

Mr Steve Leigh
Program Manager
Network Rail Telecoms
The Quadrant, Level 2 Caldecotte,
Eldergate
Milton Keynes
Buckinghamshire
MK9 1HA

Your Ref : OP158365
R00006

Case Ref : PRM-IOP-0333

EIN Number : As listed

Date: 16th July 2020

Contact: Stephen Williams
3rd Floor, Mallard House, Kings Pool,
1-2 Peasholme Green,
York.
YO1 7PX.

Dear Steve,

**THE RAILWAYS (INTEROPERABILITY) REGULATIONS 2011, AS AMENDED
TYPE AUTHORISATION OF GSMR V4.0 FITTED TO THE VEHICLES LISTED IN
THIS LETTER IN CONFORMITY WITH EUROPEAN REGISTER OF AUTHORISED
TYPE REFERENCE 11-095-0001-5-001.**

I refer to your application for type authorisation, received on 30th June 2020. Following a review of your application, I can confirm that ORR grants an authorisation under regulation 9 of the Railways (Interoperability) Regulations 2011, as amended.

This authorisation is for the placing in service of V4.0 GSM-R Cab Mobile sub system fitted with an interference resistant transceiver. In addition, there is an option to replace the current GSM-R antenna with a combined GSM-R/GPS antenna and to fit and additional LTE antenna.

- GSM-R Cab Mobile Type - GSM-R V4.0 Cab Mobile SVR400+ with NR4.0 software (Build 1127) which incorporate an ETSI TS 102 933 V 2.1.1 compliant transceiver.
- GSM-R/GPS antenna (Fitment of combined GSM-R/GPS antennae is optional)
 - Huber & Suhner – SWA-0825/360/5/30/DFRX30
 - Polomarconi – BGLD1/S
- LTE antenna (Fitment of LTE antennae is optional)
 - Huber & Suhner – SWA-0825/360/5/30/MIMO
 - Panorama Antennas – TRNM-7-60-NJ
 - Polomarconi – T01811814

- Huber & Suhner – Sencity Rail MIMO Antenna 1399.17.0222

This conforms to European Register of Authorised Types (ERATV) type 11-095-0001-5-001

This authorisation applies to the following inclusive.

Operator	Class	Vehicle	Cab	V4.0 Installation Date	EIN
Arriva Rail London	378	378135	A	27/06/2020	UK/51/2020/0039
Arriva Rail London	378	378135	B	27/06/2020	UK/51/2020/0039
Arriva Rail London	378	378138	A	27/06/2020	UK/51/2020/0039
Arriva Rail London	378	378138	B	27/06/2020	UK/51/2020/0039
Arriva Rail London	378	378144	A	27/06/2020	UK/51/2020/0039
Arriva Rail London	378	378144	B	27/06/2020	UK/51/2020/0039
Arriva Rail London	378	378153	A	27/06/2020	UK/51/2020/0039
Arriva Rail London	378	378153	B	27/06/2020	UK/51/2020/0039
Arriva Rail London	378	378215	A	27/06/2020	UK/51/2020/0039
Arriva Rail London	378	378215	B	27/06/2020	UK/51/2020/0039
Babcock	075	075013	A	27/06/2020	UK/51/2020/0016
Babcock	075	075013	B	27/06/2020	UK/51/2020/0016
Crossrail	315	315819	A	27/06/2020	UK/51/2020/0030
Crossrail	315	315819	B	27/06/2020	UK/51/2020/0030
Crossrail	345	345001	A	27/06/2020	UK/51/2020/0020
Crossrail	345	345001	B	27/06/2020	UK/51/2020/0020
Crossrail	345	345009	A	27/06/2020	UK/51/2020/0020
Crossrail	345	345009	B	27/06/2020	UK/51/2020/0020
Crossrail	345	345011	A	27/06/2020	UK/51/2020/0020
Crossrail	345	345011	B	27/06/2020	UK/51/2020/0020
Crossrail	345	345018	A	27/06/2020	UK/51/2020/0020
Crossrail	345	345018	B	27/06/2020	UK/51/2020/0020
Crossrail	345	345019	A	27/06/2020	UK/51/2020/0020
Crossrail	345	345019	B	27/06/2020	UK/51/2020/0020
Crossrail	345	345020	A	27/06/2020	UK/51/2020/0020
Crossrail	345	345020	B	27/06/2020	UK/51/2020/0020
Crossrail	345	345026	A	27/06/2020	UK/51/2020/0020
Crossrail	345	345026	B	27/06/2020	UK/51/2020/0020
Crossrail	345	345038	A	27/06/2020	UK/51/2020/0020



