

Section 1: General Information

0. Identification of the type

0.1 0.2 0.4 Type ID: 13-046-0004-0-001-001

0.3 Date of record: 2020-11-27

1. General Information

1.1 Type name: ATR465

1.2 Alternative type name:

1.3 Manufacturer:

1.3.1 Manufacturer identification data:

1.3.1.1 Name of organisation: CAF

1.3.1.2 Registered business number:

1.3.1.3 Organisation code:

1.3.2 Manufacturer contact data:

1.3.2.1 Address of organisation, street and number:

1.3.2.2 Town:

1.3.2.3 Country code:

1.3.2.4 Post code:

1.3.2.5 E-mail address:

Registration Method: New Type

Registered Vehicle Type:

1.4 Category: Traction vehicles

1.5 Subcategory: Self-propelled passenger trainset (incl. railbusses)

1.6 Platform: DMU Oscillante Sardegna

Section 2: Conformity with TSI

2.1 Conformity with TSI and Sections not complied with:

HS+CR PRM (Dec 2008/164/EC amended by Dec 2012/464/EU)

HS+CR SRT (Dec 2008/163/EC amended by Dec 2012/464/EU)

Noise (Dec 2011/229/EU amended by Dec 2012/464/EU)

HS and CR CCS (Dec 2012/88/EU)

LOC & PAS (Regulation (EU) No 1302/2014)

4.2. Functional and technical specification of the sub-system

4.2.1. General

4.2.1.1. Breakdown

4.2.1.2. Open points

4.2.1.3. Safety aspects

4.2.2. Structure and mechanical parts

4.2.2.1. General

4.2.2.2. Mechanical interfaces

4.2.2.2.1. General and definitions

4.2.2.2.2. Inner coupling

4.2.2.2.3. End coupling

4.2.2.2.4. Rescue coupling

4.2.2.2.5. Staff access for coupling and uncoupling

4.2.2.3. Gangways

4.2.2.4. Strength of vehicle structure

4.2.2.5. Passive safety

4.2.2.6. Lifting and jacking

4.2.2.7. Fixing of devices to carbody structure

4.2.2.8. Staff and freight Access doors

4.2.2.9. Mechanical characteristics of glass (other than windscreens)

4.2.2.10. Load conditions and weighted mass

4.2.3. Track interaction and gauging

4.2.3.1. Gauging

4.2.3.2. Axle load and wheel load

4.2.3.2.1. Axle load parameter

4.2.3.2.2. Wheel load

4.2.3.3. Rolling Stock parameters which influence ground based systems

4.2.3.3.1. Rolling Stock characteristics for the compatibility with train detection systems

4.2.3.3.1.1. Rolling stock characteristics for compatibility with train detection system based on track circuits

4.2.3.3.1.2. Rolling stock characteristics for compatibility with train detection system based on axle counters

4.2.3.3.1.3. Rolling stock characteristics for compatibility with loop equipment

4.2.3.3.2. Axle bearing condition monitoring

4.2.3.3.2.1. Requirements applicable to on board detection equipment

4.2.3.3.2.2. Rolling stock requirements for compatibility with trackside equipment

4.2.3.4. Rolling stock dynamic behaviour

4.2.3.4.1. Safety against derailment running on twisted track

4.2.3.4.2. Running dynamic behaviour

4.2.3.4.2.1. Limit values for running safety

4.2.3.4.2.2. Track loading limit values

4.2.3.4.3. Equivalent conicity

4.2.3.4.3.1. Design values for new wheel profiles

4.2.3.4.3.2. In-service values of wheelset equivalent conicity

2.3 Applicable specific cases (specific cases conformity with which has been assessed)

2.2 Reference of 'EC type examination certificates'

Reference of 'EC type examination certificates' - if module SB applied - and/or 'design verification certificate' - if module SH1 applied	1960_1_SB_2019_RST_IT EN_058.03
Reference of 'EC type examination certificates' - if module SB applied - and/or 'design verification certificate' - if module SH1 applied	IT_02_2013_1_SB_2019_RST_IT_106.03

