Section 1: General Information

0. Identification of the type

0.1 0.2 0.4 Type ID:	13-014-0002-2-001-001
0.3 Date of record:	2020-11-19

1. General Information

1.1 Type name:	Z56700 – 110m – V200
1.2 Alternative type name:	Régio2N ZL V200 IC OCE

1.3 Manufacturer:

1.3.1 Manufacturer identification data:

1.3.1.1 Name of organisation:	Bombardier Transport
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 Place des Ateliers BP1
1.3.2.2 Town:	CRESPIN
1.3.2.3 Country code:	87
1.3.2.4 Post code:	59154
1.3.2.5 E-mail address:	

Registration Method:	New Version of a registered Type Directive 2008/57/EC
Registered Vehicle Type:	13-014-0002-2-001
1.4 Category:	Traction vehicles
1.5 Subcategory:	Self-propelled passenger trainset (incl. railbusses)
1.6 Platform:	Z56500

Section 2: Conformity with TSI

2.1 Conformity with TSI and Sections not complied with:

1435mm / AC 25kV-50Hz / Crocodile	**CR LOC & PAS (Dec 2011/291/EU)** **HS+CR PRM (Dec 2008/164/EC)** **HS+CR SRT (Dec 2008/163/EC amended by Dec 2011/291/EU)** **HS RST (Dec 2008/232/EC)**
1435mm / AC 25kV-50Hz / KVB	**CR LOC & PAS (Dec 2011/291/EU)** **HS+CR PRM (Dec 2008/164/EC)** **HS+CR SRT (Dec 2008/163/EC amended by Dec 2011/291/EU)** **HS RST (Dec 2008/232/EC)**

1435mm / DC 1.5kV (Specific Case FR) / Crocodile	**CR LOC & PAS (Dec 2011/291/EU)** **HS+CR PRM (Dec 2008/164/EC)** **HS+CR SRT (Dec 2008/163/EC amended by Dec 2011/291/EU)** **HS RST (Dec 2008/232/EC)**
1435mm / DC 1.5kV (Specific Case FR) / KVB	**CR LOC & PAS (Dec 2011/291/EU)** **HS+CR PRM (Dec 2008/164/EC)** **HS+CR SRT (Dec 2008/163/EC amended by Dec 2011/291/EU)** **HS RST (Dec 2008/232/EC)**

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	1615/6/SH1/2019/RST/FREN/101006MR-123
Reference of 'EC type examination certificates' - if module SB applied - and/or 'design verification certificate' - if module SH1 applied	1615/2/SH1/2019/RST/FREN/101006MR-121
Reference of 'EC type examination certificates' - if module SB applied - and/or 'design verification certificate' - if module SH1 applied	1615/4/SH1/2019/RST/FREN/101006MR-122

Section 3: Authorisations

France

3.0 Area Of Use:	FR(France)
3.1.1 Member state of authorisation:	France(FR)
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:	
3.1.2.4 Non-coded conditions for use and other restrictions:	
3.1.3.1.1 Date of the original authorisation:	2020-10-22

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:	SNCF Voyageurs
3.1.3.1.2.1.2 Registered business number:	FR88519037584
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:	Tour Incity, 116 cours Lafayette CS13511

3.1.3.1.2.2.2 Town:	LYON
3.1.3.1.2.2.3 Country code:	87
3.1.3.1.2.2.4 Post code:	69849
3.1.3.1.2.2.5 E-mail address:	bertrand.camus@sncf.fr
3.1.3.1.3 Authorisation document reference:	FR5920181006
3.1.3.1.4 Certificate of verification : Reference of type examination or design examination type:	1615/1/SB/20 20/RST/FREN/ 19070107MR-1
3.1.3.1.5 Parameters for which conformity to applicable national rules has been assessed:	1435mm / AC 25kV-50Hz / Crocodile 0.0 None 1435mm / AC 25kV-50Hz / KVB 0.0 None 1435mm / DC 1.5kV (Specific Case FR) / Crocodile 0.0 None 1435mm / DC 1.5kV (Specific Case FR) / KVB 0.0 None
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:	déclaration de SNCF Voyageurs - direction générale TER du 14/03/2018