Crossrail	345	345038	B	27/06/2020	UK/51/2020/0020
Crossrail	345	345039	A	27/06/2020	UK/51/2020/0020
Crossrail	345	345039	B	27/06/2020	UK/51/2020/0020
Crossrail	345	345042	A	27/06/2020	UK/51/2020/0020
Crossrail	345	345042	B	27/06/2020	UK/51/2020/0020
Crossrail	345	345045	A	27/06/2020	UK/51/2020/0020
Crossrail	345	345045	B	27/06/2020	UK/51/2020/0020
Crossrail	345	345046	A	27/06/2020	UK/51/2020/0020
Crossrail	345	345046	B	27/06/2020	UK/51/2020/0020
Crossrail	345	345048	A	27/06/2020	UK/51/2020/0020
Crossrail	345	345048	B	27/06/2020	UK/51/2020/0020
Crossrail	345	345049	A	27/06/2020	UK/51/2020/0020
Crossrail	345	345049	B	27/06/2020	UK/51/2020/0020
Crossrail	345	345053	A	27/06/2020	UK/51/2020/0020
Crossrail	345	345053	B	27/06/2020	UK/51/2020/0020
Crossrail	345	345054	A	27/06/2020	UK/51/2020/0020
Crossrail	345	345054	B	27/06/2020	UK/51/2020/0020
Crossrail	345	345056	A	27/06/2020	UK/51/2020/0020
Crossrail	345	345056	B	27/06/2020	UK/51/2020/0020
Crossrail	345	345060	A	27/06/2020	UK/51/2020/0020
Crossrail	345	345060	B	27/06/2020	UK/51/2020/0020
Freightliner	66	66505	A	27/06/2020	UK/51/2020/0001
Freightliner	66	66525	A	27/06/2020	UK/51/2020/0001
Freightliner	66	66529	A	27/06/2020	UK/51/2020/0001
Freightliner	66	66532	A	27/06/2020	UK/51/2020/0001
Freightliner	66	66557	A	27/06/2020	UK/51/2020/0001
Freightliner	66	66956	A	27/06/2020	UK/51/2020/0001
Freightliner	90	90006	A	27/06/2020	UK/51/2020/0004
Freightliner	90	90014	A	27/06/2020	UK/51/2020/0004
Freightliner	90	90049	A	27/06/2020	UK/51/2020/0004
Govia Thameslink Railway	171	171806	A	27/06/2020	UK/51/2020/0005
Govia Thameslink Railway	171	171806	B	27/06/2020	UK/51/2020/0005
Govia Thameslink Railway	377	377108	A	27/06/2020	UK/51/2020/0008
Govia Thameslink Railway	377	377108	B	27/06/2020	UK/51/2020/0008
Govia Thameslink Railway	377	377109	A	27/06/2020	UK/51/2020/0008
Govia Thameslink Railway	377	377109	B	27/06/2020	UK/51/2020/0008
Govia Thameslink Railway	377	377115	A	27/06/2020	UK/51/2020/0008
Govia Thameslink Railway	377	377130	A	27/06/2020	UK/51/2020/0008
Govia Thameslink Railway	377	377130	B	27/06/2020	UK/51/2020/0008
Govia Thameslink Railway	377	377146	A	27/06/2020	UK/51/2020/0008



