type="checkbox"/> Due to the difference between national legislation and the relevant requirements in UTP/ TSI <input type="checkbox"/> Due to additional requirements in national legislation that have no equivalent in UTP/ TSI <input checked="" type="checkbox"/> 'Open point' in UTP/TSI						
Full description:	In the article 6.2.2.3 of the UTP WAG and 6.2.2.6 of the WAG TSI titled “Running Dynamic Behavior” related to the subject, it is stated that the conditions specified in the EN 14363 standard for the tests carried out on the line cannot always be achieved due to reasons such as the geometric quality of the line, speed combinations, curves and lack of superelevation, etc. and it is stated that the conformity assessment conditions are open point in such cases. The tests to be carried out within the scope of on the line tests are explained in Annex 2.						
Current applicable norms in Türkiye:	-						
Test specification for certificate of conformity:	Annex 2: Wayside-Running Tests Conducted within a Distance of 3000 Km						

4. SAND CHARACTERISTICS

ID:	TR-NTR-RV-004	State:	Türkiye	Version:	0.0	From:	01.01.2022
Title:	Sand Characteristics						
Office responsible:	Directorate General for Regulation of Transport Services				Address:	GMK Bulvarı No:128/A 06570 Maltepe Cankaya ANKARA	
Communication:	0090 312 203 10 00						
Referenced COTIF/UTP/TSI:	COTIF Annex F APTU Article 12 COTIF Annex F APTU Annex “2 Classification of National Technical Rules, Group A” UTP LOC&PAS Article 4.2.3.3.1.1 “Isolation of Emissions” LOC&PAS TSI Article 4.2.3.3.1 “Isolation of Emissions”						
Referenced National Regulation:	By-law on Railway Vehicles Type Approval						
National rule classification:	<input type="checkbox"/> Due to the difference between national legislation and the relevant requirements in UTP/ TSI <input type="checkbox"/> Due to additional requirements in national legislation that have no equivalent in UTP/ TSI <input checked="" type="checkbox"/> 'Open point' in UTP/TSI						
Full description:	This topic is one of the open issues in the ERA/ERTMS 033281 ver 4.0 document, in article 4.2.3.3.1 titled Compatibility of UTP LOC&PAS and LOC&PAS TSI with railway vehicle train detection systems. Sand can form an insulating layer that increases the contact resistance between the wheel and the rail, and on lines equipped with rail circuits, there is a risk of trains not being detected. The relevant sand characteristics are given in Annex 3.						
Current applicable norms in Türkiye:							
Test specification for certificate of conformity:	Annex 3: Technical Characteristics of Sand						

5. TYPE CHANGE AND MODIFICATION

ID:	TR-NTR-RV-005	State:	Türkiye	Version:	0.0	From:	19.09.2022
Title:	Type Change and Modification						
Office responsible:	Directorate General for Regulation of Transport Services				Address:	GMK Bulvarı No:128/A 06570 Maltepe Cankaya ANKARA	
Communication:	0090 312 203 10 00						
Referenced COTIF/UTP/TSI:	COTIF Annex F APTU Article 12 COTIF Annex F APTU Annex “2 Classification of National Technical Rules, Group A” (EU) 2016/797 Article 21, paragraph 12 (Has been taken into consideration) (EU) 2018/545 Article 16, paragraphs 1 and 2 (Has been taken into consideration)						
Referenced National Regulation:	By-law on Railway Vehicles Type Approval						
National rule classification:	<input type="checkbox"/> Due to the difference between national legislation and the relevant requirements in UTP/ TSI <input type="checkbox"/> Due to additional requirements in national legislation that have no equivalent in UTP/ TSI <input checked="" type="checkbox"/> 'Open point' in UTP/TSI						
Full description:	Explanations on type change and modification issues and processes to be followed within the scope of the By-law on Railway Vehicles Type Approval and the By-law on Railway Vehicles Registration and Record.						
Current applicable norms in Türkiye:							
Test specification for certificate of conformity:	Annex 4: Type Change and Modification						

6. ACTIVITIES OF ECM CERTIFICATION BODIES

ID:	TR-NTR-RV-006	State:	Türkiye	Version:	0.0	From:	24.08.2024
Title:	National Rules for Issuing Certificates by ECM Certification Bodies						
Office responsible:	Directorate General for Regulation of Transport Services				Address:	GMK Bulvarı No:128/A 06570 Maltepe Cankaya ANKARA	
Communication:	0090 312 203 10 00						
Referenced COTIF/UTP/TSI:	COTIF Annex F APTU Article 12 COTIF Annex F APTU Annex "2 Classification of National Technical Rules, Group A" Second paragraph of ATMF Article 5 of Annex G of COTIF COTIF Annex G ATMF, Annex A ECM Regulation						
Referenced National Regulation:	Communiqué on Issuance of Certificate of Entities in Charge of Maintenance (ECM)						
National rule classification:	<input type="checkbox"/> Due to the difference between national legislation and the relevant requirements in UTP/ TSI <input checked="" type="checkbox"/> Due to additional requirements in national legislation that have no equivalent in UTP/ TSI <input type="checkbox"/> 'Open point' in UTP/TSI						
Full description:	The purpose of this Communiqué is to determine the national requirements regarding the issuance of entities in charge of maintenance (ECM) and maintenance function certificates by ECM certification bodies. This Communiqué covers the issuance of entities in charge of maintenance (ECM) and maintenance function certificates by ECM certification bodies to organizations established in Türkiye, the auditing of the activities of the certified organizations by the national safety authority (DGRTS) and the audits to be carried out by the National Accreditation Agency (TÜRKAK).						
Current applicable norms in Türkiye:							
Test specification for certificate of conformity:	Annex 5: Communiqué on Issuance of Certificate of Entities in Charge of Maintenance (ECM)						

7. INSPECTION, MAINTENANCE AND REPAIR ACTIVITIES

ID:	TR-NTR-RV-007	State:	Türkiye	Version:	0.0	From:	02.08.2024
Title:	National Rules for the Activities of Organizations with ECM and Maintenance Functions Certificates						
Office responsible:	Directorate General for Regulation of Transport Services				Address:	GMK Bulvarı No:128/A 06570 Maltepe Cankaya ANKARA	
Communication:	0090 312 203 10 00						
Referenced COTIF/UTP/TSI:	COTIF Annex F APTU Article 12 COTIF Annex F APTU Annex “2 Classification of National Technical Rules, Group A” COTIF Annex G ATMF, Annex A ECM Regulation						
Referenced National Regulation:	Communiqué on the Activities of the Entities in Charge of Maintenance (ECM)						
National rule classification:	<input type="checkbox"/> Due to the difference between national legislation and the relevant requirements in UTP/ TSI <input checked="" type="checkbox"/> Due to additional requirements in national legislation that have no equivalent in UTP/ TSI <input type="checkbox"/> 'Open point' in UTP/TSI						
Full description:	The purpose of this Communiqué is to determine the national requirements regarding the activities of organizations holding ECM and maintenance function certificates. This Communiqué covers the activities of organizations holding ECM and maintenance function certificates regarding the maintenance, repair and inspection of railway vehicles used in the railway infrastructure network.						
Current applicable norms in Türkiye:							
Test specification for certificate of conformity:	Annex 6: Communiqué on the Activities of the Entities in Charge of Maintenance (ECM)						