Section 3: Authorisations

Italy

3.0 Area Of Use:	IT(Rete Ferroviaria Italiana (RFI))
3.1.1 Member state of authorisation:	Italy(IT)
3.1.2.1 Status:	Valid
3.1.2.2 Validity of Authorisation (until):	
3.1.2.3 Coded conditions for use and other restrictions:	1435mm / Autonomous / BL3 (version 2.4.0A) 1 Technical restriction related to construction 1.1 Minimum curve radius in meters: 90 1.3 Speed restrictions in Km/h: 150 2.6 Other CCS systems on board 2.6.1 Other CCS signalling systems on board: 2.6.101 SSC BL3 3 Environmental restrictions 3.1 Climatic zone EN 50125-1:2014: 3.1.3 T3 4 Restrictions on use 4.1 Time based: True 4.2 Condition based (distance travelled, wear, etc.): True
3.1.2.4 Non-coded conditions for use and other restrictions:	1435mm / Autonomous / BL3 (version 2.4.0A)

Sottosistema Comando controllo e Segnalamento
[ITCF_ATR465_01] Il manuale "MANUALE OPERATIVO - ATR465 CON PASSEGGERI IN PIEDI" in rev. 0 deve essere preso in carico dall'Impresa Ferroviaria utilizzatrice del veicolo.
[ITCF_ATR465_02] Il manuale NTM 12.02 "MANUALE DI MANUTENZIONE - Segnalazione BL3" rev. 2 deve essere preso in carico dal Soggetto Responsabile della Manutenzione (SRM) del veicolo.
[RCEC_ATR365_001] Le informazioni relative al parametro "Località di servizio di inizio e fine missione" devono essere desunte dall'analisi incrociata dei seguenti parametri: "Identificativo del PdC", "Numero treno", "Coordinate geografiche". [ATR365_CAB RADIO_001] Per ottenere conformità totale della risposta automatica per le chiamate punto - punto deve essere impiegata una SIM CARD configurata con livelli di priorità di chiamata da 0 a 3 (0 - 1 - 2 - 3).
[PRESCR_ATR365_001] Il titolare dell'Autorizzazione alla Messa in Servizio deve comunicare alle Imprese Ferroviarie esercenti che il commutatore EVIG de

Sottosistema Materiale Rotabile: In relazione alla valutazione della conformità del sottosistema "Materiale Rotabile" del nuovo tipo di veicolo ATR465 ai requisiti delle Disposizioni RFI 01/2003 e 30/2007, sulla base di quanto espresso nelle Dichiarazione CE di Verifica e nei relativi Certificati di Verifica sono emerse le seguenti limitazioni e condizioni di uso per il sottosistema materiale rotabile del nuovo tipo di veicolo ATR 465:

Condizioni legate al profilo di missione del veicolo:

- massima velocità di esercizio pari a 150 km/h
- rango C
- pendolamento disinserito
- numero massimo di passeggeri in piedi ammesso a bordo pari a 96
- divieto di circolazione in composizione multipla
- zona climatica di riferimento T3. Requisito 1.1 – Sagoma
- sagoma UIC 505-1
- divieto di circolazione in presenza di freni posti sul binario e di altri dispositivi di manovra e di arresto in posizione attiva.
- l'antenna RSDD deve essere sollevata di 5 mm in modo da compensare l'abbassamento che subisce il veicolo a causa della riprofilatura stessa.
- regolazione in altezza del supporto del cacciapietre al momento della tornitura delle in modo tale che l'altezza delle antenne RSC fissate allo stesso supporto del cacciapietre compresa nel campo di funzionamento di 180 ± 5 mm dal pdf a prescindere dal diametro della ruota. Requisito 1.3 - Inscrizione in curva e sicurezza contro lo svio a bassa velocità

