



Wales and Borders Rail Service and South Wales Metro

Invitation to Submit Final Tender

Volume 6: Rolling Stock Requirements

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I. Introduction

Requirements

- I.1 Passenger perceptions of the quality of the rail vehicles they travel in are key to overall passenger satisfaction; the current rolling stock is old and attracts a large amount of criticism.
- I.2 The Authority expects that the ODP will transform passengers' experience by providing high quality rolling stock with sufficient capacity to meet passenger expectations for all Rail Services throughout the ODP Grant Agreement Term.
- I.3 Passenger growth has been greater than was forecast when the current rail service was let and sufficient capacity to meet passenger demand has not always been provided. It is important that your rolling stock proposals will provide sufficient capacity to meet the ODP's growing passenger demand and is flexible enough to respond to variations from the initial forecasts to meet actual capacity requirements for the Rail Services.
- I.4 The ODP will improve Rail Services across the network including the transformation of the CVL Rail Services into a faster, more frequent "turn up and go" service. It is anticipated that this will require the use of different vehicles from those used currently; vehicles more suited to deliver high frequency, rapid boarding/alighting and overall faster services with appropriate capacity to meet increasing demand.
- I.5 Improving passenger comfort is also a key objective including responding throughout the ODP Grant Agreement Term to the evolving needs of passengers and staff in areas such as electronic communications.
- I.6 The Authority is keen to adopt sustainable, environmentally-friendly traction modes across the Rail Services, as and when technology and costs permit, and to ensure that rolling stock maximises future flexibility so that technologies can be introduced when sufficiently mature, at low cost.
- I.7 You should assume a commitment to use that the Authority will commit to rolling stock usage (similar to section 54 of the Railways Act 1993) in respect of the rolling stock for the CVL Rail Services:
 - a) A commitment to use for 25 years;
 - b) You should seek fixed capital lease costs for the duration of the usage commitment;
 - c) As with all rolling stock capital leases in your submission, you should apply accounting standard IAS 17 for leases and should not apply accounting standard IFRS 16; and

- d) The usage commitment will not guarantee lease payments, which will remain the responsibility of the ODP.

PRM TSI

- 1.8 The Authority is committed to ensuring that all rolling stock meets the PRM TSI by 31st December 2019. You cannot assume any dispensation is granted and must therefore ensure that the standards set out in the PRM TSI are met by this deadline.
- 1.9 The Previous Franchisee has commenced work on PRM TSI compliance. You may assume that a programme of work will be committed to achieve compliance of 100% of Class 150 and 100% of Class 158 rolling stock by 31st December 2019. The successful Bidder will be expected to manage the delivery of the remaining programme of works.
- 1.10 [redacted]
- 1.11 [redacted]
- 1.12 [redacted]
- 1.13 [redacted]
- 1.14 [redacted]
- 1.15 [redacted]
[redacted].
- 1.16 [redacted].

Removal of Pacers

- 1.17 The Authority is keen to see rapid progress to address shortcomings in the existing rolling stock. Pacers (Class 14x) are a particular concern and a priority for replacement.
- 1.18 To address quality of service concerns related to the Pacers, you must ensure that you replace all Pacers with substantially improved rolling stock by 30th September 2020. This improvement could be delivered by new rolling stock or by cascade of rolling stock from elsewhere, noting that Pacers that remain in-service post 31st December 2019 must be PRM TSI compliant.
- 1.19 The Authority will allow the deployment of Pacers after September 2020 on services during Special Events, subject to the ODP's obligations under Schedule 1.2 of the ODP Grant Agreement and provided that any Pacer units deployed met the minimum requirements for the relevant Service Type.

2. Concepts

- 2.1 In this volume, the following terms and concepts are used:
- a) **Service Type:** one of:

- i) Long Distance/Express;
 - ii) Sprinter/Rural;
 - iii) Suburban; and
 - iv) CVL.
- b) **Rolling Stock Type:** a class of rolling stock (e.g. I58, I58 refurb).
- c) **Train Fleet:** all rolling stock used over time.
- 2.2 Some Responses are required for the Train Fleet as a whole, others are required by Service Type and others by Rolling Stock Type.