8. CONFORMITY ASSESSMENT CRITERIA FOR TRAM-TRAIN SETS

ID:	TR-NTR-RV-008	State:	Türkiye	Version:	0.0	From:	06.08.2024
Title:	National Rules on Conformity Assessment Criteria for Tram-Train Sets						
Office responsible:	Directorate General for Regulation of Transport Services				Address:	GMK Bulvarı No:128/A 06570 Maltepe Cankaya ANKARA	
Communication:	0090 312 203 10 00						
Referenced COTIF/UTP/TSI:	COTIF Annex F APTU Article 12 COTIF Annex F APTU Annex "2 Classification of National Technical Rules, Group A" (EU) 2016/797 Article 1, paragraph 5 (Has been taken into consideration)						
Referenced National Regulation:	Communiqué on Type Approval and Registration (Vehicle Authorization) Criteria for Tram-Train Sets (not intend to use for international transportation) to be Used on Gaziray Line and Other Suburban Lines with Compatible Interfaces.						
National rule classification:	<input type="checkbox"/> Due to the difference between national legislation and the relevant requirements in UTP/ TSI <input type="checkbox"/> Due to additional requirements in national legislation that have no equivalent in UTP/ TSI <input checked="" type="checkbox"/> 'Open point' in UTP/TSI						
Full description:	The purpose of this Communiqué is to determine the technical safety and interface requirements for ensuring the safety of tram trains and their technical compatibility with the railway infrastructure to be taken as assessment criteria for the type approval and registration of tram train sets to be operated on the Gaziray line.						
Current applicable norms in Türkiye:							
Test specification for certificate of conformity:	Annex 7: Communiqué on Type Approval and Registration (Vehicle Authorization) Criteria for Tram-Train Sets (not intend to use for international transportation) to be Used on Gaziray Line and Other Suburban Lines with Compatible Interfaces.						

ID:	TR-NTR-RV-P1	State:	Türkiye	Version:	0.0	From:	09.04.2025
Title:		National Rules on Type Approval and Registration Criteria for Electric Locomotives to be Used in National Transportation Activities					
Office responsible:		Directorate General for Regulation of Transport Services			Address:	GMK Bulvarı No:128/A 06570 Maltepe Cankaya ANKARA	
Communication:		0090 312 203 10 00					
Referenced COTIF/UTP/TSI:							
Referenced National Regulation:		By-law on Railway Vehicles Type Approval, Provisional Article 4 By-law on Railway Vehicles Registration and Record, Provisional Article 11 Communiqué on Type Approval and Registration Criteria for Electric Locomotives to be Used in National Transportation Activities					
National rule classification:		<input type="checkbox"/> Due to the difference between national legislation and the relevant requirements in UTP/ TSI <input type="checkbox"/> Due to additional requirements in national legislation that have no equivalent in UTP/ TSI <input type="checkbox"/> 'Open point' in UTP/TSI					
Full description:		The purpose of this Communiqué is to determine the technical safety conditions and the evaluation criteria to ensure compatibility with the railway infrastructure to be taken as basis for the provisional type approval and registration of electric locomotives to be used in national transportation activities.					
Current applicable norms in Türkiye:							
Test specification for certificate of conformity:							

ANNEX 1

REQUIREMENTS AND TEST PROCEDURE FOR TYPE B ON-BOARD SIGNALING SYSTEM

CONDITIONS FOR AUTOMATIC TRAIN STOPPING SYSTEM (ATS)

1) SIGNALING EQUIPMENT

The ATS System generally consists of two main parts. The first is the on-line equipment that forms the fixed facility part of the system. These are passive resonant circuit road magnets. The second is the equipment on the vehicle.

a) On-line signaling equipment

The ATS system uses 2 types of automatic braking systems, namely the Western and Eastern types. ATS systems are passively operating on the line and placed approximately 300 m in front of each input signal, with 100.5 kHz in the Western type and 500 Hz in the Eastern type, and with 74.5/81 kHz in the Western type and 1000/2000 Hz in the Eastern type, placed at each input, output, KBS, automatic block, approach and protection signal.

On-Line Signaling Equipment Test Procedure

- Each ATS Roadside magnet will be tested for each frequency (74.5 kHz/81 kHz/100.5 kHz for Western and Eastern Type, 500 Hz/1000 Hz/2000 Hz for Eastern Type) with appropriate measuring instruments (Balismester suitable for Western and Eastern Type). The measurement result will be in accordance with the limit values on the measuring instruments.
- Dynamic tests will be performed after the measurement results made with the test device are normal.
- If it is to be received within the signaling system, all ATS equipment along the route will be dynamically tested according to all color notifications.
- In cases where only on-line equipment is to be delivered, 2 pieces of each magnet type (2 pieces of 74.5/100.5 kHz magnets and 2 pieces of 81 kHz magnets for the Western type, 2 pieces of 1000/2000 Hz magnets and 2 pieces of 500 Hz magnet for the Eastern type) will be connected to the sample line and dynamic testing will be carried out for the controlled speeds (40 km/h, 65 km/h, Livre speed and red stop notification).
- If any problem occurs, the tests will be repeated.

Speed restrictions applied by the ATS system according to the color notifications of the on-line signal are given in the tables below.

WESTERN TYPE

SIGNAL NOTIFICATION			MANEUVER	MANDATORY SPEED
BLOCK	ENTRANCE	EXIT		
Green	Green Yellow-Green	Green Green Flash Yellow-Green	-	Free
Yellow	Yellow Yellow-Yellow Yellow-Red	Yellow Yellow Flash Yellow-Yellow Yellow-Red Yellow-Red Flash	Red-Green Flash Red-Green	65 km/h (74.5 kHz)

SIGNAL NOTIFICATION			MANEUVER	MANDATORY SPEED
BLOCK	ENTRANCE	EXIT		
	Entrance 300 meters before the magnet signal Red Yellow-Red	-	Red-Green	40 km/h (81kHz)
Red	Red	Red Red Flash	-	0 km/h (100.5 kHz)

EASTERN TYPE

SIGNAL NOTIFICATION			MANEUVER	MANDATORY SPEED
BLOCK	ENTRANCE	EXIT		
Green	Green	Green Green Flash	-	Free
Yellow	Yellow Yellow-Yellow Yellow-Green Yellow-Red	Yellow Yellow-Green Yellow-Yellow Yellow-Red Yellow Flash Yellow-Red Flash	Red-Green Flash Red-Green	65 km/h (1000Hz)
	Entrance 300 meters before the magnet signal Red Yellow Yellow-Red Yellow-Yellow Yellow-Green	-	Red-Green	40 km/h (500Hz)
Red	Red	Red	-	0 km/h (2000Hz)

b) On-Board Signaling Equipment

Diesel, electric machines, EMU and DMU train sets, pose cars and catenary cars, located in ATS machinery equipment, actively working Western type 81 kHz, 74.5/100.5 kHz, Eastern type 500 Hz, 1000/2000 Hz it works on the principle that the magnet gives information to the relay logic circuits based on the current drop.

The transition from one ATS system to another on the railway lines will be automatically detected by the on-board ATS system and the system will continue to operate uninterruptedly and without error. The on-board ATS equipment in the control cabin wagons on both sides will be independent of each other.

In case of single or multiple operation, only the ATS equipment located in the cabin in the direction of travel of the train set will be active; the ATS equipment in the other cabins will be passive.

