

Thameslink Rolling Stock Project

Summary and Overview

April 2008

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April 2008

Preface

Purpose

This document is an introduction to the Thameslink Rolling Stock Project. It provides interested organisations with information on the requirements and timescales for the development and subsequent introduction of a new fleet of trains.

The Thameslink Rolling Stock Project is a key element of the overall Thameslink Programme which in turn is a major component of Government's long term strategy for rail. The Thameslink Programme is a major initiative to provide additional capacity and remove bottlenecks on the London commuter network and requires the introduction of new rolling stock.

Why is Government Involved?

The Thameslink Programme is highly complex and is being led overall by the Department. Rolling stock is an integral part of the Thameslink Programme. The specification and timing of acquisition of the new rolling stock needs to be aligned with the specification and delivery of the infrastructure works and the operational procedures necessary to deliver the required outputs. The risk that these three elements will successfully integrate as an operational railway system is held by the Department. Moreover, the current franchise expires before the introduction of the full new fleet and the delivery of the full Thameslink Programme outputs. The risk for the future performance of the enhanced Thameslink service therefore currently rests with the Department. For these reasons, the procurement of the new rolling stock needs to be closely managed by the Department alongside related Thameslink Programme activities.

Further Information

If you have other information needs in this regard please contact the Department as follows:

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1 The Project

The Opportunity

- 1.1 The Secretary of State announced in the White Paper 'Delivering a Sustainable Railway' (July 2007) her approval of the Thameslink Programme. Part of this programme includes the procurement of a fleet of between 900 and 1300 new vehicles (this is based on a notional 20m long vehicle although Bidders will be free to offer alternative configurations of similar capacity). These vehicles will be manufactured by the successful Bidder and made available to the operator of services across the Thames at Blackfriars ("Thameslink Services") under separate financing and maintenance agreements. The arrangements will include provision for maintenance of the stock over a period to be determined, which is currently expected to be for approximately 7-10 years.
- 1.2 The Thameslink Rolling Stock Project is the most significant investment in electrical multiple unit rolling stock since privatisation. It is an opportunity for the market to contribute to the development, introduction and long-term provision of a next generation of trains to serve Britain's rail commuter network well into the 21st century.

The Thameslink Programme

- 1.3 The concept of the Thameslink Programme is to operate more mainline trains through central London reducing the number of trains that terminate in London. The new Thameslink trains will operate through the central London core between St Pancras International and Blackfriars, providing inner and outer urban services to destinations to the north of London on the Midland and East Coast Main Lines and via London Bridge and Elephant Castle to destinations to the south of London on the Brighton Main Line and other routes in Kent, Surrey and Sussex. These trains will also be longer than many of those currently operated on the routes.
- 1.4 Thameslink Services first started operation in the late 1980s following the re-opening of the Snow Hill tunnel between Blackfriars and Farringdon. Since that time passenger demand growth on the Thameslink route has resulted in overcrowding during the peak periods, and the Thameslink Services are among the most crowded in the UK. The current Thameslink route has significant capacity constraints since it is restricted to trains of a maximum 8 car length and the route has numerous junction bottlenecks which severely restrict the frequency of service that can be operated through the central London core section.
- 1.5 The purpose of the Thameslink Programme is to unlock these constraints and provide a step change in capacity for the route thus providing significant congestion relief and capacity for future growth in passenger demand. The Thameslink Programme aims to provide 12 car length (based on a notional 20m length vehicle) operation and up to 24 trains per hour ("tph") running through the central London core section in each direction. The stated primary objectives of the Thameslink Programme are to:

- reduce overcrowding on Thameslink and other London commuter services;
- reduce overcrowding on the Underground;
- reduce the need for interchange between mainline and underground train services;
- provide for the introduction of new cross-London services, so improving public transport accessibility in South-East England, including access to areas of expected demand growth such as the London Bridge area, Docklands, the land adjacent to King's Cross/St Pancras stations and London's airports; and
- facilitate the dispersal of passengers from St Pancras station.