3. Rolling stock fleet summary

- R6.1** Summarise your proposal for the Train Fleet, describing details of the rolling stock that will form your proposed Solution. Your Response should include:
- a. A summary of your overall fleet strategy and approach to providing high quality rolling stock that meets passenger expectations for all services, with sufficient capacity to achieve high levels of passenger comfort and quality of service.
 - b. Details of each Rolling Stock Type, using clear and unique class names, including:
 - i) An external photograph indicative of the Rolling Stock Type;
 - ii) The relevant Service Type;
 - iii) A non-exhaustive summary of the key attributes and benefits of the proposed Rolling Stock Type; and
 - iv) A description of the overall passenger capacity (see Appendix 6.A), providing details of the number of sitting / standing passengers for Rail Services during the Peak Period.
- 3.1 You may cross refer between your Responses to R6.1 and R6.10.
- R6.2** Complete the [redacted] for all Rolling Stock Types:
- a. Populate all cells highlighted in light yellow in the worksheet entitled 'Class and Config Definitions';
 - b. Populate all cells highlighted in light yellow in each of the worksheets entitled Tables IA – ID Minimum Requirements; the relevant areas are defined in the Minimum Requirements Definition worksheet; and
 - c. Populate all cells highlighted in light yellow in the worksheets entitled 'Table 3 - Refurbishment Dates', 'Table 4 – Vehicles Summary', 'Table 5 – Loaded Vehicle Miles' and 'Table 6 – MTIN Performance'.

- 3.2 The worksheet entitled 'Scoring Template' is for population by the Authority; however, scoring cells have been left unlocked for you to test dummy scores.
- R6.3** Confirm that your Train Fleet will meet the minimum requirements for all Service Types set out in the [redacted] by the dates set out in the [redacted].
- R6.4** Describe up to ten passenger types which you will use in the following sections to illustrate the benefits of the Train Fleet proposal. Include the key characteristics of the passengers' requirements for each type. Differing requirements by Service Types should be clearly identified in your Response.

4. Maximising passenger comfort and quality of service

- 4.1 The Authority requires high quality rolling stock that addresses the current crowding concerns and will meet the forecast growth in demand.
- 4.2 Rolling stock should provide good ride quality and comfort for both seated and standing passengers, and meet passengers' expectations of being able to work and/or enjoy leisure activities while travelling. The Train Fleet should also offer a high level of cleanliness and be well maintained.
- 4.3 Deployed rolling stock may be new or refurbished and is to be introduced into service as early as possible.
- 4.4 In your Response to Question R6.5, you may include layout diagrams and other pictures where this helps to demonstrate your Response.
- R6.5** For each Rolling Stock Type, and with references to the passenger types identified in Question R6.4, describe how you will maximise passenger comfort and the quality of service. Rolling stock will be evaluated against each of the following attributes/elements:
- a. Ride quality & noise;
 - b. Heating/cooling;
 - c. Seating comfort, layout & flexibility and comfort for standing passengers where appropriate, with requirement to provide (see also Appendix 6.A):
 - i) Details of the usable space that has been assumed for standing passengers, identifying the data source and how this figure has been calculated;
 - ii) A breakdown of the areas that have been included / excluded from the usable space for standing passengers and the rationale for this, identifying the number of standees per area if possible. At a minimum, the following areas are to be excluded from the usable standing area calculation:
 - Space associated with occupied tip-up seats;
 - Bicycle racks;

- Luggage spaces;
 - Wheel-chair spaces;
 - Toilets.
- iii) Confirmation that the standing capacities submitted by you in the [redacted] and the methodology used to calculate these figures comply with the relevant legal and Health and Safety guidelines, details of which should be provided;
- iv) Confirmation that the standing passenger per square metre figures stipulated by Service Type within the [redacted] have been used for standing passenger calculations; and
- v) A description for how your commuter service rolling stock seating layout will support the seating requirements of all passengers, including those who will travel for more than 20 minutes and those who will travel for less;
- d. Vehicle entry/exit;
- e. Passenger information, Wi-Fi and at-seat power supply; and
- f. Cleaning, including:
- i) A description for how you will maintain a consistent high standard of train presentation. This should include a description of your cleaning strategy and the checks you will perform to ensure customer expectations are met; and
 - ii) How the vehicle design facilitates cleaning.