Receiver system : Resonance due to Ziehen effect

Identification system : Distinctive signal identification

Signals :

74.5 kHz in Western type, 1000 Hz in Eastern type : 65 km/h speed control

81 kHz in Western type, 500 Hz in Eastern type : 40 km/h speed control

100.5 kHz in Western type, 2000 Hz in Eastern type : Unconditional automatic braking

Receiver Response : Min. 5 ms

Maximum Train Speed : 120 km/h

On-Board Signaling Equipment Static Test Procedure

<u>Transaction Number</u>	<u>Process</u>	<u>Observation</u>	<u>Conclusion</u>
1	Provide the connection between Train Engineer Screen with ATS Main Control Unit.		
2	Turn the Forward, Reverse, Speed65, Speed40, Speed12 switches on the Test Setup into passive mode and the Pressure, Brake, System On/Off switches into active mode.		
3	Make the East Type Forward Magnet, East Type Reverse Magnet, West Type Forward Magnet, West Type Reverse Magnet connections with the ATS Main Control Unit.		
4	Apply the appropriate ATS voltage (24VDC, 72VDC, 110VDC) to the system using the Test Connector, check that Train Engineer Screen unit is energized.		
5	From the Train Engineer Screen Maintenance Software menu; <u>Working Mode:</u> , <u>Speedometer:</u> <u>Wheel Diameter:</u> Suitable for Locomotive Type <u>Check Valve:</u> : Yes/ No, <u>Recorder:</u> <u>GPS Mode :</u> : Yes/ No, <u>Opening Mode :</u> Automatic, <u>Sound Level:</u> <u>Lighting:</u> <u>Language:</u> Turkish, <u>Boden Lubrication Menu:</u> Active / Passive		
6	Activate the 12 km/h Speed Position switch		

7	<p>Pass the speed panel warning magnet over the Eastern Type Forward Magnet. When the speed is exceeded by 40 km/h over the magnet, automatic braking occurs. When the speed is below 40 km/h over the magnet, the words SPEED PANEL and 40 km/h. SPEED CONTROL ACTIVE should appear on the Train Engineer Screen. If the speed is increased to 40 km/h, automatic braking occurs.</p>		
8	<p>When you press the RELEASE button, the text should disappear. When you press each release icon, see that the signal lamp showing the Speed Free information lights up, stays on for two seconds and goes off.</p>		
9	<p>Pass the yellow warning magnet over the Eastern Type Forward Magnet. The Train Driver Screen should display the words ATS WARNING and WAIT FOR WARNING CONFIRMATION BUTTON along with an audible warning. When the WARNING CONFIRMATION button is pressed, the sound should stop and the words KEEP SPEED UNDER 65 km/h should appear. After 20 seconds, if the speed is over 12 km/h, the RELEASE button should appear. When the RELEASE button is pressed, the system should return to its previous state.</p> <p>See that the signal lamp indicating the Yellow Magnet Passed information lights up whenever a magnet is detected and goes off when the confirmation button is pressed.</p>		
10	<p>Pass the red warning magnet over the Eastern Type Forward Magnet. The Train Engineer Screen should display the words BRAKE IS BEING APPLIED along with an audible warning.</p> <p>See that the signal lamp indicating the Red Magnet Passed information lights up whenever a magnet is detected and remains lit for two seconds and then goes off.</p>		

11	Deactivate the pressure switch. The Train Driver Screen should display SPEED EXPECTED TO FALL BELOW 12 km/h. Set the speed information to 0 km/h (zero). See that the pressure icon on the Train Driver Screen has disappeared. See the text PRESSURE EXPECTED TO RISE. After the relevant signal lamp indicating BRAKE information lights up, reactivate the pressure switch. After 10 seconds, the text RE-REGULATION should appear on the screen. When you press the Re-Regulation button again, the re-regulation text on the screen will disappear.		
12	Generate speed information above 12 km/h. Pass the speed panel warning magnet over the Western Type Forward Magnet. The text SPEED PANEL and 40 km/h SPEED CONTROL ACTIVE should appear on the Train Engineer Screen. The text should disappear when the Release button is pressed. The functions related to the 40 km/h speed control at the remote ATS point in the Western Type ATS system are the same as in the Eastern Type ATS system and the operations are as explained in "Operation No 7".		
13	Generate speed information above 12 km/h. Pass the yellow warning magnet over the Western Type Forward Magnet. The Train Driver Screen should display the words ATS WARNING and WAIT FOR WARNING CONFIRMATION BUTTON along with an audible warning. If the WARNING CONFIRMATION button is not pressed within 10 seconds, automatic braking will occur. When the WARNING CONFIRMATION button is pressed within 10 seconds, the sound should stop and the words KEEP SPEED UNDER 65 km/h should appear. At the end of 20 seconds, if the speed is below 65 km/h and above 12 km/h, the RELEASE button should appear. If the speed is increased above 65 km/h without pressing the RELEASE button, automatic braking will occur. When the RELEASE button is pressed, the system should return to its previous state.		
14	Pass the red warning magnet over the Western Type Forward Magnet. The Train Engineer Screen should display the words BRAKE IS		

	BEING APPLIED along with an audible warning.		
15	Deactivate the pressure switch. The Train Driver Screen should show SPEED EXPECTED TO FALL BELOW 12km/h. Set the speed information to 0 (zero). See that the pressure icon on the Train Driver Screen has disappeared. See the text PRESSURE EXPECTED TO RISE. After the relevant signal lamp indicating BRAKE information lights up, reactivate the pressure switch. After 10 seconds, the text RE-REGULATION should appear on the screen. When you press the Re-Regulation button again, the re-regulation text on the screen will disappear.		
16	Press the Permitted Pass Button in Red. END PASSAGE button should appear on the Train Engineer Screen and an audible warning should be received. When the END PASSAGE button is pressed, the audible warning will stop.		
17			
18	The signal generated by the Speed Detection Unit must be tested for correct detection by the ATS. For this purpose, the test and control procedure given by the manufacturer must be followed.		
19	On the Train Engineer screen, generate the Speed Board warning until the speed reaches 17. Then, on the Train Engineer screen, observe that the brake situation occurs until the speed reaches 43.		
20	On the Train Engineer screen, give a Yellow warning until the speed reaches 17. On the Train Engineer screen, reduce the speed until the speed reaches 8 and observe that the brake situation occurs.		
21	<p>Brake Signal Light Test</p> <p>The relevant signal lamp indicating BRAKE information is illuminated.</p> <p>Repeat the step 9 with the brake switch in the On position to ensure the Auto Brake status is activated.</p> <p>Observe that the relevant signal lamp indicating BRAKE information goes off.</p>		
22	<p>Nippon Signal Lamp Test</p> <p>Select Automatic Mode operation from the Train Engineer Display unit.</p>		