Govia Thameslink Railway	377	377146	B	27/06/2020	UK/51/2020/0008
Govia Thameslink Railway	377	377148	A	27/06/2020	UK/51/2020/0008
Govia Thameslink Railway	377	377148	B	27/06/2020	UK/51/2020/0008
Govia Thameslink Railway	377	377150	A	27/06/2020	UK/51/2020/0008
Govia Thameslink Railway	377	377150	B	27/06/2020	UK/51/2020/0008
Govia Thameslink Railway	377	377403	A	27/06/2020	UK/51/2020/0008
Govia Thameslink Railway	377	377403	B	27/06/2020	UK/51/2020/0008
Govia Thameslink Railway	377	377412	A	27/06/2020	UK/51/2020/0008
Govia Thameslink Railway	377	377412	B	27/06/2020	UK/51/2020/0008
Govia Thameslink Railway	377	377422	A	27/06/2020	UK/51/2020/0008
Govia Thameslink Railway	377	377422	B	27/06/2020	UK/51/2020/0008
Govia Thameslink Railway	377	377426	A	27/06/2020	UK/51/2020/0008
Govia Thameslink Railway	377	377426	B	27/06/2020	UK/51/2020/0008
Govia Thameslink Railway	377	377433	A	27/06/2020	UK/51/2020/0008
Govia Thameslink Railway	377	377433	B	27/06/2020	UK/51/2020/0008
Govia Thameslink Railway	377	377437	A	27/06/2020	UK/51/2020/0008
Govia Thameslink Railway	377	377437	B	27/06/2020	UK/51/2020/0008
Govia Thameslink Railway	377	377439	A	27/06/2020	UK/51/2020/0008
Govia Thameslink Railway	377	377439	B	27/06/2020	UK/51/2020/0008
Govia Thameslink Railway	377	377455	B	27/06/2020	UK/51/2020/0008
Govia Thameslink Railway	377	377458	A	27/06/2020	UK/51/2020/0008
Govia Thameslink Railway	377	377458	B	27/06/2020	UK/51/2020/0008
Govia Thameslink Railway	377	377465	A	27/06/2020	UK/51/2020/0008
Govia Thameslink Railway	377	377465	B	27/06/2020	UK/51/2020/0008
Govia Thameslink Railway	377	377468	A	27/06/2020	UK/51/2020/0008
Govia Thameslink Railway	377	377468	B	27/06/2020	UK/51/2020/0008
Govia Thameslink Railway	377	377611	A	27/06/2020	UK/51/2020/0008
Govia Thameslink Railway	377	377611	B	27/06/2020	UK/51/2020/0008
Govia Thameslink Railway	377	377701	A	27/06/2020	UK/51/2020/0008
Govia Thameslink Railway	377	377701	B	27/06/2020	UK/51/2020/0008
Govia Thameslink Railway	455	455812	A	27/06/2020	UK/51/2020/0010
Govia Thameslink Railway	455	455812	B	27/06/2020	UK/51/2020/0010
Govia Thameslink Railway	455	455821	A	27/06/2020	UK/51/2020/0010
Govia Thameslink Railway	455	455821	B	27/06/2020	UK/51/2020/0010
Govia Thameslink Railway	455	455825	A	27/06/2020	UK/51/2020/0010
Govia Thameslink Railway	455	455825	B	27/06/2020	UK/51/2020/0010
Govia Thameslink Railway	455	455827	A	27/06/2020	UK/51/2020/0010
Govia Thameslink Railway	455	455827	B	27/06/2020	UK/51/2020/0010
Govia Thameslink Railway	455	455834	A	27/06/2020	UK/51/2020/0010
Govia Thameslink Railway	455	455834	B	27/06/2020	UK/51/2020/0010