Raggio minimo di iscrizione in curva del veicolo: pari a 90 m. Requisito 1.4 –

Comportamento dinamico – in modalità di funzionamento normale: o sistema di pendolamento "disinserito" o $V_{adm} = 150$ km/h o $I_{adm} = 153$ mm (rango C) –

massima conicità equivalente in servizio $tg\alpha_e = 0,40$ (valore per il quale è stata dimostrata la stabilità del veicolo tenendo conto del contributo dei profili di ruota e rotaia; il valore di accelerazione rms misurato sul carrello è pari al 59,6 % del limite di stabilità 5,1 m/s²; il valore medio di TG-SR associato alla conicità equivalente $tg\alpha_e = 0.40$, e calcolato secondo quanto previsto dalla EN 14363:2016, risulta 9,61 mm); –

relativamente alle situazioni di degrado risulta: o con sospensioni secondarie pneumatiche in avaria, il veicolo ha rispettato i valori limite per la sicurezza di marcia per velocità massima di 150 km/h e insufficienza di sopraelevazione massima di 153 mm; o con sospensioni secondarie pneumatiche in avaria velocità massima 80 km/h, secondo quanto previsto nel "Manuale di emergenza e recupero – DMU ATR465 con passeggeri in piedi"; o con avaria degli ammortizzatori antiserpeggio a profilo nuovo il veicolo ha rispettato i valori limite per la sicurezza di marcia fino alla velocità massima di 150 km/h e insufficienza di sopraelevazione massima di 153 mm; Requisito 1.8 - Massa per asse e ripartizione dei carichi sugli assi – tara: 204980 kg – massa di progetto in ordine di marcia: 210516 kg – massa di esercizio in