	<p>Observe the lamp indicating the active information of the Western Type Magnet is on. Select the Eastern Signal Mode from Train Driver Display unit.</p> <p>Observe the lamp indicating the active information of the Western Type Magnet is off.</p>		
23	<p>SEL Signal Lamp Test</p> <p>Select Automatic Mode operation from the Train Engineer Screen unit .</p> <p>Observe the lamp indicating the active information of the Eastern Type Magnet is on .</p> <p>Select the Western Signal Mode from Train Driver Display unit.</p> <p>Observe the lamp indicating the active information of the Eastern Type Magnet is off .</p>		
	ATS Recorder Interface Tests		
24			
25	Turn on the ATS system and wait until the System Screen appears. Measure the supply voltage value with a multimeter.		
26	<p>Connect (-) and (+) ends of the multimeter to the pin of the Main Control Unit that indicates the “Speed Panel Magnet” information. Put the multimeter in voltmeter mode.</p> <p>Measure with the multimeter that there is no voltage. (A negative value may be seen because the pin remains in the Float state. This is an acceptable situation.)</p>		
27	<p>Generate Speed Dashboard alert</p> <p>Measure the supply voltage from the multimeter.</p>		
28	<p>Connect (-) and (+) ends of the multimeter to the pins of the Main Control Unit that indicates the “Yellow Magnet Passed” information. Put the multimeter in voltmeter mode.</p> <p>Measure with the multimeter that there is no voltage. (A negative value may be seen because the pin remains in the Float state. This is an acceptable situation.)</p>		
29	<p>Generate yellow alert</p> <p>Measure the supply voltage from the multimeter.</p>		
30	<p>Connect (-) and (+) ends of the multimeter to the pins of the Main Control Unit that indicates the “Speed Free” information. Put the multimeter in the voltmeter mode.</p> <p>Measure with the multimeter that there is no voltage. (A negative value may be seen because</p>		

	the pin remains in the Float state. This is an acceptable situation.)		
31	Set speed input to 12-40 km/h. Generate speed board warning. Press release button. Measure the supply voltage from the multimeter.		
32	Connect (-) and (+) ends of the multimeter to the pins of the Main Control Unit that indicates the "Red Magnet Passed" information. Put the multimeter in voltmeter mode. Measure with the multimeter that there is no voltage. (A negative value may be seen because the pin remains in the Float state. This is an acceptable situation.)		
33	Generate red alert Measure the supply voltage from the multimeter.		
34	Connect (-) and (+) ends of the multimeter to the pins of the Main Control Unit that indicates the "Brake is Done" information. Put the multimeter in voltmeter mode. Measure with the multimeter that there is no voltage. (A negative value may be seen because the pin remains in the Float state. This is an acceptable situation.)		
35	Create automatic brake state Measure the supply voltage from the multimeter.		
36	Make sure the Main Control unit brake switch is in the On position. Observe the lamps showing the "Brake" and "SPEED 65" information on the relevant indicator card are on. Turn the Brake Switch to the Off position and observe that the signal lamp indicating the "BRAKE" information remains on. Observe that the signal lamp indicating the "SPEED 65" information is off.		
37	LTM Antenna Test It should be seen that the information required to be entered from the Maintenance Software menu on the Train Engineer Screen has been entered. For example; <u>Working Mode :</u> , <u>Speedometer:</u> <u>Wheel Diameter:</u> Suitable for Locomotive Type <u>Check Valve:</u> Yes/ No, <u>Recorder:</u>		

	<u>GPS Mode : Yes / No ,</u> <u>Opening Mode : Automatic,</u> <u>Sound Level:</u> <u>Lighting:</u> <u>Language: Turkish,</u> <u>Boden Lubrication Menu: Active / Passive</u>		
38	Connect the Antenna Unit. After 10 seconds, observe that the LTM text disappears on the Train Engineer Display. Note: This text should not disappear if the antenna unit is not placed in the correct position.		
39	Observe that the eastern type magnet has stopped driving.		
40	Pass the red warning magnet over the Eastern Type Forward Magnet. Observe that the signal is not detected.		
41	Turn off the fuse of the ATS main control unit.		
<u>Additional static testing procedures established by manufacturers may be implemented with the approval of the designated body responsible for the conformity assessment activity.</u>			

On-Board Signaling Equipment Dynamic Test Procedure

- The line to be dynamically tested will be at least 2 stations apart.
- Stations with at least 3 blocks between two stations will be selected.
- The test will be carried out on the entire line in both directions for both double-cab and single-cab vehicles.
- Also at least 2 magnets along the road will be tested for each speed control (40 km/h, 65 km/h, livre speed and stopping) by simulating.
- Dynamic tests will be performed at speeds ranging from 12-140 km/h.

ANNEX 2

WAYSIDE-RUNNING TESTS CONDUCTED WITHIN A DISTANCE OF 3000 KM

Before the serial production is started by the manufacturer, the two prototype freight wagons are checked technically according to their specifications and their writing and markings are completed, and after the general checks are made, the prototype wagons are subjected to a 3000 km operational test, one fully loaded and the other empty, with the word TEST WAGON written on them. During the operational test, the status of the wagons at the departure and arrival stations of the trains is checked by the railway train operator's wagon technicians according to the GCU (General Contract of Use for Wagons). If any negativity is detected, a report on the nonconformity is prepared by the appointed institution. Technical controls of the prototype wagons whose operational tests are completed are carried out in the factory and if there is no negativity, mass production is started.

ANNEX 3

TECHNICAL CHARACTERISTICS OF SAND

1) Chemical Properties (by Weight):

SiO₂ = Min. 90%

CaO = Max. 2%

Fe₂O₃ = Max.% 1.5

Clay = Max.% 1

Note: Corrosive salts in chloride form will contain a maximum of 50 milligrams in 1 Kilogram of sand.

2) Physical Properties:

2.1- Grain Size

Maximum : 2 mm

Minimum : 0.5 mm

2.2- The weight percentage distribution of sand will be as follows.

Sieve Size (DIN 4188)	Weight % Distribution
0.50-0.80 mm.	Max . 5%
0.80-1.5mm.	Min. 90%
1.5-2.0 mm.	Max . 5%

2.3- Grain Shape:

The purchased skating sand will be used in locomotives and trains by spraying it onto the rails from a pipe with compressed air. The grain shape of the sand will be as angular as possible so that the sand grains do not roll off the rails and fall outside the rail surface during spraying.

2.4- The skating sand shall not contain foreign substances such as dust, soil etc.

2.5- The moisture content of the skating sand will be at most 1.5% by weight.

2.6 - Since the moisture and clay amounts in the sand to be purchased ready for use must be at most 2.5% by weight, the sand will be washed and dried after being removed from the quarry.

ANNEX 4

TYPE CHANGE AND MODIFICATION

	Explanation
Changes to be accepted within the scope of modification	<p>In a railway vehicle that already has a type approval and/or registration; changes made during the lifetime of the vehicle, changes that alter the basic design features of the vehicle and provide an additional function to the railway vehicle are changes within the scope of modification. Requires registration renewal.</p> <p>The changes set out in Article 21, paragraph 12 of Directive (EU) 2016/797 will be considered as modifications and will require renewal of the registration certificate.</p>
Changes not included in the modification	<p>In a railway vehicle that already has type approval and/or registration; changes made during the lifetime of the vehicle, which do not bring an additional function to the vehicle, although they bring changes in the basic design features of the vehicle, changes made only to make the vehicle more convenient in the current area of use are changes that are not within the scope of modification. Registration does not require renewal*.</p> <ol style="list-style-type: none"> 1. DeBo determines and declares that the change is not a modification. 2. The technical conformity of the change, the productions required for the change, update of maintenance activities are under the responsibility of the ECM company. During the design and planning phase of the change; the ECM company prepares a technical explanation report that includes the purpose, scope, design and manufacturing plans of the planned change, updating of maintenance activities and risk analysis and measures taken for the risks identified. 3. The content of the ECM company's report and the scope of the AsBo report are confirmed by DeBo. DeBo prepares its report on the compliance of the scope of the ECM company's and AsBo reports with the proposed change and national requirements, together with its determination that the proposed change is not within the scope of the modification. 4. The reports of DeBo, AsBo and ECM company are submitted to the Ministry for approval. With the approval of the Ministry, the change is initiated. 5. After the change is completed, the reports of DeBo, AsBo and ECM company are updated for updating the registration certificate and applied to the Ministry for registration update.
Type change	<p>In a railway vehicle that already has type approval and/or registration; changes to be made to change the area of use of the vehicle constitute a type change. Requires renewal of Type Approval and Registration.</p>

*Article 16, paragraphs 1 and 2, as well as Article 15, paragraph 1, subparagraph (c) of Implementing Regulation (EU) 2018/545 explain the changes that do not require registration renewal. Accordingly, changes that do not fall into the categories under Article 21, paragraph 12 of Directive (EU) 2016/797 do not require registration renewal.