5. Rolling stock performance and reliability

5.1 Punctuality and reliability is a key driver of passenger satisfaction.

Consequently, the Authority requires you to have robust systems and processes for maximising rolling stock performance.

R6.6 Summarise your overall approach to delivering performance and reliability across the Train Fleet including the reliability improvement plans that you will implement and details of how you will monitor passenger numbers. In addition, for each Rolling Stock Type describe:

- a. How you will efficiently and accurately monitor performance and reliability on an ongoing basis, identifying any differences between new and refurbished rolling stock;
- b. Your strategy to meet or exceed performance and reliability targets throughout the ODP Grant Agreement Term;
- c. How you will ensure and enhance rolling stock performance over the ODP Grant Agreement Term, describing the monitoring systems that will

be deployed (on and off train), and how such systems will help reduce whole-life costs, with the provision of proactive and reactive feedback mechanisms for performance issues.

- d. How the Rolling Stock Type will optimise system performance whilst minimising damage and wear to the infrastructure; and
- e. Reliability figures for each Rolling Stock Type in the recognised rail industry format of Miles per Technical Incident (“MTIN”) Moving Annual Average (“MAA”) metrics, which demonstrate your year on year performance, inclusive of all support plans, and presented within Table 6 of the [redacted], providing the predicted MTIN performance of the various classes.

6. Deliverability Plan

- 6.1 The Authority requires that your rolling stock proposals are based on robust and mitigated delivery plans.
- 6.2 Plans and schedules for refurbished rolling stock must be clearly stated and differentiated from those associated with the delivery of new rolling stock.
- R6.7** Describe how you will deliver and manage your proposed rolling stock for each Service Type in accordance with your proposed fleet as set out in Table 4 of the “[redacted]”. Your Response should include:
 - a. A clear and specific plan detailing how each Service Type will be delivered, taking into account refurbishment plans (such as those relating to PRM TSI compliance), compliance with the minimum requirements as outlined in the [redacted], the delivery of new rolling stock and the overall cascade plan. This should include details of how you will ensure that all rolling stock complies with the PRM TSI by 31st December 2019;
 - b. Details of the organisations that you are contracting with to provide the rolling stock and the financial arrangements, including the maturity of these arrangements and details of any pre-negotiated contracts;
 - c. Details of key supply chain partners and activities with evidence that there is sufficient capacity to meet committed timescales;
 - d. Contingency plans to support late delivery of new or refurbished rolling stock, including any liquidated damages arrangements;
 - e. A description of the steps you will take and the processes you will follow to achieve compliance with the Authority's requirements for rolling stock, which should include:
 - i) An overview of the testing and acceptance process, including any test track requirements;
 - ii) Third party approval processes, identifying key risks;

- iii) Methods employed when determining safety requirements, safety approval processes, Assessment Body (“AsBo”) approvals and Notified Body (“NoBo”) approvals;
 - iv) How infrastructure requirements will be met and the limitations considered; and
 - v) The appropriateness of the solution in relation to Automatic Selective Door Operation (where appropriate).
- f. Where you plan to use rolling stock that is, at present, in use on another franchise you should explain your reasons for believing that it is available and what alternative suitable rolling stock is available for the other franchise, allowing them to continue to operate their train services. In doing so, you must demonstrate how you meet the conditions set out in Appendix 6.B.

7. Future proofing of rolling stock

- 7.1 The Authority requires a rolling stock solution that can respond to changing passenger, legislative and other demands during the ODP Grant Agreement Term and provide a solid platform for the next agreement.
- 7.2 The ODP is expected to have a continuous improvement strategy for the Train Fleet to help capture and respond to both known and unknown future requirements. This must include a consideration of sustainability issues throughout the ODP Grant Agreement Term and beyond.
- 7.3 The Authority encourages you to consider the introduction of newer/innovative traction modes as and when technology and cost permits, particularly where these provide environmental benefits and/or increase operational flexibility.
- R6.8** Describe how you will develop and future proof your Train Fleet including:
- a. A summary of your overall approach to future proofing your rolling stock solution including the legacy remaining at the end of the ODP Grant Agreement Term;
 - b. For each Service Type:
 - i) Outline how you will improve the environmental impact and sustainability of your Train Fleet for both WCB Services and CVL Rail Services throughout the ODP Grant Agreement Term compared with the train fleet used by the Previous Franchisee. This should include plans for the introduction of newer/innovative traction modes;
 - ii) Describe refurbishment and related plans to modify, modernise and/or refresh vehicles, identifying whether costs associated with these plans have been included as part of your submission; and