3.1.3.1.1 Date of the original authorisation: 2020-11-12

3.1.3.1.2 Authorisation holder:

3.1.3.1.2.1 Authorisation holder identification data:

3.1.3.1.2.1.1 Name of organisation: Construcciones y Auxiliar de Ferrocarriles, S.A.

3.1.3.1.2.1.2 Registered business number: 20001020

3.1.3.1.2.1.3 Organisation code:

3.1.3.1.2.2 Authorisation holder contact data:

3.1.3.1.2.2.1 Address of organisation, street and number: J. M. Iturrioz, 26

3.1.3.1.2.2.2 Town: Beasain

3.1.3.1.2.2.3 Country code: ES

3.1.3.1.2.2.4 Post code: 20200

3.1.3.1.2.2.5 E-mail address: sara.diazdecerio@caf.net

3.1.3.1.3 Authorisation document reference: IT8020200012

3.1.3.1.4 Certificate of verification : Reference of type examination or design examination type:

1960/1/SB/2019/RST/IT EN/058.03 del
24/07/2020

IT/02/2013/1/SB/2019/RST/IT/106.03 del
24/07/2020

3.1.3.1.5 Parameters for which conformity to applicable national rules has been assessed:

1435mm / Autonomous / BL3 (version 2.4.0A)
2015/2299/EU

1.1 General documentation

1.2 Maintenance instructions and requirements

1.2.1 Maintenance instructions

1.2.2 The maintenance design justification file

1.3 Instructions and documentation for operation

1.3.1 Instructions for operation in normal and degraded modes of the vehicle

2.1 Vehicle structure

2.1.1 Strength and integrity

2.1.2 Load capability

2.1.2.2 Axle load and wheel load

2.1.3 Joining technology

2.1.4 Lifting and jacking

2.1.5 Fixing of devices to car body structure

2.1.6 Connections used between different parts of the vehicle

2.2.1 Automatic coupling

2.2.2 Characteristics of rescue coupling

2.3 Passive safety

3 Track interaction and gauging

3.1 Vehicle gauge

3.2 Vehicle dynamics

3.2.1 Running safety and dynamics

3.3 Bogies / running gear

3.3.1 Bogies

3.3.3 Wheel

3.4 Limit of maximum longitudinal positive and negative acceleration

4 Braking

4.1 Functional requirements for braking at train level

4.2 Safety requirements for braking at train level

4.3 Brake system - Recognised architecture and associated standards

4.4 Brake command

4.4.1 Emergency braking command

4.4.2 Service braking command

4.4.3 Direct braking command

4.4.4 Dynamic braking command

4.4.5 Parking braking command

4.5 Brake performance

4.5.3 Calculations related to thermal capacity

4.6 Braking adhesion management

4.6.1 Limit of wheel rail adhesion profile

4.7 Braking force production

4.8 Brake state and fault indication

4.9 Brake requirements for rescue purposes

5 Passenger-related items

5.1 Access

5.1.1 Exterior doors

6 Environmental conditions and aerodynamic effects

6.2 Impact of the vehicle on the environment

7.1 Integrity of software employed for safety related functions

7.2 Visual and audible vehicle identification and warning functions

7.2.1 Vehicle marking

7.2.2 External lights

7.2.2.1 Headlights

7.2.2.2 Marker lights

7.2.2.4 Lamp controls

7.2.4 Brackets

8.1 Traction performance requirements

8.5 Protection against electrical hazards

8.6 Diesel and other thermal traction system requirements

8.7.2 Pressure vessel systems/pressure equipment

9 Staff facilities, interfaces and environment

9.1 Driver's cab design

9.1.2 Access to driver's cab

9.1.2.1 Access, egress and doors

9.1.2.2 Driver's cab emergency exits

9.1.3 Windscreen in driver's cab

9.1.3.1 Mechanical characteristics

9.1.3.2 Optical characteristics

9.2.1 Environmental conditions

9.2.1.2 Noise in driver's cab

9.2.1.3 Lighting in driver's cab

9.3 Driver/machine interface

9.4 Marking and labelling in driver's cab

9.5 Equipment and other facilities on-board for staff

9.5.1 Facilities on-board for staff

9.5.1.1 Staff access for coupling/uncoupling

9.5.1.2 External steps and handrails for shunting staff

9.5.1.3 Storage facilities for use by staff

9.5.2 Staff and freight access doors

9.5.3 On-board tools and portable equipment

9.5.4 Audible communication system

9.6 Recording device

10.2 Emergency

10.2.2 Rescue services' information, equipment and access

10.2.3 Passenger alarm

10.2.4 Emergency lighting

12 On-board control command and signalling

12.1 On-board radio system

12.2 On-board signalling

12.2.1 National on-board signalling systems

13 Specific operational requirements

14.3 Doors and loading facilities

The national rules for the authorisation of placing in service of vehicles on the Italian railway network in concession to RFI Infrastructure Manager as specified in the regulation RFI 1/2003 and 30/2007. The corresponding parameters between the above RFI regulation and Decision 2015/2299/EC are listed in the Italian NRD. Parameters are the same in all cases.

DOSSIER DI ACCETTAZIONE FINALE DEL RISCHIO VEICOLO ATR 465 DMU OSCILLANTE SARDEGNA - C.E6.93.942.01 D del 25.07.2020; HAZARD LOG VEICOLO ATR 465 DMU OSCILLANTE SARDEGNA - C.E6.93.949.01 E del 25.07.2020; PIANO DI SICUREZZA DMU OSCILLANTE SARDEGNA C.E6.94.901.00 D del 12.01.2017; ITCF-C-18-243-14-ATF-RA-10001 rev. 3.0 del 25.07.2020 Rapporto di Valutazione Documento: "Hazard Log Veicolo ATR465 – DMU Oscillante Sardegna"; Fissazione dei Requisiti C.E6.96.906.00-A del 25/07/2020 ITCF-C-18-243-14-ATF-RA-10002 Rev. 1.0 del 25/07/2020

3.1.3.1.6 Comments:

3.1.3.1.7 Reference to the written declaration by the proposer referred to in Article 3(11) of Regulation (EU) 402/2013:

3.1.3.1 Initial Registration

3.1.2.3 Coded conditions for use and other restrictions:

1435mm / Autonomous / BL3 (version 2.4.0A)

1 Technical restriction related to construction

1.1 Minimum curve radius in meters: 90

1.3 Speed restrictions in Km/h: 150

2.6 Other CCS systems on board

2.6.1 Other CCS signalling systems on board:
2.6.101 SSC BL3

3 Environmental restrictions

3.1 Climatic zone EN 50125-1:2014: 3.1.3 T3

4 Restrictions on use

4.1 Time based: True

4.2 Condition based (distance travelled, wear, etc.): True

3.1.2.4 Non-coded conditions for use and other restrictions:

1435mm / Autonomous / BL3 (version 2.4.0A)