Govia Thameslink Railway	455	455835	A	27/06/2020	UK/51/2020/0010
Govia Thameslink Railway	455	455835	B	27/06/2020	UK/51/2020/0010
Govia Thameslink Railway	455	455836	A	27/06/2020	UK/51/2020/0010
Govia Thameslink Railway	455	455836	B	27/06/2020	UK/51/2020/0010
Govia Thameslink Railway	73	73202	A	27/06/2020	UK/51/2020/0018
Govia Thameslink Railway	73	73202	B	27/06/2020	UK/51/2020/0018
South Western Railway	158	158880	A	27/06/2020	UK/51/2020/0013
South Western Railway	158	158880	B	27/06/2020	UK/51/2020/0013
South Western Railway	158	158882	A	27/06/2020	UK/51/2020/0013
South Western Railway	158	158882	B	27/06/2020	UK/51/2020/0013
South Western Railway	158	158884	A	27/06/2020	UK/51/2020/0013
South Western Railway	158	158884	B	27/06/2020	UK/51/2020/0013
South Western Railway	158	158885	A	27/06/2020	UK/51/2020/0013
South Western Railway	158	158885	B	27/06/2020	UK/51/2020/0013
South Western Railway	158	158886	A	27/06/2020	UK/51/2020/0013
South Western Railway	158	158886	B	27/06/2020	UK/51/2020/0013
South Western Railway	158	158887	A	27/06/2020	UK/51/2020/0013
South Western Railway	158	158887	B	27/06/2020	UK/51/2020/0013
South Western Railway	158	158888	A	27/06/2020	UK/51/2020/0013
South Western Railway	158	158888	B	27/06/2020	UK/51/2020/0013
South Western Railway	159	159001	A	27/06/2020	UK/51/2020/0040
South Western Railway	159	159001	B	27/06/2020	UK/51/2020/0040
South Western Railway	159	159006	A	27/06/2020	UK/51/2020/0040
South Western Railway	159	159006	B	27/06/2020	UK/51/2020/0040
South Western Railway	159	159008	A	27/06/2020	UK/51/2020/0040
South Western Railway	159	159008	B	27/06/2020	UK/51/2020/0040
South Western Railway	159	159009	A	27/06/2020	UK/51/2020/0040
South Western Railway	159	159009	B	27/06/2020	UK/51/2020/0040
South Western Railway	159	159010	A	27/06/2020	UK/51/2020/0040
South Western Railway	159	159010	B	27/06/2020	UK/51/2020/0040
South Western Railway	159	159015	A	27/06/2020	UK/51/2020/0040
South Western Railway	159	159015	B	27/06/2020	UK/51/2020/0040
South Western Railway	159	159017	A	27/06/2020	UK/51/2020/0040
South Western Railway	159	159017	B	27/06/2020	UK/51/2020/0040
South Western Railway	159	159018	A	27/06/2020	UK/51/2020/0040
South Western Railway	159	159018	B	27/06/2020	UK/51/2020/0040
South Western Railway	159	159020	A	27/06/2020	UK/51/2020/0040
South Western Railway	159	159020	B	27/06/2020	UK/51/2020/0040
South Western Railway	159	159102	A	27/06/2020	UK/51/2020/0040
South Western Railway	159	159102	B	27/06/2020	UK/51/2020/0040