1.6 To achieve the above objectives the Thameslink Programme comprises the following elements:

- major infrastructure works to provide platforms to accommodate 240m trains and the removal of key capacity bottlenecks;
- the specification and procurement of new rolling stock; and
- changes to existing, and letting of new, railway franchises to accommodate the revised Thameslink Services.

1.7 The Thameslink Programme has been structured to deliver a phased roll-out of project benefits. The first element, Key Output 1 (KO1), permits longer 12 x 20m car or equivalent length trains and up to 16 tph frequency operating through the core section. The second element, Key Output 2 (the operation of full services with the new Thameslink rolling stock fleet)), comprising 24 tph frequency through the core section, is planned to be fully implemented by December 2015.

1.8 The train service envisaged following the delivery of the new Thameslink rolling stock fleet will require, based on a notional 20m car, the use of between 900 and 1300 vehicles operating in formations of up to 12 cars with all sets being capable of dual voltage (25kV ac and 750V dc) operation. The operator of Thameslink Services will provide inner and outer suburban and inter-urban services largely substituting for existing services currently operated by three TOCs (First Capital Connect, Southern and Southeastern). The existing services use a range of rolling stock types, many of which are not dual supply capable and there is therefore a need for a new fleet to run the planned Thameslink services. This fleet is a critical component in the system required to achieve a reliable service of up to 24 trains per hour through the central London core section both in terms of unit performance and minimisation of dwell times. There is a strategic desire, as described in the Department's 'Rail Technical Strategy' (published in July 2007), to introduce next generation rolling stock, including the aim over the longer term to move towards lighter weight vehicles. This is expected to have several benefits including reduced energy consumption and operational costs as well as lower maintenance costs through reduced wear and improved reliability for infrastructure and vehicles.

- 1.9 It is essential that the introduction into revenue service of the new rolling stock fleet commences by 1 February 2012 and that the entire new fleet will have been delivered, commissioned and introduced into revenue service to facilitate the commencement of full services in December 2015. It will also be essential prior to the commencement of the delivery of the new stock that the design will have been fully developed to meet the needs of the service requirement and meet the Department's strategic aims as described in the Department's 'Rail Technical Strategy'.

2 Project Requirements

Background

- 2.1 The Department's White Paper titled 'Delivering a Sustainable Railway' published in July 2007 responds to the policy aims of sustaining economic growth and enhancing access to jobs, services and social networks. A key component of this was the High Level Output Specification (HLOS) which included a commitment to increase capacity through the introduction of a significant number of additional vehicles into the national rolling stock fleet in the period from 2009 - 2014. That additional stock cannot be procured as a single uniform fleet through a single transaction. It will be sourced through targeted acquisitions and the release and redeployment of stock which arises from major fleet replacements.
- 2.2 The Department also has the strategic aim of improving the environmental performance of transport. This can be facilitated by reducing the energy consumption of travel. The Department recognised in its 'Rail Technical Strategy' that energy efficiency can be delivered by having lighter trains which recover a very high proportion of kinetic energy during braking using it within the train and facilitating its re-use by other trains within the area. This procurement will provide the opportunity to design trains which will be the first of a new generation which will meet these strategic aims.
- 2.3 As part of meeting the aim of promoting transport that works for everyone and ensuring that disadvantaged people are not excluded from the transport network, the Disability Discrimination Act 2005 commits the Government to set a date no later than 1 January 2020 for ensuring that the national rolling stock fleet complies with the requirements of the Railway Vehicle Accessibility Regulations (RVAR). The Government is currently consulting on how this commitment can be modified to allow compliance with either the RVAR or the European Technical Specifications for Interoperability for Persons of Restricted Mobility (PRM TSI) which will come into force in July this year, but the end date will remain the same.
- 2.4 The Thameslink Programme outputs are based on the operation, during peak hours, of a through service of 24 tph in the central London core section. This is a metro type frequency not found elsewhere on the National Rail network. Operating such a service requires performance capabilities (acceleration and braking rates) and station dwell time characteristics (the time from wheel stop to wheel start) which are more demanding than those currently offered by any existing design of stock currently operating on the network.
- 2.5 The Department has concluded that while it may be feasible to improve the performance levels of existing stock types by the installation of more powerful motors this would not be a cost effective solution. Moreover, the inability of existing designs to deliver the overall operational needs leads to the conclusion that despite the cost a fleet of new design trains is required.