Sottosistema Comando controllo e Segnalamento
[ITCF_ATR465_01] Il manuale "MANUALE OPERATIVO - ATR465 CON PASSEGGERI IN PIEDI" in rev. 0 deve essere preso in carico dall'Impresa Ferroviaria utilizzatrice del veicolo.
[ITCF_ATR465_02] Il manuale NTM 12.02 "MANUALE DI MANUTENZIONE - Segnalazione BL3" rev. 2 deve essere preso in carico dal Soggetto Responsabile della Manutenzione (SRM) del veicolo.
[RCEC_ATR365_001] Le informazioni relative al parametro "Località di servizio di inizio e fine missione" devono essere desunte dall'analisi incrociata dei seguenti parametri: "Identificativo del PdC", "Numero treno", "Coordinate geografiche". [ATR365_CAB RADIO_001] Per ottenere conformità totale della risposta automatica per le chiamate punto - punto deve essere impiegata una SIM CARD configurata con livelli di priorità di chiamata da 0 a 3 (0 - 1 - 2 - 3).
[PRESCR_ATR365_001] Il titolare dell'Autorizzazione alla Messa in Servizio deve comunicare alle Imprese Ferroviarie esercenti che il commutatore EVIG de

Sottosistema Materiale Rotabile: In relazione alla valutazione della conformità del sottosistema "Materiale Rotabile" del nuovo tipo di veicolo ATR465 ai requisiti delle Disposizioni RFI 01/2003 e 30/2007, sulla base di quanto espresso nelle Dichiarazione CE di Verifica e nei relativi Certificati di Verifica sono emerse le seguenti limitazioni e condizioni di uso per il sottosistema materiale rotabile del nuovo tipo di veicolo ATR 465:

Condizioni legate al profilo di missione del veicolo:

- massima velocità di esercizio pari a 150 km/h
- rango C
- pendolamento disinserito
- numero massimo di passeggeri in piedi ammesso a bordo pari a 96
- divieto di circolazione in composizione multipla
- zona climatica di riferimento T3.

Requisito 1.1 – Sagoma

- sagoma UIC 505-1
- divieto di circolazione in presenza di freni posti sul binario e di altri dispositivi di manovra e di arresto in posizione attiva.
- l'antenna RSDD deve essere sollevata di 5 mm in modo da compensare l'abbassamento che subisce il veicolo a causa della riprofilatura stessa.
- regolazione in altezza del supporto del cacciapietre al momento della tornitura delle in modo tale che l'altezza delle antenne RSC fissate allo stesso supporto del cacciapietre compresa nel campo di funzionamento di 180 ± 5 mm dal pdf a prescindere dal diametro della ruota.

Requisito 1.3 - Inscrizione in curva e sicurezza contro lo svio a bassa velocità –

Raggio minimo di iscrizione in curva del veicolo: pari a 90 m.

Requisito 1.4 –

Comportamento dinamico – in modalità di funzionamento normale: o sistema di pendolamento "disinserito" o $V_{adm} = 150$ km/h o $I_{adm} = 153$ mm (rango C) –

massima conicità equivalente in servizio $tg\alpha_e = 0,40$ (valore per il quale è stata dimostrata la stabilità del veicolo tenendo conto del contributo dei profili di ruota e rotaia; il valore di accelerazione rms misurato sul carrello è pari al 59,6 % del limite di stabilità 5,1 m/s²; il valore medio di TG-SR associato alla conicità equivalente $tg\alpha_e = 0.40$, e calcolato secondo quanto previsto dalla EN 14363:2016, risulta 9,61 mm); –

relativamente alle situazioni di degrado risulta: o con sospensioni secondarie pneumatiche in avaria, il veicolo ha rispettato i valori limite per la sicurezza di marcia per velocità massima di 150 km/h e insufficienza di sopraelevazione massima di 153 mm; o con sospensioni secondarie pneumatiche in avaria velocità massima 80 km/h, secondo quanto previsto nel "Manuale di emergenza e recupero – DMU ATR465 con passeggeri in piedi"; o con avaria degli ammortizzatori antiserpeggio a profilo nuovo il veicolo ha rispettato i valori limite per la sicurezza di marcia fino alla velocità massima di 150 km/h e insufficienza di sopraelevazione massima di 153 mm;