3.1.3.1 Initial Registration

3.1.2.3 Coded conditions for use and other restrictions:	
3.1.2.4 Non-coded conditions for use and other restrictions:	
3.1.3.1.1 Date of the original authorisation:	2020-10-22

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:	SNCF Voyageurs
3.1.3.1.2.1.2 Registered business number:	FR88519037584
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:	Tour Incity, 116 cours Lafayette CS13511

3.1.3.1.2.2.2 Town:	LYON
3.1.3.1.2.2.3 Country code:	87
3.1.3.1.2.2.4 Post code:	69849
3.1.3.1.2.2.5 E-mail address:	bertrand.camus@sncf.fr
3.1.3.1.3 Authorisation document reference:	FR5920181006
3.1.3.1.4 Certificate of verification : Reference of type examination or design examination type:	1615/1/SB/2020/RST/FREN/19070107MR-1
3.1.3.1.5 Parameters for which conformity to applicable national rules has been assessed:	1435mm / AC 25kV-50Hz / Crocodile 0.0 None 1435mm / AC 25kV-50Hz / KVB 0.0 None 1435mm / DC 1.5kV (Specific Case FR) / Crocodile 0.0 None 1435mm / DC 1.5kV (Specific Case FR) / KVB 0.0 None
3.1.3.1.7 Reference to the written declaration by the proposer referred to in Article 3(11) of Regulation (EU) 402/2013:	déclaration de SNCF Voyageurs - direction générale TER du 14/03/2018

Section 4: Technical Characteristics

4.1.3 Wheel set gauge RC	1435	mm
4.1.12 Number of vehicles composing the fixed formation (for fixed formation only)	8	

4.13.1 Signalling

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

4.13.2 Radio

4.13.2.1 GSM-R Radio voice on board and its Baseline RC		Regulation 2016/919 Set_1 (8.0.0/16.0.0)			
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		RSC-NP-CCS7. 4a			
4.13.2.6 Voice and operational communication implementation RC		Cab radio 1KM3			
4.13.2.7 GSM-R Radio Data communication on board and its Baseline RC		None			
4.13.2.8 Radio Data System Compatibility		Not applicable			
4.13.2.10 Voice SIM Card GSM-R Home Network		GSM-R F (France)			
4.13.2.12 Voice SIM Card support of Group ID 555		False			
4.10.1 Energy supply system (voltage and frequency) RC		AC 25kV-50Hz DC 1.5kV (Specific Case FR)			
4.10.4 Maximum current at standstill per pantograph (to be indicated for each DC systems the vehicle is equipped for)	DC 1.5kV (Specific Case FR)	300	A		
4.10.5 Height of interaction of pantograph with contact wires (over top of rail) (to be indicated for each energy supply system the vehicle is equipped for) RC	AC 25kV-50Hz	0004.50	m	0006.50	m
	DC 1.5kV (Specific Case FR)	0004.50	m	0006.50	m
4.10.6 Pantograph head geometry (to be indicated for each energy supply system the vehicle is equipped for) RC	AC 25kV-50Hz	1600	mm		
	DC 1.5kV (Specific Case FR)	1950	mm		

4.10.7 Number of pantographs in contact with the overhead contact line (OCL) (to be indicated for each energy supply system the vehicle is equipped for) RC	AC 25kV-50Hz	1	
	DC 1.5kV (Specific Case FR)	1	
4.10.10 Material of pantograph contact strip the vehicle may be equipped with (to be indicated for each energy supply system the vehicle is equipped for) RC	AC 25kV-50Hz	Plan carbon	
	DC 1.5kV (Specific Case FR)	If permitted by RINF: impregnated carbon with cladded copper are allowed	
4.10.11 Automatic dropping device (ADD) fitted (to be indicated for each energy supply system the vehicle is equipped for) RC	AC 25kV-50Hz	True	
	DC 1.5kV (Specific Case FR)	True	
4.10.14 Electric units equipped with power or current limitation function RC	1435mm / AC 25kV-50Hz / Crocodile	True	
	1435mm / AC 25kV-50Hz / KVB	True	
	1435mm / DC 1.5kV (Specific Case FR) / Crocodile	True	
	1435mm / DC 1.5kV (Specific Case FR) / KVB	True	
4.10.15 Mean contact force RC	1435mm / AC 25kV-50Hz / Crocodile	70	N
	1435mm / AC 25kV-50Hz / KVB	85	N
	1435mm / DC 1.5kV (Specific Case FR) / Crocodile	70	N
	1435mm / DC 1.5kV (Specific Case FR) / KVB	85	N