ANNEX 5

COMMUNIQUE ON ISSUANCE OF CERTIFICATE OF ENTITIES IN CHARGE OF MAINTENANCE (ECM)

CHAPTER ONE

Preliminary Provisions

Objective

ARTICLE 1 - (1) The objective of this Communiqué is to determine the procedures and the principles regarding the issuance of entities in charge of maintenance (ECM) and maintenance function certificates by ECM certification bodies.

Scope

ARTICLE 2 - (1) This Communiqué covers the issuance of entities in charge of maintenance (ECM) and maintenance function certificates by ECM certification bodies, the audit of the activities of the certified organizations and the audits to be carried out by the Accreditation Body.

Legal Basis

ARTICLE 3 - (1) This Communiqué has been prepared based on the subitem (j) of the first item of Article 477 of the Presidential Decree No. 1 on the Presidential Organization, the second item of Article 5 of Annex G ATMF of the Protocol dated 3 June 1999 Amending the Convention Concerning International Carriage by Rail (COTIF) dated 9 May 1980, which was approved for ratification by Law No. 5408 dated 6/10/2005, and the ECM Regulation in Annex A of ATMF, the By-law on Railway Vehicles Registration and Record published in the Official Gazette dated 16/7/2015 and numbered 29418, and the By-law on Entities in Charge of Maintenance (ECM) Certification published in the Official Gazette dated 1/12/2023 and numbered 32386.

Definitions and abbreviations

ARTICLE 4 - (1) In this Communiqué;

- a) Accreditation Agency: Turkish Accreditation Agency (TÜRKAK),
- b) Vehicle owner: The legal entity that has the ownership or right to use a railway vehicle and applies for the issuance of an ECM Declaration,
- c) ATMF: Uniform rules for the technical acceptance of railway equipment used in international traffic,
- ç) Ministry: Ministry of Transport and Infrastructure,
- d) Maintenance functions: Management, maintenance development, fleet maintenance management or maintenance supply functions of the entities in charge of maintenance,
- e) Entities in Charge of Maintenance (ECM): Organization certified according to the COTIF Annex G ATMF, Annex A ECM Regulation for the maintenance of railway vehicles and published in ERADIS,
- f) COTIF: Convention Concerning International Carriage by Rail,
- g) Railway vehicle: All kinds of pulling and hauled vehicles and train sets, including line construction, maintenance, repair, measuring machines and control vehicles,
- ğ) ECM Declaration: A document issued by the entities in charge of maintenance (ECM) declaring that a railway vehicle can be operated in the national railway infrastructure network without adversely affecting navigation, that its maintenance and inspections have been carried out in accordance with national and international legislation, guides and the vehicle's maintenance file, and that the vehicle is kept safe in the railway system throughout its usage period,
- h) ECM certification body: The body authorized by the Directorate General and issuing ECM and maintenance function certificates,
- ı) ERADIS: European Railway Agency safety and interoperability database,
- i) Directorate General: Directorate General for Regulation of Transport Services (DGRTS),
- j) National Railway Rules: Rules published by the Ministry (DGRTS), including national legislation, containing technical and administrative provisions regarding railway infrastructures, vehicles and safety.

expresses .

CHAPTER TWO

The Procedures and The Principles Regarding the Issuance of Entities in Charge of Maintenance (ECM) Certificate

Issuance of certificates

ARTICLE 5 - (1) Before the entities in charge of maintenance (ECM) or maintenance function certificate is issued, after all inspection and audit work is completed with a result suitable for the issuance of the certificate and after a decision is made to issue the certificate, the information and documents regarding the competence of the organization to be issued the certificate and the draft certificate are submitted to the Directorate General for approval and the approved certificates are issued.

(2) If the entities in charge of maintenance (ECM) or the organization applying for the maintenance function certificate does not have the ability to perform all maintenance, inspection or repair work of any of the vehicle types included in the certificate, the activities that it can perform by outsourcing and the activities that it cannot perform are specified in the "6. Additional Information" section of the entities in charge of maintenance (ECM) certificate and in the "6. Maintenance Functions" section of the maintenance function certificate. Existing certificates are updated accordingly within the scope of routine inspection activities.

(3) In order to avoid any disruption in the implementation of the provisions in the second item of Article 9 of ATMF Annex A ECM Regulation of Annex G of COTIF 1999, which states that "The entity in charge of maintenance shall demonstrate to the certification body how it complies with all the requirements and assessment criteria set out in Annex II with regard to the functions it decided to outsource." and in the third item, which states that "The entity in charge of maintenance shall remain responsible for the outcome of the outsourced maintenance activities and shall establish a system to monitor their performance (compliance with the relevant national and international legislation, maintenance file, procedures of the service receiving ECM, safe and efficient execution, etc.)." ECM certification bodies should;

a) It is defined in the procedures of the organizations related to outsourcing that the compliance of the organization to be served with the relevant legislation will be proved to the ECM certification body at the stage of deciding to outsource the service procurement to which they issue certificates and that the service procurement will be started after receiving confirmation of compliance from the ECM certification body,

b) Details of the digital or administrative system to be established to monitor the activities of the organization from which the service will be received are explained, checked and confirmed.

(4) ECM certification bodies check and confirm that the annual maintenance reports of the entity in charge of maintenance (ECM) for which they issue certificates and organisations with maintenance function certificates are prepared in accordance with national and international legislation and guidelines and submitted to the Directorate General within January of every year.

Notification

ARTICLE 6 - (1) If ECM certification bodies detect that the activities of the organizations they issue certificates are not carried out in accordance with this Communiqué and the relevant national and international legislation, they shall immediately suspend or cancel the certificate they issue, partially or completely, in accordance with the scope of the detected non-conformity, to the extent that the non-conformity affects railway safety.

(2) ECM certification bodies shall report to the Directorate General the information on railway vehicles that have been serviced within the scope of the activities subject to the detected non-conformity.

Audit

ARTICLE 7 - (1) ECM certification bodies shall inspect whether the entities in charge of maintenance (ECM) for which they issue certificates and the organizations holding maintenance function certificates have updated and implemented their procedures in line with this Communiqué and instructions, within the scope of interim audits, and shall submit a copy of the audit report to the Directorate General.