The Thameslink Rolling Stock Project Objectives

- 2.6 The primary objective of the Thameslink Rolling stock Project is to ensure that sufficient, appropriately specified and reliable stock is available for both KO1 and the new fleet operational phases of the Thameslink Programme and that adequate stock continues to be available on an ongoing basis for at least 30 years.
- 2.7 The Thameslink Rolling Stock Project includes the following elements of which the successful Bidder would be responsible for item 2.7.2 and, potentially, item 2.7.4:
- 1.
 - 2.7.1 Support to the phased roll out of the KO1 service enhancements.
 - 2.7.2 Procurement and introduction into service of a new fleet of rolling stock to facilitate service enhancements from February 2012 and the operation of full services from December 2015.
 - 2.7.3 The development of and gaining stakeholder agreement to, appropriate maintenance, depot and stabling strategies to meet the needs of the programme requirements.
 - 2.7.4 The design, development, construction and commissioning of one or more depot facilities to maintain the new Thameslink fleet.
 - 2.7.5 Arrangements for progressive cascading of existing vehicles which are to be substituted by the new Thameslink trains, as they are delivered and introduced.
- 2.8 Within the overarching objective the following aims have also been identified:
- The new rolling stock should be consistent with the Department's "Rail Technical Strategy";
 - The procurement strategy should support the introduction of the new Thameslink trains into service by early 2012;
 - The contractual approach should optimise risk transfer, reflecting the Department's desire to maintain flexibility and an appropriate allocation of risk to the private sector;
 - The procurement approach should optimise the value for money of the stock on a whole life, whole industry basis both by encouraging manufacturers to develop designs to address these issues and by enabling financiers to address and manage properly risk when pricing the finance;
 - The new rolling stock should be consistent with the Department's 'Rail Technical Strategy'; and
 - The specification and acquisition of new rolling stock should be integrated with operational plans of the Thameslink TOC and the design and characteristics of the intended infrastructure. This will be reflected in a Train Infrastructure Interface Specification provided to Bidders at the ITT stage.

Scope of Procurement

- 2.9 The scope of service required comprises the design, manufacture and maintenance of the entire fleet. The procurement uses the negotiated procedure to select a party which will supply and maintain the fleet of new rolling stock. The Department intends that the chosen bidder will be required to arrange the finance necessary for the acquisition and ownership of the rolling stock. However, the Department reserves the right to decide not to require the chosen bidder to arrange the finance. In either case, the Department may seek to include in this procurement the development of one or more train depots.

Required Outputs of the Thameslink Rolling Stock Project

- 2.10 The required outcome of the Thameslink Rolling Stock Project is the provision of a stepped increase in capacity and frequency on several London commuter routes. The extra resources should be delivered in a way which delivers best value and further improves the energy and environmental performance of the railway.
- 2.11 The Thameslink Rolling Stock Project is required to contribute the delivery of the required 24tph output. The successful Bidder will be expected to liaise and collaborate with Network Rail and the Thameslink TOC throughout the design, manufacturing and commissioning phases to ensure delivery of this required output.
- 2.12 A Rolling Stock High Level Specification accompanies this document.