4.1.2 Speed

4.1.2.1 Maximum design speed	1435mm / AC 25kV-50Hz / Crocodile	200	km/h
	1435mm / AC 25kV-50Hz / KVB	200	km/h
	1435mm / DC 1.5kV (Specific Case FR) / Crocodile	200	km/h
	1435mm / DC 1.5kV (Specific Case FR) / KVB	200	km/h

4.1.5 Maximum number of trainsets or locomotives coupled together in multiple operation.	1435mm / AC 25kV-50Hz / Crocodile	2	
	1435mm / AC 25kV-50Hz / KVB	2	
	1435mm / DC 1.5kV (Specific Case FR) / Crocodile	2	
	1435mm / DC 1.5kV (Specific Case FR) / KVB	2	
4.2.1 Reference profile RC		Gauge 3.3	
4.3.1 Temperature range		T1 (-25 to +40)	
4.3.3 Snow, ice and hail conditions		Nominal	
4.4.1 Fire safety category RC		A	

4.5.2 Design mass

4.5.2.1 Design mass in working order RC		264325	kg
4.5.2.2 Design mass under normal payload RC		288069	kg
4.5.2.3 Design mass under exceptional payload RC		333279	kg

4.5.3 Static axle load

4.5.3.1 Static axle load in working order RC		16695	kg
4.5.3.2 Static axle load under normal payload RC		16862	kg
4.5.3.3 Static axle load under exceptional payload RC		19021	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 / AC 25kV-50Hz / Crocodile	a: 0002,40 b: 0002,89 c: 0012,64	m
	1435mm / AC 25kV-50Hz / KVB	a: 0002,40 b: 0002,89 c: 0012,64	m
	1435mm / DC 1.5kV (Specific Case FR) / Crocodile	a: 0002,40 b: 0002,89 c: 0012,64	m
	1435mm / DC 1.5kV (Specific Case FR) / KVB	a: 0002,40 b: 0002,89 c: 0012,64	m

4.5.5 Total vehicle mass (for each vehicle of the unit) RC	1435mm / AC 25kV-50Hz / Crocodile	264325	kg		
	1435mm / AC 25kV-50Hz / KVB	264325	kg		
	1435mm / DC 1.5kV (Specific Case FR) / Crocodile	264325	kg		
	1435mm / DC 1.5kV (Specific Case FR) / KVB	264325	kg		
4.5.6 Mass per wheel RC	1435mm / AC 25kV-50Hz / Crocodile	16862	kg		
	1435mm / AC 25kV-50Hz / KVB	16862	kg		
	1435mm / DC 1.5kV (Specific Case FR) / Crocodile	16862	kg		
	1435mm / DC 1.5kV (Specific Case FR) / KVB	16862	kg		
4.6.4 Combination of maximum speed and maximum cant deficiency for which the vehicle was assessed RC	1435mm / AC 25kV-50Hz / Crocodile	0200,00	km/h	0150,00	mm
	1435mm / AC 25kV-50Hz / KVB	0200,00	km/h	0150,00	mm
	1435mm / DC 1.5kV (Specific Case FR) / Crocodile	0200,00	km/h	0150,00	mm
	1435mm / DC 1.5kV (Specific Case FR) / KVB	0200,00	km/h	0150,00	mm
4.6.5 Rail inclination RC	1435mm / AC 25kV-50Hz / Crocodile	1/20			
	1435mm / AC 25kV-50Hz / KVB	1/20			
	1435mm / DC 1.5kV (Specific Case FR) / Crocodile	1/20			
	1435mm / DC 1.5kV (Specific Case FR) / KVB	1/20			
4.7.1 Maximum average deceleration		1.07	m/s^2		