- iii) Aspects of rolling stock within each Service Type that are expected to be updated in line with future requirements and the process to enable this.
- c. Your plans to continue the roll out of free wi-fi across all rolling stock deployed within each Service Type including:
 - i) A schedule by which free wi-fi will be available across all rolling stock, broken out by class; and
 - ii) Ongoing investment plans and upgrades to ensure expected wi-fi capacity is maintained and customer expectations are met as technology advances, including any costs included as part of your submission;
- d. An explanation of how you intend to align with the objectives of the Digital Railway Programme and comply with future roll-out activities of the European Train Control System (“ETCS”), such as those related to the South and North Wales main lines. In doing so, highlight the key milestones that you will meet;
- e. A description of your plans to address current and future on-board train GPS functionality; and
- f. Confirmation that you will meet the requirements of the Rail Delivery Group’s Train Location and Movement (“TL&M”) Project’s GPS Gateway interface and describe how you will stay aligned with the project.

8. Passenger connectivity on rolling stock

- 8.1 When passengers connect to wi-fi on board trains, or use mobile phones, their experience is, to a large part, determined by the quality of the mobile signal at that point.
- 8.2 The Authority is interested in exploring innovative options to boost the mobile signal along the rail network, and will consider proposals requiring increased subsidy to achieve this. It may also be possible to access additional funding streams to enhance coverage.
- R6.9** Describe options to enhance mobile network coverage to ensure that passengers can use mobile data and voice services effectively in Wales, through wi-fi, 4G or other connectivity, on journeys throughout all routes.

9. Rolling Stock Availability Plan; resilience and flexibility – WCB & CVL

- 9.1 You must deliver a resilient, flexible and robust operational model, capable of adapting to the demands of a dynamic customer focused environment undergoing a sustained period of change and growth.

9.2 Day to day operational focus must not be lost due to the impact of modification and refurbishment programmes, while contingency plans must be established to mitigate the impact of unplanned disruptions.

R6.10 Provide a Rolling Stock Availability Plan that describes how you will ensure trains are available to deliver the Train Service Requirements. The Response to this section should include:

- a. A summary of your Rolling Stock Availability Plan. This should include contingency measures and consider maintenance schedules, new train deliveries and specific plans required during any major planned refurbishment or modification periods.
- b. A description of the maintenance and stabling solution you will deliver to ensure all rolling stock adheres to the high levels of performance demanded, including:
 - i) Clear details of the maintenance options and contracting mechanisms considered, detailing why you believe the proposed maintenance solution is right for the ODP;
 - ii) Details about where maintenance is outsourced and the responsibility the contractor will have for reliability to ensure they can deliver quick resolutions to reliability problems; and
 - iii) Details about the maintenance depot(s) and stabling strategy deployed to support maintenance and cleaning schedules, achieve rolling stock resilience and to minimise operational impact.
- c. A description of the rolling stock support contracts and supply chain services you will use over the ODP Grant Agreement Term, including:
 - i) Details about the rolling stock maintenance and spares you will use and how you will work with suppliers to support the overall maintenance and availability goals and objectives; and
 - ii) Details about the contract selection and award process you will implement and why this contracting route offers value for money. Where your solution includes depots, provide details about how these depots will be funded.
- d. A description of how your rolling stock solution provides:
 - i) Sufficient flexibility and mitigation to meet the demands of a dynamic and customer focused environment;
 - ii) The ability to place future rolling stock orders via call off where growth supports the requirement;
 - iii) Flexibility for moving rolling stock between Service Types and routes; and

- iv) Specific flexibility as it applies to vehicles in-service, spare vehicles and hot spares, such that challenging availability targets can be met whilst providing sufficient vehicles to support service level demand.
- 9.3 You may cross-reference between your Responses to R6.10, R8.29 and R8.30 and vice versa.