(2) If a major deficiency that directly risks railway safety is detected during the audits conducted by the Directorate General on the entities in charge of maintenance (ECM) and organizations holding maintenance function certificates, the organization's certificate is suspended. If the deficiency is not corrected within a reasonable period of time, not exceeding six months, given by the Directorate General to correct the deficiency, the certificate is cancelled. The processes of suspending the certificate, auditing the correction of the deficiency and cancellation of the certificate are carried out under the responsibility of the ECM certification body and the Directorate General is informed about the process.

(3) If a minor deficiency that does not directly risks railway safety is detected during the audits conducted by the Directorate General on the entities in charge of maintenance (ECM) and organizations holding maintenance function certificate, the certificate will be suspended if the deficiency is not corrected within a reasonable period of time not exceeding six months to be given by the Directorate General. In this case, the ECM certification body will give another reasonable period of time not exceeding six months to correct the deficiency, and if the deficiency is not corrected at the end of this period, the certificate will be cancelled. The processes of suspension of the certificate, auditing the correction of the deficiency and cancellation of the certificate are carried out under the responsibility of the ECM certification body and the Directorate General is informed about the process.

(4) If ECM certification bodies detect a major or minor deficiency that directly or indirectly puts railway safety at risk in any activity of the organization for which the certificate is issued, they shall take the necessary measures in line with the principles explained in the second and third paragraphs to ensure railway safety and report the information of the railway vehicles that have been served with the activities subject to the detected major deficiency to the Directorate General.

(5) Suspension or cancellation of the certificate due to deficiencies detected may be limited to the scope of activity to which the deficiency is subject. In this case, the scope of activity of the ECM certificate to which the deficiency is subject is suspended or canceled in accordance with the second, third and fourth items of this article.

(6) ECM certification bodies shall submit for the approval of the Directorate General the removal of the suspended scope or certificate by explaining the adequate and proper measures taken to eliminate the identified root cause, together with the root cause analysis prepared by the organization whose certificate scope has been partially or completely suspended due to a defect detected in the activities of the organizations to which they issue certificates.

(7) After reviewing the report on the root cause analysis and the measures taken, the Directorate General approves the revalidation of suspended scope of the certificate or the suspended certificate if the works carried out to eliminate the root cause is adequate and proper.

(8) A copy of the accreditation audit report/reports prepared by the Accreditation Agency during its audits is submitted to the Directorate General by the ECM certification body.

CHAPTER THREE

Miscellaneous and Final Provisions

Other provisions

ARTICLE 8 - (1) The procedures and the principles set out in this Communiqué as well as the procedures and the principles set out in the relevant national and international legislation shall apply to the activities of ECM certification bodies.

(2) The procedures and the principles determined within the scope of this Communiqué shall be added to the National Railway Vehicle Rules in accordance with the second item of Article 12 of Annex F APTU of the COTIF and published by the Directorate General.

Authority

ARTICLE 9 - (1) The Directorate General is authorized to audit all activities carried out in line with this Communiqué and the relevant national and international legislation.

(2) The Accreditation Agency is authorized to audit whether the activities of ECM certification bodies are carried out in accordance with this Communiqué and the relevant national and international legislation.

(3) ECM certification bodies are authorized and responsible for auditing whether the activities of the entities in charge of maintenance (ECM) and the organizations for which they issue maintenance function certificates are carried out in accordance with this Communiqué and the relevant national and international legislation.

Entry into force

ARTICLE 10 - (1) This Communiqué shall enter into force on the date of its publication.

Implementation

ARTICLE 11 - (1) This Communiqué shall be implemented by The Minister of Transport and Infrastructure.

ANNEX 6

COMMUNIQUE ON THE ACTIVITIES OF THE ENTITIES IN CHARGE OF MAINTENANCE (ECM)

CHAPTER ONE

Preliminary Provisions

Objective

ARTICLE 1 - (1) The objective of this Communiqué is to determine the procedures and the principles regarding the activities of organizations holding ECM and maintenance function certificates.

Scope

ARTICLE 2 - (1) This Communiqué covers the activities related to the maintenance, repair and inspection of railway vehicles used in the railway infrastructure network of organizations holding ECM and maintenance function certificates.

Legal Basis

ARTICLE 3 - (1) This Communiqué has been prepared based on the subitem (i) of the first item of Article 477 of the Presidential Decree No. 1 on the Presidential Organization, Article 15 of Annex G ATMF of the Protocol dated 3 June 1999 Amending the Convention Concerning International Carriage by Rail (COTIF) dated 9 May 1980, which was approved for ratification by Law No. 5408 dated 6/10/2005, and the ECM Regulation in Annex A of ATMF, the By-law on Railway Vehicles Registration and Record published in the Official Gazette dated 16/7/2015 and numbered 29418, and the By-law on Entities in Charge of Maintenance (ECM) Certification published in the Official Gazette dated 1/12/2023 and numbered 32386 .

Definitions and abbreviations

ARTICLE 4 - (1) In this Communiqué;

- a) Vehicle owner: The legal entity that has the ownership or right to use a railway vehicle and applies for the issuance of an ECM Declaration,
- b) ATMF: Uniform rules for the technical acceptance of railway equipment used in international traffic,
- c) Ministry: Ministry of Transport and Infrastructure,
- c) Maintenance file: Documents explaining the inspection and maintenance tasks to be performed on a railway vehicle, created in accordance with UTP/TSI technical regulations and national rules, if any, and including the maintenance record file,
- d) Maintenance functions: Management, maintenance development, fleet maintenance management or maintenance supply functions of the entities in charge of maintenance,
- e) Entities in Charge of Maintenance (ECM): Organization certified according to the COTIF Annex G ATMF, Annex A ECM Regulation for the maintenance of railway vehicles and published in ERADIS ,
- f) COTIF: Convention Concerning International Carriage by Rail,
- g) Railway vehicles: All kinds of pulling and hauled vehicles and train sets, including line construction, maintenance, repair, measuring machines and control vehicles,
- g) ECM Declaration: A document issued by the entities in charge of maintenance (ECM) declaring that a railway vehicle can be operated in the national railway infrastructure network without adversely affecting navigation, that its maintenance and inspections have been carried out in accordance with national and international legislation, guides and the vehicle's maintenance file, and that the vehicle is kept safe in the railway system throughout its usage period,
- h) ECM certification body: The body authorized by the Directorate General and issuing ECM and maintenance function certificates,
- i) ERADIS: European Railway Agency safety and interoperability database ,
- i) Directorate General: Directorate General for Regulation of Transport Services (DGRTS),
- j) National Railway Rules: Rules published by the Ministry (DGRTS), including national legislation, containing technical and administrative provisions regarding railway infrastructures, vehicles and safety.

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CHAPTER TWO

The Procedures and The Principles Regarding the Activities of the Entities in Charge of Maintenance (ECM)

Preparation of ECM declaration

ARTICLE 5 - (1) Before the ECM Declaration is issued within the scope of the By-law on Railway Vehicles Registration and Record;

a) All inspections are carried out until the fourth maintenance level defined in the maintenance file of the railway vehicle.

b) Parts and consumables detected to be non-conforming during inspections are replaced with materials that comply with the relevant national and international legislation, standards, type approval/registration certificate and maintenance file of the vehicle.

c) The compliance of all components of the vehicle with national and international legislation, guides and maintenance file is checked and confirmed.

(2) The certificates of all parts and consumables used in the railway vehicle for which an ECM Declaration will be issued are checked and confirmed for compliance with the relevant national and international legislation, standards, type approval/registration certificate and maintenance file of the vehicle, and the parts and consumables for which compatibility or certification cannot be confirmed are replaced with suitable materials.