4.7.2.1 Brake performance on steep gradients with normal payload

4.7.2.1.2 Speed (if no reference case is indicated)		80	km/h
4.7.2.1.3 Gradient (if no reference case is indicated)		27	‰ (mm/m)

4.7.2.1.4 Distance (if no reference case is indicated)		25	km
4.7.2.1.6 Maximum brake thermal energy capacity	1435mm / AC 25kV-50Hz / Crocodile	48600	kJ
	1435mm / AC 25kV-50Hz / KVB	48600	kJ
	1435mm / DC 1.5kV (Specific Case FR) / Crocodile	48600	kJ
	1435mm / DC 1.5kV (Specific Case FR) / KVB	48600	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)	5.9	‰ (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	True
4.7.4.2.2 Possibility of preventing the use of the magnetic track brake (only if fitted with magnetic brake) RC	True

4.7.4.3 Regenerative brake (only for vehicles with electrical traction)

4.7.4.3.1 Regenerative brake fitted RC	True
4.7.4.3.2 Possibility of preventing the use of the regenerative brake (only if fitted with regenerative brake) RC	True

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 / AC 25kV-50Hz / Crocodile	a: 1546,00	m	0001,04	m/s²
		b: 1597,00	m	0001,01	m/s²
		c: 1662,00	m	0000,96	m/s²
	1435mm / AC 25kV-50Hz / KVB	a: 1546,00	m	0001,04	m/s²
		b: 1597,00	m	0001,01	m/s²
		c: 1662,00	m	0000,96	m/s²
	1435mm / DC 1.5kV (Specific Case FR) / Crocodile	a: 1546,00	m	0001,04	m/s²
		b: 1597,00	m	0001,01	m/s²
		c: 1662,00	m	0000,96	m/s²
	1435mm / DC 1.5kV (Specific Case FR) / KVB	a: 1546,00	m	0001,04	m/s²
		b: 1597,00	m	0001,01	m/s²
		c: 1662,00	m	0000,96	m/s²
4.7.6 For general operation : Brake weight percentage (lambda) or Braked mass	1435mm / AC 25kV-50Hz / Crocodile	,	(%) or	00324,00	tonnes
	1435mm / AC 25kV-50Hz / KVB	,	(%) or	00324,00	tonnes
	1435mm / DC 1.5kV (Specific Case FR) / Crocodile	,	(%) or	00324,00	tonnes
	1435mm / DC 1.5kV (Specific Case FR) / KVB	,	(%) or	00324,00	tonnes
4.7.7 Service brake: At maximum service brake: Stopping distance, Maximum deceleration, for the load condition 'design mass under normal payload' at the design maximum speed.	1435mm / AC 25kV-50Hz / Crocodile	1236,00	m	0001,07	m/s²
	1435mm / AC 25kV-50Hz / KVB	1236,00	m	0001,07	m/s²
	1435mm / DC 1.5kV (Specific Case FR) / Crocodile	1236,00	m	0001,07	m/s²
	1435mm / DC 1.5kV (Specific Case FR) / KVB	1236,00	m	0001,07	m/s²
4.7.8 Wheel slide protection system	1435mm / AC 25kV-50Hz / Crocodile	True			
	1435mm / AC 25kV-50Hz / KVB	True			
	1435mm / DC 1.5kV (Specific Case FR) / Crocodile	True			
	1435mm / DC 1.5kV (Specific Case FR) / KVB	True			
4.8.1 Vehicle length		110	m		

4.8.2 Minimum in-service wheel diameter RC		770	mm
4.8.4 Minimum horizontal curve radius capability RC		150	m
4.8.5 Minimum vertical convex curve radius capability		500	m
4.8.6 Minimum vertical concave curve radius capability		500	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		385	mm
		550	mm
		760	mm
4.14.1 Type of train detection systems for which the vehicle has been designed and assessed RC		Track circuits	
		Axle counters	