Requisito 1.8 - Massa per asse e ripartizione dei carichi sugli assi – tara: 204980 kg – massa di progetto in ordine di marcia: 210516 kg – massa di esercizio in

3.1.3.1.1 Date of the original authorisation: 2020-11-12

3.1.3.1.2 Authorisation holder:

3.1.3.1.2.1 Authorisation holder identification data:

3.1.3.1.2.1.1 Name of organisation: Construcciones y Auxiliar de Ferrocarriles, S.A.

3.1.3.1.2.1.2 Registered business number: 20001020

3.1.3.1.2.1.3 Organisation code:

3.1.3.1.2.2 Authorisation holder contact data:

3.1.3.1.2.2.1 Address of organisation, street and number: J. M. Iturrioz, 26

3.1.3.1.2.2.2 Town: Beasain

3.1.3.1.2.2.3 Country code: ES

3.1.3.1.2.2.4 Post code: 20200

3.1.3.1.2.2.5 E-mail address: sara.diazdecerio@caf.net

3.1.3.1.3 Authorisation document reference: IT8020200012

3.1.3.1.4 Certificate of verification : Reference of type examination or design examination type:

1960/1/SB/2019/RST/IT EN/058.03 del
24/07/2020

IT/02/2013/1/SB/2019/RST/IT/106.03 del
24/07/2020

3.1.3.1.5 Parameters for which conformity to applicable national rules has been assessed:

1435mm / Autonomous / BL3 (version 2.4.0A)

1.1 General documentation

1.2 Maintenance instructions and requirements

1.2.1 Maintenance instructions

1.2.2 The maintenance design justification file

1.3 Instructions and documentation for operation

1.3.1 Instructions for operation in normal and degraded modes of the vehicle

2.1 Vehicle structure

2.1.1 Strength and integrity

2.1.2 Load capability

2.1.2.2 Axle load and wheel load

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2.1.4 Lifting and jacking

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2.1.6 Connections used between different parts of the vehicle

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2.2.2 Characteristics of rescue coupling

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3.1 Vehicle gauge

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4.4.5 Parking braking command

4.5 Brake performance

4.5.3 Calculations related to thermal capacity

4.6 Braking adhesion management

4.6.1 Limit of wheel rail adhesion profile

4.7 Braking force production

4.8 Brake state and fault indication

4.9 Brake requirements for rescue purposes

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6.2 Impact of the vehicle on the environment