10. Appendix 6.A - Determining Rolling Stock Capacity

10.1 Definition of Standing Capacity

1. The standing capacity excludes the area used when tip-up seats are occupied, as well as wheelchair space, toilets, bike racks and luggage space. It should provide a figure for the useable space for standing passengers, making sufficient allowance for the required space for all seated passengers.
2. This figure should assume that all space designated for a specific use is fully utilised for the purpose and not available for standing i.e. that all tip-up seats and wheelchair spaces are fully occupied, bike racks are fully loaded, luggage racks are full, etc.
3. You should calculate the standing capacity figure based on the 'square metre per standing passenger' ratio provided in the [redacted] for each Service Type, with the figure rounded down to the nearest whole number.
4. The safety of passengers must be assured at all times, so you may only include areas where it is safe for passengers to stand, and where they have access to the appropriate hand rails and hand holds. Hence, vestibules and gangway areas may only be included within the useable standing area if it is safe for passengers to use this area.

10.2 Rolling Stock Capacity

The total capacity is defined as the sum of the total number of seats (including wheelchair and tip-up) + the total standees per vehicle and provided as a total figure for the unit.

10.3 Bid requirements

All assumptions and supporting information should be provided within your Response to part (c) of Question R6.5.

You should populate the [reacted] with the following:

1. The number of standard class fixed seats, first class / business class fixed seats and tip-up seats within the unit;
2. Details of the configuration of the seating, i.e. 1+2, 2+2, 2+3, longitudinal, or mixed;
3. The number of wheelchair spaces provided per unit; and
4. The standing capacity i.e. the number of standing passengers allowed per unit, based on the 'square metre per standing passenger' ratio provided in the [redacted] for each Service Type.

11. Appendix 6.B – Cascaded rolling stock

11.1 Use of cascaded rolling stock

1. If you are proposing inward cascades of rolling stock from other Train Operating Companies you must clearly set out the details of this as part of your submission.
2. Such proposals will be considered by the Authority against the impact on the donor franchise, providing a view as to whether there is a concern over the rolling stock's inclusion in the proposed Train Fleet. The aim is to ensure that as far as possible:
 - a. Bidders for future franchise competitions can have reasonable certainty about the diesel rolling stock that will be available to them; and
 - b. Any plans for inward cascades into the ODP Grant Agreement do not leave the donor TOC without realistic options to maintain their existing service offer for their passengers
3. Where you are contemplating inward cascades of fleets from other Franchises, you are invited to set out your proposals to the Authority, via a CQ, as early as possible in the Bidding process. The Authority will consider any such proposals against the impact on the donor franchise, and may provide a view as to whether it is likely to have concerns if you include this rolling stock in your proposed Train Fleet. Any such view would be provisional and without prejudice to the Authority's evaluation of the Bid once submitted. Such a view would not be communicated to other Bidders, as this may reveal one Bidder's rolling stock strategy to the other Bidders, but it is open to any Bidder to approach the Authority on this issue.
4. To that end, only the following cascaded rolling stock may be proposed for inclusion within the Train Fleet:
 - a. The rolling stock that is comprised within the Wales & Borders Train Fleet at the date of issuing this ITSFT;
 - b. Rolling stock that is leased by a TOC other than the current Wales & Borders Franchisee at the date of issuing this ITSFT and that either:
 - i. Will be demonstrably surplus to the requirements of that TOC because:
 - Newly-built rolling stock is being procured to replace it; or
 - Other rolling stock is due to be cascaded in to the donor franchise to replace it; or
 - You propose to release suitable alternative replacement stock from the Wales & Borders Franchise that could be used by the donor franchisee.
 - ii. Will not be demonstrably surplus to the requirements of that operator, but the Bidder can demonstrate that it will be feasible for that operator to secure alternative rolling stock in sufficient time to enable that operator to maintain the operation of its train services to at least current standards. Alternative rolling stock must be capable of delivering comparable or better operational performance characteristics, and of achieving comparable or better levels of passenger satisfaction. For these purposes, you must demonstrate that it has allowed an appropriate lead time for any modifications that may be needed to the alternative rolling stock to enable it to meet the stated operational and quality requirements, for the training of drivers, and a reasonable contingency margin; and

- c. Rolling stock that is not leased at the date of issuing this ITSFT by any TOC.