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Nick Rowe
Regulatory and Customer Manager
Amey Infrastructure Wales Limited

By email: nick.rowe@amey.co.uk

23 August 2023

Dear Nick

Transport for Wales Rail Ltd CVL Vehicle Change proposal: Class 398

This proposal is issued to Seilwaith Amey Cymru / Amey Infrastructure Wales Limited (**AIWL**) and each Access Beneficiary that may be affected by the implementation of the proposed CVL Vehicle Change in accordance with Condition F2.1(a) of the CVL Network Code and constitutes a formal proposal for a CVL Vehicle Change under that Condition.

Transport for Wales Rail Ltd (**TfW Rail**) wishes to implement the CVL Vehicle Change described above. This notice outlines the details of the proposed CVL Vehicle Change as required under Condition F2.2.

The proposed CVL Vehicle Change seeks to introduce Class 398 vehicles. A detailed specification of the scheme is set out in Appendix A to this letter.

In accordance with Condition F2.1 TfW Rail hereby gives permission for AIWL to consult with the persons specified in Condition F2.1(a). TfW Rail requests that AIWL completes the consultation process no longer than 90 days from the date upon which AIWL notifies the persons specified in condition F2.1(a) of the CVL Vehicle Change proposed under Condition F2.3.1(c) of the CVL Network Code. TfW Rail requires AIWL to comply with Conditions F2 and F3 to consult upon and respond to this proposal as necessary and provide a response to TfW Rail.

Please let me know if you require any further details.

Yours sincerely

Chris Dellard
Head of Access Planning

Appendix A

Reasons for proposed change
As part of its plans to introduce a Metro service to the Cardiff Valleys Network, Welsh Government is investing £738m to upgrade the infrastructure. This will help to improve passenger service frequencies and journey times. Another £800m is being invested in new train fleets for the whole of Wales, to provide greater capacity and more frequent services.

The CVL Network will have discontinuous electrification with permanently earthed sections past certain structures and stations. Services on the Taff Valleys (Treherbert, Aberdare and Merthyr, to Cardiff Central and Cardiff Bay, including the City Line) will be operated by new Class 398 tram-trains which will be maintained at a new depot at Taffs Well.

A complementary Class 398 Vehicle Change proposal will be progressed for the Network Rail Network in accordance with the Network Code.

TfW Rail intends that in due course the Vehicles will be added to its CVL Track Access Agreement as Specified Equipment.

Specification of Vehicles
The Class 398 Stadler 'Citylink' units are tram-trains comprising 3 passenger vehicles.

There will be 36 units as follows.

Passenger vehicles per unit	Formation	Total number of units	Unit numbers
3	DMS2, PTS, DMS1	36	398001 - 398036

- The units are powered by 25kV overhead lines via a single pantograph on the middle vehicle, which also charges the batteries that provide traction power when operating over non-electrified parts of the CVL Network, and over the Network Rail Network through Cardiff Central. Power source modes are:
    1. Overhead Line Equipment (OLE): 25kV AC catenary power supply.

2. Permanently Earthed Sections (PES): catenary with no power, OnBoard Energy Supply (OBES) power supply.
3. Catenary-free sections: OBES power supply.
4. Battery charging zones: low power 25kV catenary for battery charging only

All four power source modes will be used on the CVL Network.

- The Unit has one motor bogie per end vehicle and two trailer bogies on the intermediate vehicle.
- The units will have a maximum operating speed of 60mph in train mode and will be classified as RA1.
- The normal configuration in passenger service will be one unit.
- The maximum configuration in passenger service will be 3 units (subject to infrastructure constraints).
- The Maximum configuration as ECS will be 3 units.
- The tram-trains will switch between tram mode (line of sight operation) and train mode (conventional railway signalling) as appropriate. This is done manually in-cab.
- The fleet will be maintained at a new purpose-built Light Maintenance Depot at Taffs Well.
- Because the units have no toilets (due to space constraints and the Metro-style service frequency that the fleet will provide), additional passenger toilet facilities are to be constructed at stations on the CVL Network.

The key technical characteristics of the Class 398 units are:

Power source	25kV 50Hz AC overhead lines
RSL Designation	Class 398
Maximum Speed	60 mph (train mode) 45mph (tram mode)
Braking Capability	Compliant with Curve C2 as per GMRT2045
Differential speed Categories	MU & SP
Length of Unit (m)	40.07
Unit tare weight (t)	73.22
Height (m)	3.865 (with pantograph in rest position)
Width (m)	2.65
Axle unsprung mass (kg)	DMS: 10,000 PTS: 8,500
Coupling type	Type 330 automatic Scharfenberg coupler
Pantograph type	HSP MK2 Brecknell Willis
Route Availability	RA1
Doors	Passenger: One bi-parting sliding plug door centrally located per vehicle side (3 per side in total) Traincrew only: Both end vehicles have an exterior cab door located on the left-hand side
Seats	126 including tip-up
Toilets	None
Wheelslip protection	Yes including automatic sanding equipment

Details of where the Class 398s will operate

The routes that are the subject of this CVL Vehicle Change proposal are listed at the end of this Appendix A.