7.1 Integrity of software employed for safety related functions

7.2 Visual and audible vehicle identification and warning functions

7.2.1 Vehicle marking

7.2.2 External lights

7.2.2.1 Headlights

7.2.2.2 Marker lights

7.2.2.4 Lamp controls

7.2.4 Brackets

8.1 Traction performance requirements

8.5 Protection against electrical hazards

8.6 Diesel and other thermal traction system requirements

8.7.2 Pressure vessel systems/pressure equipment

9 Staff facilities, interfaces and environment

9.1 Driver's cab design

9.1.2 Access to driver's cab

9.1.2.1 Access, egress and doors

9.1.2.2 Driver's cab emergency exits

9.1.3 Windscreen in driver's cab

9.1.3.1 Mechanical characteristics

9.1.3.2 Optical characteristics

9.2.1 Environmental conditions

9.2.1.2 Noise in driver's cab

9.2.1.3 Lighting in driver's cab

9.3 Driver/machine interface

9.4 Marking and labelling in driver's cab

9.5 Equipment and other facilities on-board for staff

9.5.1 Facilities on-board for staff

9.5.1.1 Staff access for coupling/uncoupling

9.5.1.2 External steps and handrails for shunting staff

9.5.1.3 Storage facilities for use by staff

9.5.2 Staff and freight access doors

9.5.3 On-board tools and portable equipment

9.5.4 Audible communication system

9.6 Recording device

10.2 Emergency

10.2.2 Rescue services' information, equipment and access

10.2.3 Passenger alarm

10.2.4 Emergency lighting

12 On-board control command and signalling

12.1 On-board radio system

12.2 On-board signalling

12.2.1 National on-board signalling systems

13 Specific operational requirements

14.3 Doors and loading facilities

The national rules for the authorisation of placing in service of vehicles on the Italian railway network in concession to RFI Infrastructure Manager as specified in the regulation RFI 1/2003 and 30/2007. The corresponding parameters between the above RFI regulation and Decision 2015/2299/EC are listed in the Italian NRD. Parameters are the same in all cases.

DOSSIER DI ACCETTAZIONE FINALE DEL RISCHIO VEICOLO ATR 465 DMU OSCILLANTE SARDEGNA - C.E6.93.942.01 D del 25.07.2020; HAZARD LOG VEICOLO ATR 465 DMU OSCILLANTE SARDEGNA - C.E6.93.949.01 E del 25.07.2020; PIANO DI SICUREZZA DMU OSCILLANTE SARDEGNA C.E6.94.901.00 D del 12.01.2017; ITCF-C-18-243-14-ATF-RA-10001 rev. 3.0 del 25.07.2020 Rapporto di Valutazione Documento: "Hazard Log Veicolo ATR465 – DMU Oscillante Sardegna"; Fissazione dei Requisiti C.E6.96.906.00-A del 25/07/2020 ITCF-C-18-243-14-ATF-RA-10002 Rev. 1.0 del 25/07/2020

3.1.3.1.6 Comments:

3.1.3.1.7 Reference to the written declaration by the proposer referred to in Article 3(11) of Regulation (EU) 402/2013:

Section 4: Technical Characteristics

4.1.3 Wheel set gauge RC	1435	mm
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4.1.12 Number of vehicles composing the fixed formation (for fixed formation only)	4
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4.13.1 Signalling

4.13.1.1 ETCS equipment on-board and the set of specifications from CCS TSI Annex A RC	None
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4.13.1.5 Class B or other train protection control and warning systems installed (system and if applicable version) RC	BL3 (version 2.4.0A)
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4.13.1.8 ETCS System Compatibility	Not applicable
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4.13.2 Radio

4.13.2.1 GSM-R Radio voice on board and its Baseline RC	Decision 2012/88/EU Set_1
4.13.2.3 Class B or other radio systems installed (system and if applicable version) RC	None
4.13.2.5 Radio Voice System Compatibility	Not applicable
4.13.2.6 Voice and operational communication implementation RC	-
4.13.2.7 GSM-R Radio Data communication on board and its Baseline RC	Decision 2012/88/EU Set_1
4.13.2.8 Radio Data System Compatibility	Not applicable
4.13.2.9 Data communication application for ETCS implementation RC	Not applicable. No ETCS.
4.13.2.10 Voice SIM Card GSM-R Home Network	GSM-R I (Italy)
4.13.2.11 Data SIM Card GSM-R Home Network	GSM-R I (Italy)
4.13.2.12 Voice SIM Card support of Group ID 555	False
4.10.1 Energy supply system (voltage and frequency) RC	Autonomous

4.1.2 Speed

4.1.2.1 Maximum design speed	1435mm / Autonomous / BL3 (version 2.4.0A)	150	km/h
4.1.5 Maximum number of trainsets or locomotives coupled together in multiple operation.	1435mm / Autonomous / BL3 (version 2.4.0A)	1	
4.2.1 Reference profile RC		UIC 505-1	
4.3.1 Temperature range		T3 (-25 to +45)	
4.3.3 Snow, ice and hail conditions		Nominal	