South Western Railway	159	159103	A	27/06/2020	UK/51/2020/0040
South Western Railway	159	159103	B	27/06/2020	UK/51/2020/0040
South Western Railway	159	159104	A	27/06/2020	UK/51/2020/0040
South Western Railway	159	159104	B	27/06/2020	UK/51/2020/0040
South Western Railway	159	159105	A	27/06/2020	UK/51/2020/0040
South Western Railway	159	159105	B	27/06/2020	UK/51/2020/0040
South Western Railway	159	159106	A	27/06/2020	UK/51/2020/0040
South Western Railway	159	159106	B	27/06/2020	UK/51/2020/0040
South Western Railway	159	159107	A	27/06/2020	UK/51/2020/0040
South Western Railway	159	159107	B	27/06/2020	UK/51/2020/0040
South Western Railway	159	159108	A	27/06/2020	UK/51/2020/0040
South Western Railway	159	159108	B	27/06/2020	UK/51/2020/0040
Southeastern	377	377501	A	27/06/2020	UK/51/2020/0008
Southeastern	377	377501	B	27/06/2020	UK/51/2020/0008
Southeastern	377	377503	A	27/06/2020	UK/51/2020/0008
Southeastern	377	377503	B	27/06/2020	UK/51/2020/0008
Southeastern	377	377505	A	27/06/2020	UK/51/2020/0008
Southeastern	377	377505	B	27/06/2020	UK/51/2020/0008
Southeastern	377	377507	A	27/06/2020	UK/51/2020/0008
Southeastern	377	377507	B	27/06/2020	UK/51/2020/0008
Southeastern	377	377509	A	27/06/2020	UK/51/2020/0008
Southeastern	377	377509	B	27/06/2020	UK/51/2020/0008
Southeastern	377	377513	A	27/06/2020	UK/51/2020/0008
Southeastern	377	377513	B	27/06/2020	UK/51/2020/0008
Southeastern	377	377515	A	27/06/2020	UK/51/2020/0008
Southeastern	377	377515	B	27/06/2020	UK/51/2020/0008
Southeastern	466	466018	A	27/06/2020	UK/51/2020/0041
Southeastern	466	466018	B	27/06/2020	UK/51/2020/0041
Transport for Wales	230	230008	A	27/06/2020	UK/51/2020/0014
Transport for Wales	230	230008	B	27/06/2020	UK/51/2020/0014
Vivarail	230	230002	A	27/06/2020	UK/51/2020/0014
Vivarail	230	230002	B	27/06/2020	UK/51/2020/0014
West Midlands Trains	172	172214	A	27/06/2020	UK/51/2020/0029
West Midlands Trains	172	172214	B	27/06/2020	UK/51/2020/0029
West Midlands Trains	172	172220	A	27/06/2020	UK/51/2020/0029
West Midlands Trains	172	172220	B	27/06/2020	UK/51/2020/0029
West Midlands Trains	172	172222	A	27/06/2020	UK/51/2020/0029
West Midlands Trains	172	172222	B	27/06/2020	UK/51/2020/0029
West Midlands Trains	172	172335	A	27/06/2020	UK/51/2020/0029
West Midlands Trains	172	172335	B	27/06/2020	UK/51/2020/0029

West Midlands Trains	172	172341	A	27/06/2020	UK/51/2020/0029
West Midlands Trains	172	172341	B	27/06/2020	UK/51/2020/0029
West Midlands Trains	172	172342	A	27/06/2020	UK/51/2020/0029
West Midlands Trains	172	172342	B	27/06/2020	UK/51/2020/0029
West Midlands Trains	172	172343	A	27/06/2020	UK/51/2020/0029
West Midlands Trains	172	172343	B	27/06/2020	UK/51/2020/0029
West Midlands Trains	230	230004	A	27/06/2020	UK/51/2020/0014
West Midlands Trains	230	230004	B	27/06/2020	UK/51/2020/0014
West Midlands Trains	230	230005	A	27/06/2020	UK/51/2020/0014
West Midlands Trains	230	230005	B	27/06/2020	UK/51/2020/0014
West Midlands Trains	323	323214	A	27/06/2020	UK/51/2020/0025
West Midlands Trains	323	323214	B	27/06/2020	UK/51/2020/0025
West Midlands Trains	323	323217	A	27/06/2020	UK/51/2020/0025
West Midlands Trains	323	323217	B	27/06/2020	UK/51/2020/0025
West Midlands Trains	323	323241	A	27/06/2020	UK/51/2020/0025
West Midlands Trains	323	323241	B	27/06/2020	UK/51/2020/0025
West Midlands Trains	350	350101	A	27/06/2020	UK/51/2020/0026
West Midlands Trains	350	350101	B	27/06/2020	UK/51/2020/0026
West Midlands Trains	350	350108	A	27/06/2020	UK/51/2020/0026
West Midlands Trains	350	350108	B	27/06/2020	UK/51/2020/0026
West Midlands Trains	350	350109	A	27/06/2020	UK/51/2020/0026
West Midlands Trains	350	350109	B	27/06/2020	UK/51/2020/0026
West Midlands Trains	350	350117	A	27/06/2020	UK/51/2020/0026
West Midlands Trains	350	350117	B	27/06/2020	UK/51/2020/0026
West Midlands Trains	350	350119	A	27/06/2020	UK/51/2020/0026
West Midlands Trains	350	350119	B	27/06/2020	UK/51/2020/0026
West Midlands Trains	350	350124	A	27/06/2020	UK/51/2020/0026
West Midlands Trains	350	350124	B	27/06/2020	UK/51/2020/0026
West Midlands Trains	350	350126	A	27/06/2020	UK/51/2020/0026
West Midlands Trains	350	350126	B	27/06/2020	UK/51/2020/0026
West Midlands Trains	350	350231	A	27/06/2020	UK/51/2020/0026
West Midlands Trains	350	350231	B	27/06/2020	UK/51/2020/0026
West Midlands Trains	350	350233	A	27/06/2020	UK/51/2020/0026
West Midlands Trains	350	350233	B	27/06/2020	UK/51/2020/0026
West Midlands Trains	350	350235	A	27/06/2020	UK/51/2020/0026
West Midlands Trains	350	350235	B	27/06/2020	UK/51/2020/0026
West Midlands Trains	350	350236	A	27/06/2020	UK/51/2020/0026
West Midlands Trains	350	350236	B	27/06/2020	UK/51/2020/0026
West Midlands Trains	350	350247	A	27/06/2020	UK/51/2020/0026
West Midlands Trains	350	350247	B	27/06/2020	UK/51/2020/0026