The Cl 398 units will be maintained by TfW Rail at the new Taffs Well Light Maintenance Depot. They will be stabled overnight at both Taffs Well LMD and Treherbert sidings.

Reliability and Contingency plans

Prior to entering full passenger service, the Class 398s will undergo a testing process consisting of:

- Factory tests routinely for all Units
- Dynamic type testing for the first Units, firstly on test tracks in RIDC, followed by testing on the UK network
- Operations proving runs on all routes
- UK static and dynamic commissioning routinely for all Units

- Fault-free running on all Units
- Mileage accumulation in service to achieve MTIN targets

Rescue and recovery is achieved by another Cl 398 Unit. There will always be other 398s in the vicinity.

Technical Acceptance
Technical compatibility at route level shall be demonstrated on behalf of TfW Rail by the vehicle manufacturer, Stadler Rail, in accordance with Rail Industry Standard RIS-8270-RST.

A Statement of Compatibility (SoC) for test purposes has been issued (ref AKI-HSEQ-AIWAP11-Cl398 Testing V2.0), included with this proposal at Appendix **B**. All testing and fault-free running will be conducted out of Taffs Well depot.

Details of Network and associated works required to facilitate CVL Vehicle Change
There are no special works required to facilitate Cl 398 introduction on to its planned routes of operation, beyond the Transformation works being delivered by AIWL.

Proposed timescales
The first units were delivered to Taffs Well depot in March 2023.

Introduction in passenger service is expected no earlier than November 2024.

The proposed timetable for the implementation of this CVL Vehicle Change is:

1. Formal Sponsor's Notice (this document) – 23 August 2023
2. AIWL Industry Consultation issued – 23 September 2023 at latest
3. Consultation period ends – 23 November 2023 at latest
4. Entry into Service (EIS) (Cl 398) – 1 November 2024 at earliest

Compatibility Review Forum
It is not considered necessary to convene a Compatibility Review Forum to discuss the Vehicle Change proposal itself. But a separate monthly Compatibility Forum already operates covering Compatibility issues – and if it becomes necessary, Vehicle Change can be added to this meeting's agenda. Or a separate Compatibility Review Forum can be convened if any consultee requests it.

Costs and compensation
TfW Rail does not believe that any costs to other Train Operators will arise as a result of this CVL Vehicle Change. If compensation is required to affected Access Beneficiaries, this will be paid by TfW Rail in accordance with Condition F3 of the CVL Network Code.

Additional terms and conditions
There are no additional terms and conditions.

Proposed Variation Procedure
None.

Any other material facts
There are no additional material facts.

List of CVL routes

				From		To	
Route	**Line of route**	**ELR**	**Description**	**M**	**Ch**	**M**	**Ch**
CVL	GW830	CAM	Merthyr Tydfil – Abercynon Jn	24	44	16	35
CVL	GW830	CAM	Abercynon Jn – Pontypridd Jn	16	35	13	4
CVL	GW830	CAM	Pontypridd Jn – Radyr Jn	13	4	5	23
CVL	GW830	CAM	Radyr Jn – Queen Street North Jn	5	23	1	17
CVL	GW830	CAM	Queen Street North Jn – Queen Street South Jn	1	17	0	66
CVL	GW830	CEJ	Queen Street South Jn – CVL East Boundary	0	22	0	13
CVL	GW834	VON / ALK	Aberdare – Cwmbach Change of ELR	22	34	20	68
CVL	GW834	ABD / MOA	Cwmbach Change of ELR – Abercynon Jn (Including Mountain Ash Down Loop ELR MOA)	22	1	16	35
CVL	GW835	THT	Treherbert – Pontypridd Jn	23	69	13	4
CVL	GW839	CAM	Queen Street South Jn – Cardiff Bay	0	66	0	2
CVL	GW840	RAD	Radyr Jn – CVL West Boundary	4	41	1	20
CVL	GW810	CAR	Ystrad Mynach – Heath Jn	14	0	3	32
CVL	GW810	CAR	Heath Jn – Cardiff Queen Street North Jn	3	32	1	22
CVL	GW828	CRY	Coryton – Heath Jn	2	57	0	15

Appendix B

Document provided separately

- AIW Summary of Compatibility (AKI-HSEQ-AIWAP11-Cl398 Testing V2.0)