Preparing of maintenance records

ARTICLE 6 - (1) While preparing maintenance records, the information of the personnel assigned to the maintenance, repair and inspection of safety critical equipment, the serial numbers of the workshop equipment and measuring instruments used, and the product codes or serial numbers of the used spare parts and consumables are recorded.

(2) In the maintenance records, it is declared that the assigned personnel have the competence required by the maintenance, repair and inspection activities according to the maintenance file, that the calibration and periodic maintenance of the equipment and measuring instruments used are carried out in accordance with the plans, and that the used spare parts and consumables comply with the standards in the spare parts and consumables list in the maintenance file.

Notification of annual maintenance reports

ARTICLE 7 - (1) The scope of annual maintenance reports is arranged in accordance with the relevant national and international legislation, guides and maintenance file.

(2) In the first part of the report, the registration numbers of the vehicles that have been serviced within the scope of maintenance functions in the period following the previous report and the number of times the activities defined in the maintenance categories in the maintenance file have been performed are specified.

(3) In the second part of the report, the activities carried out within the scope of the maintenance development function in the period following the previous report are described.

(4) Annual maintenance reports are submitted to the Directorate General in January of each year.

Definition of inspections

ARTICLE 8 - (1) The necessary equipment and personnel qualifications required for the inspection of each of the safety critical components to ensure that they are in appropriate conditions and that they fulfill their functions completely are specified, and their inspections are defined to be performed in the appropriate one of the maintenance categories defined in the maintenance plans.

Notification of irregularities

ARTICLE 9 - (1) The organization holding ECM or maintenance function certificate shall immediately inform the General Directorate in case it is detected any non-conformity with this Communiqué and the relevant national and international legislation and maintenance file regarding the conditions of use or the maintenance, repair and inspection of railway vehicles.

(2) The organization holding ECM or maintenance function certificate shall immediately inform the General Directorate and declares the relevant ECM Declaration is invalid if the ECM detects any non-conformity with this Communiqué and the relevant national and international legislation regarding the conditions of use or maintenance, repair and inspection of the railway vehicle for which

it has issued an ECM Declaration, or if the user of the vehicle fails to fulfil the responsibilities specified in the maintenance file.

Audit

ARTICLE 10 - (1) Organizations holding ECM and maintenance function certificates shall regulate their relevant procedures in line with this Communiqué and prove during the audits of the Directorate General and ECM certification bodies that they carry out their activities in accordance with national and international legislation, including this Communiqué.

(2) If it is determined during the audits that the activities carried out are in violation of national and international legislation, including this Communiqué, the scope of the certificate for the activities subject to non-compliance shall be immediately suspended or canceled in accordance with the national and international legislation regulating the activities of ECM certification bodies.

(3) The organization holding the ECM or maintenance function certificate, whose certificate scope is partially or completely suspended due to the detected non-conformity, is responsible for reporting the information (the registration numbers taking place in the vehicle authorization certificate) of the railway vehicles that have been serviced with these activities.

(4) The organization holding an ECM or maintenance function certificate, a part of the scope of the certificate is suspended, may continue its activities by outsourcing the activities (according to Article 9 of ECM Regulation) within the scope of the suspended scope in accordance with the relevant national and international legislation during the period of suspension.

CHAPTER THREE

Miscellaneous and Final Provisions

Other provisions

ARTICLE 11 - (1) In the activities of organizations holding ECM and maintenance function certificates, the procedures and the principles determined by this Communiqué, as well as the procedures and the principles determined by the relevant national and international legislation, are valid.

(2) The procedures and the principles determined within the scope of this Communiqué shall be added to the National Railway Vehicle Rules in accordance with the second item of Article 12 of Annex F APTU of the COTIF and published by the Directorate General.

Authority

ARTICLE 12 - (1) The Directorate General is authorized to audit all activities carried out in line with this Communiqué and the relevant national and international legislation.

(2) ECM certification bodies are authorized and responsible for inspecting whether the activities of the organizations for which they issue ECM and maintenance function certificates are carried out in accordance with this Communiqué and the relevant national and international legislation.

Entry into force

ARTICLE 13 - (1) This Communiqué shall enter into force on the date of its publication.

Implementation

ARTICLE 14 - (1) This Communiqué shall be implemented by The Minister of Transport and Infrastructure.

ANNEX 7

COMMUNIQUE ON TYPE APPROVAL AND REGISTRATION CRITERIA FOR TRAM-TRAIN SETS TO BE USED ON GAZIRAY LINE AND OTHER SUBURBAN LINES WITH COMPATIBLE INTERFACES

Objective

ARTICLE 1 - (1) The objective of this Communiqué is to determine the technical safety conditions to be taken as basis for the type approval and registration of suburban train sets to be operated on the Gaziray line and other suburban lines whose infrastructure and vehicle interfaces are compatible, and the evaluation criteria for ensuring compatibility with the railway infrastructure.

Scope

ARTICLE 2 - (1) This Communiqué covers the evaluation criteria for type approval and registration of suburban train sets to be operated on the Gaziray line and other suburban lines whose infrastructure and vehicle interfaces are compatible.

Legal Basis

ARTICLE 3 - (1) This Communiqué has been prepared based on the subitem (m) of the first item of Article 477 of the Presidential Decree No. 1 on the Presidential Organization, the second item of Article 12 of Annex F APTU of the Convention Concerning International Carriage by Rail (COTIF) dated 9 May 1980, which was approved by Law No. 5408 dated 6/10/2005, and the first paragraph of Article 5 of the By-law on Railway Vehicles Registration and Record published in the Official Gazette dated 16/7/2015 and numbered 29418.

Definitions and abbreviations

ARTICLE 4 - (1) In this Communiqué;

- a) APTU: Uniform rules for the evaluation of technical standards for railway equipment to be used in international traffic and the adoption of applicable uniform technical guidelines,
- b) Ministry: Ministry of Transport and Infrastructure,
- c) Applicant: The public institution or legal entity requesting the conformity assessment,
- ç) COTIF: Convention Concerning International Carriage by Rail,
- d) DeBo : Organizations that are authorized and published by the Ministry to conduct conformity assessment activities, and that evaluate, report and document the conformity of railway infrastructures, vehicles, administrative practices and decisions and activities related to railway safety intended to be used in the national railway infrastructure network with national rules.
- e) Directorate General: Directorate General for Regulation of Transport Services,
- f) National railway rules: Rules published by the Ministry (DGRTS), including national legislation, containing technical and administrative provisions regarding railway infrastructures, vehicles and safety.

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General provisions

ARTICLE 5 - (1) In the type approval and registration of suburban vehicles to be operated on the railway infrastructure to be used within the scope of Gaziray suburban train operation activities, the procedures and the principles determined in the By-law on Railway Vehicles Type Approval published in the Official Gazette dated 18/11/2015 and numbered 29536 and the By-law on Railway Vehicles Registration and Record together with the assessment criteria in Annex 1 shall be taken as basis.

(2) The conformity assessment criteria determined within the scope of this Communiqué shall be added to the National Railway Vehicle Rules in accordance with the second item of Article 12 of Annex F APTU of the COTIF and published by the Directorate General.

Conformity assessment

ARTICLE 6 - (1) DeBos assigned by the General Directorate are authorized to carry out conformity assessment activities for type approval and registration (vehicle authorization) of Gaziray tram-train sets.