West Midlands Trains	350	350253	A	27/06/2020	UK/51/2020/0026
West Midlands Trains	350	350253	B	27/06/2020	UK/51/2020/0026
West Midlands Trains	350	350407	A	27/06/2020	UK/51/2020/0026
West Midlands Trains	350	350407	B	27/06/2020	UK/51/2020/0026
West Midlands Trains	350	350408	B	27/06/2020	UK/51/2020/0026

The restrictions or limitations of use on the structural subsystem are those referenced in the Determination of Type.

The rolling stock subsystem authorised by this letter must be operated and maintained in accordance with Regulation 20.

You should be aware that any future modifications to the authorised subsystem may constitute a 'renewal' or an 'upgrade' as defined in Regulation 2. If a project entity, in relation to the project, considers that the modification meets either of these definitions they may apply, in accordance with the provisions of Regulation 13, to the Department for Transport (DfT) for a decision on whether a new authorisation will be required. Should DfT decide that an authorisation is not required they must consult with ORR whether authorisation is required on safety grounds.

As the project entity you are responsible for retaining the declaration of conformity to an authorised type of railway vehicle, documentation recording any alterations, and maintenance manuals in relation to the subsystem, keeping them up to date and making them available to the ORR in accordance with Regulation 19.

If you are not the owner of the authorised subsystem you shall within 60 days, in accordance with Regulation 19(3), transfer the declaration of conformity to an authorised type of railway vehicle, documentation recording any alterations, and maintenance manuals in relation to the subsystem to the owner of the subsystem and the owner shall then be regarded as the project entity. If the owner, in accordance with Regulation 19(4), disposes of his interest in the authorised subsystem, he shall within 60 days of the disposal transfer the declaration of conformity to an authorised type of railway vehicle, documentation recording any alterations, and maintenance manuals in relation to the subsystem to the person acquiring that interest and that person shall be regarded as the project entity.

Please note that under Regulation 36, the person who applied for the authorisation shall send particulars to the Registration Entity to enable the registration entity to enter the information on the National Vehicle Register. This will include such further information as the registration entity may reasonably require set out in the relevant standard.

If you are the operator, may I remind you of the need to have adequate arrangements within your Safety Management System to control the risks associated with this rolling stock subsystem.

This decision letter will be published on ORR's website.

Yours sincerely



Steve Fletcher - ORR Deputy Director, Railway Planning and Performance.

Cc

Ian Jones	Head of Interoperability, Safety and Standards DfT
Ian Prosser	Director, Railway Safety
National Vehicle Register	nvr@networkrail.co.uk
David Galloway	Head of Vehicle Compatibility, Network Rail.
Pete Gracey	Head of Interoperability and Rail Vehicle Engineering, ORR.
Ian Maxwell	Head of Train Control Systems, ORR.