4.4.1 Fire safety category RC		B			
4.5.2 Design mass					
4.5.2.1 Design mass in working order RC		207000	kg		
4.5.2.2 Design mass under normal payload RC		242000	kg		
4.5.2.3 Design mass under exceptional payload RC		252700	kg		
4.5.3 Static axle load					
4.5.3.1 Static axle load in working order RC		15293	kg		
4.5.3.2 Static axle load under normal payload RC		17208	kg		
4.5.3.3 Static axle load under exceptional payload RC		17776	kg		
4.5.3.4 Position of the axles along the unit (axle spacing) : a: Distance between axles b: Distance from end axle to the end of the nearest coupling plane c: distance between two inside axles RC	1435mm / Autonomous / BL3 (version 2.4.0A)	a: 0018,00 b: 0001,79 c: 0002,70	m		
4.5.5 Total vehicle mass (for each vehicle of the unit) RC	1435mm / Autonomous / BL3 (version 2.4.0A)	210516	kg		
4.5.6 Mass per wheel RC	1435mm / Autonomous / BL3 (version 2.4.0A)	7815	kg		
4.6.4 Combination of maximum speed and maximum cant deficiency for which the vehicle was assessed RC	1435mm / Autonomous / BL3 (version 2.4.0A)	0150,00	km/h	0153,00	mm
4.6.5 Rail inclination RC	1435mm / Autonomous / BL3 (version 2.4.0A)	1/20			
4.7.1 Maximum average deceleration		1.39	m/s²		
4.7.2.1 Brake performance on steep gradients with normal payload					

4.7.2.1.1 Reference case of TSI		Reference case (60 km/h, 21‰ (mm/m), 45 min)			
4.7.2.1.6 Maximum brake thermal energy capacity	1435mm / Autonomous / BL3 (version 2.4.0A)	71520			kJ
4.7.3 Parking brake					
4.7.3.3 Maximum gradient on which the unit is kept immobilized by the parking brake alone (if the vehicle is fitted with it)		40			‰ (mm/m)
4.7.4.1 Eddy current brake					
4.7.4.1.1 Eddy current track brake fitted RC		False			
4.7.4.2 Magnetic brake					
4.7.4.2.1 Magnetic track brake fitted RC		False			
4.7.4.3 Regenerative brake (only for vehicles with electrical traction)					
4.7.4.3.1 Regenerative brake fitted RC		False			
4.7.5 Emergency brake : Stopping distance and deceleration profile for each load condition per design maximum speed a: Load condition: working order b: Load condition: normal payload c: Load condition: exceptional payload	1435mm / Autonomous / BL3 (version 2.4.0A)	a: 0000,00	m	0000,00	m/s ²
		b: 0000,00	m	0000,00	m/s ²
		c: 0885,60	m	0000,98	m/s ²
4.7.6 For general operation : Brake weight percentage (lambda) or Braked mass	1435mm / Autonomous / BL3 (version 2.4.0A)	161,00		(%) or 00387,52	tonnes
4.7.7 Service brake: At maximum service brake:	1435mm / Autonomous / BL3 (version 2.4.0A)	0885,60	m	0000,98	m/s ²
Stopping distance, Maximum deceleration, for the load condition 'design mass under normal payload' at the design maximum speed.					

4.7.8 Wheel slide protection system	1435mm / Autonomous / True BL3 (version 2.4.0A)		
4.8.1 Vehicle length	101.15	m	
4.8.2 Minimum in-service wheel diameter RC	780	mm	
4.8.4 Minimum horizontal curve radius capability RC	90	m	
4.8.5 Minimum vertical convex curve radius capability	1000	m	
4.8.6 Minimum vertical concave curve radius capability	1000	m	
4.9.1 Type of end coupling	Automatic Type 10 / Scharfenberg		
	Tensile force	1000.0000	kN
	Compressive force	1500.0000	kN
4.9.2 Axle bearing condition monitoring (hot axles box detection) RC	Detectable by line side		
4.12.3.1 Platform heights for which the vehicle is designed. RC	250 - 550 mm	mm	
4.14.1 Type of train detection systems for which the vehicle has been designed and assessed RC	Track circuits Axle counters		