(2) DeBos shall take into account the assessment criteria in this Communiqué, other applicable assessment criteria in the National Railway Vehicle Rules, and relevant national and international legislation in the conformity assessment activities to be carried out.

(3) If the conformity assessment process is concluded positively, a national rules conformity assessment report is prepared and delivered to the applicant.

(4) If the conformity assessment process is concluded negatively or is stopped before it is concluded, a report explaining the process in detail is prepared and submitted to the Directorate General.

Authority and audit

ARTICLE 7 - (1) The Directorate General is authorized to audit all conformity assessment activities to be carried out in accordance with this Communiqué.

(2) The Directorate General is authorized to decide that the type approval and registration criteria determined within the scope of this Communiqué will be taken as basis for train sets to be used on other suburban lines that have compatible interfaces with the Gaziray railway infrastructure and to publish this situation (the decision) in the National Railway Vehicle Rules.

Entry into force

ARTICLE 8 - (1) This Communiqué shall enter into force on the date of its publication.

Implementation

ARTICLE 9 - (1) This Communiqué shall be implemented by The Minister of Transport and Infrastructure.

NATIONAL RULES ON CONFORMITY ASSESSMENT CRITERIA FOR TRAM-TRAIN SETS

NO	STANDARD	CONFORMITY ASSESSMENT ITEMS
1	EN ISO 9001	Quality Systems- Quality Assurance Model in Design, Improvement, Manufacturing, Facility and Service
2	EN 12082	Railway applications. Axle boxes. Performance testing
3	EN 12663	Railway applications- Structural requirements of railway vehicle bodies
4	EN 13260	Railway applications - Wheelsets and bogies – Wheelsets – Product requirements
5	EN 13261	Railway applications - Wheelsets and bogies - Axles - Product requirements
6	EN 13262	Railway applications - Wheelsets and bogies - Wheels - Product requirements
7	EN 13272	Railway applications - Electrical lighting for rolling stock in public transport systems
8	EN 13452-1	Railway applications — Braking — Mass transit brake systems — Part 1: Performance requirements
9	EN 13452-2	Railway applications — Braking — Mass transit brake systems — Part 1: Test methods
10	EN 13749	Railway applications — Wheelsets and bogies —. Method of specifying the structural requirements of bogie frames
11	EN 14363	Railway applications - Testing for the acceptance of running characteristics of railway vehicles
12	EN 14535-1	Railway applications - Brake discs for railway rolling stock - Part 1: Brake discs pressed or shrunk onto the axle or drive shaft, dimensions and quality requirements
13	EN 14535-2	Railway applications - Brake discs for railway rolling stock - Part 2: Brake discs mounted onto the wheel, dimensions and quality requirements
14	EN 14750-1	Railway applications - Air conditioning for urban and suburban rolling stock - Part 1: Comfort parameters
15	EN 14750-2	Railway applications - Air conditioning for urban and suburban rolling stock - Part 2: Type tests
16	EN 14752	Railway applications. Bodyside entrance systems
17	EN 14813-1	Railway applications - Air conditioning for driving cabs - Part 1: Comfort parameters
18	EN 14813-2	Railway applications - Air conditioning for driving cabs - Part 2: Type tests
19	EN 15085	Railway Applications - Welding of Railway Vehicles and Components
20	EN 15085-2	Management System for Welding Operations of Railway Vehicles and Components
21	EN 15595:2018	Railway applications. Braking. Wheel slide protection
22	EN 45545-1	Railway applications. Fire protection on railway vehicles. General
23	EN 45545-2	Railway applications. Fire protection on railway vehicles. Requirements for fire behavior of materials and components
24	EN 45545-3	Railway applications. Fire protection on railway vehicles. Fire resistance requirements for fire barriers

25	EN 45545-4	Railway applications. Fire protection on railway vehicles. Fire safety requirements for electrical equipment including that of trolley buses, track guided buses and magnetic levitation vehicles
26	EN 45545-5	Railway applications. Fire protection on railway vehicles. Fire safety requirements for electrical equipment including that of trolley buses, track guided buses and magnetic levitation vehicles
27	EN 45545-6	Railway applications. Fire protection on railway vehicles. Fire control and management systems
28	EN 50121	Railway Applications - Electromagnetic Compatibility
29	EN 50126-1	Railway Applications - The specification and demonstration of reliability, availability, maintainability and safety (RAMS) - Part 1: Basic requirements
30	EN 50126-2	Railway Applications. The Specification and Demonstration of Reliability, Availability, Maintainability and Safety (RAMS).Part 2. Systems approach to safety
31	EN 50153	Railway applications-Rolling stock-Protective provisions relating to electrical hazards
32	EN 50155	Railway applications-Electronic equipment used on rolling stock.
33	EN 50215	Railway applications. Testing of rolling stock after completion of construction and before entry into service
34	EN 50206-1	Railway applications. Rolling stock. Pantographs. Characteristics and tests
35	EN 50264-1	Railway applications. Railway rolling stock power and control cables having special fire performance. General requirements
36	EN 50264-2	Single Core Cables
37	EN 50264-3	Multi Core Cables
38	EN 50305	Fire Testing Methods
39	EN 50306	Special Fire Performance
40	EN 50343	Installation of Cabling
41	EN 50355	Railway Applications - Railway Rolling Stock Cables Having Special Fire Performance - Guide to use Provides guidance on the safe use of thin walled and standard walled cables
42	EN 60947-2:2017	Low-voltage switchgear and controlgear. Circuit-breakers
43	EN ISO 3095	Railway applications — Acoustics —. Measurement of noise emitted by vehicles moving on the rail
44	EN ISO 3381	Railway applications — Acoustics. Measurement of noise inside railbound vehicles
45	IEC 60068	Environmental Tests
46	IEC 60076	Power transformers
47	IEC 60349-2	Electric traction - Rotating electrical machines for rail and road vehicles

48	IEC 60623	Secondary cells and batteries containing alkaline or other non-acid electrolytes - Vented nickel-cadmium prismatic rechargeable single cells.
49	EN 61287-1	Railway applications - Power converters installed on board rolling stock - Part 1: Characteristics and test methods
50	IEC 61373	Railway application- Rolling stock equipment- Shock and Vibration tests
51	IEC 61375-1	Electric railway equipment - Train bus - Part 1: Train Communication network
52	UIC 540	Brakes-Air Brakes for freight trains and passenger trains
53	UIC 541-03	Brakes – Disc Brakes and applications – General requirements for approving the brake pads
54	UIC 541-4	Brakes - Brakes with composition brake blocks
55	UIC 541-5	Brakes - electropneumatic brake - electropneumatic emergency brake override
56	UIC 544-1	Brakes – Braking Performance
57	UIC 545	Brakes - Inscriptions, marks and signs
58	UIC 560	Doors, footboards, windows, steps, handles and handrails of coaches and luggage vans
59	UIC 564-1	Coaches - windows made from safety glass
60	TS 12694	Railway vehicles- Passenger coaches- Indications for the layout of coaches suitable for conveying disabled passengers in their wheelchairs
61	UIC 641	Railway Application - Rolling Stock - Conditions to be fulfilled by automatic vigilant devices used in International traffic
62	UIC 651	Layout of driver's cabs in locomotives, railcars, multiple unit trains and driving trailers.