3 Commercial Matters

- 3.1 The Thameslink Rolling Stock Project represents an opportunity for the successful manufacturer/maintainer to use their expertise to work with industry partners to help meet long term customer requirements through the provision of a well designed, highly reliable and maintainable train that offers an optimised whole life cost, whole industry cost solution, commensurate with the project timescales outlined in paragraph 4.1.
- 3.2 It is the Department's intention that when responding to the ITT for the Thameslink Rolling Stock Project the manufacturer/maintainer will provide a financed solution i.e. the manufacturer/maintainer will be expected to work closely with a financier who will be providing a rental price for that manufacturer's solution. The financing agreement(s) with the TOC will be separate from the manufacturing and maintenance agreement(s). In this sense the contract structure for the new Thameslink rolling stock fleet will be similar to those seen in recent rolling stock procurements led by the TOCs.
- 3.3 It is anticipated that manufacturers/maintainers will want to appoint a financial adviser to support their development of a financed bid at the ITT stage and ensure that an optimised proposal is put forward.
- 3.4 The rationale for requiring manufacturers/maintainers and financiers to work closely together to prepare their bids is that the Department wishes to procure stock which will be highly reliable and readily maintainable whilst delivering a value for money outcome. It is considered that encouraging the parties to work closely together at the bidding stage will facilitate an optimised solution. This approach also takes into account the large scale of the procurement and the need to develop a financeable solution.
- 3.5 The sections below provide an outline of the commercial structures proposed for the Thameslink Rolling Stock Project. In each case the descriptions are as if the contracts are bipartite i.e. between the two principal parties only. For the Manufacturing agreement this would be the Finance Vehicle and the Manufacturer/Maintainer, for the Financing Agreement this would be the Finance Vehicle and the Train Operator and for the Maintenance Agreement this would be the Manufacturer/Maintainer and the Train Operator. The Department is still considering whether these agreements should, in practice, be tripartite i.e. all three parties as signatories. . This will be made clear in the ITT.

Manufacturing Agreement

- 3.6 The manufacturing or sale and purchase agreement will be between the manufacturer and the entity ("Financing Vehicle") which is responsible for buying the rolling stock. The Financing Vehicle will own the rolling stock and lease it to the relevant train operating company ("TOC").
- 3.7 The successful Bidder will be required to manufacture the stock to a design specification, developed by the manufacturer in response to the Department's output specification. It is anticipated that the manufacturing agreement will include a range of milestones, measures and checks to ensure that the design will meet the agreed objectives and that the manufactured train also meets the parties' requirements. It is envisaged that ownership of the each vehicle will only transfer from the manufacturer to the Financing Vehicle once each vehicle has

met clearly defined acceptance parameters. The Thameslink TOC will have a key role in testing and accepting the stock and getting it into service.

Financing Agreement

- 3.8 The Financing Vehicle will be paid a pre-determined monthly amount for the use of each vehicle by the TOC under the financing agreement. The amount is likely to reflect both a capital and a funding cost element.
- 3.9 The usage of the trains is likely to be guaranteed, via an undertaking from the Secretary of State, for part of the useful life of the rolling stock. It is anticipated that the Financing Vehicle will take some residual value risk on the vehicles.
- 3.10 The Department wishes to encourage the Financing Vehicle to take an active interest in the design and development of the train and its subsequent operating performance. The Department is considering options with respect to the level of risk which the Financing Vehicle should bear in the event that the rolling stock persistently fails to perform in accordance with the specification. One such option is that the usage undertaking may include provision for its level or terms to be adjusted. Further details will be provided in the documentation issued with the ITT.
- 3.11 Amounts payable under this contract will be bid in response to the ITT and evaluated under the competitive tendering process.

Maintenance Agreement

- 3.12 In order to encourage the manufacturer to address properly whole life costs and maintenance considerations when designing the trains as well as capturing the manufacturer's expertise in addressing the problems that can arise with a new design of train, it is expected that the manufacturer will be responsible for the maintenance of the trains. The Bidders will be asked to provide a confirmed price for maintaining the trains for a significant proportion of the assets' life, and there will be a guarantee that maintenance responsibility will remain with the successful bidder over a prescribed period, which is currently expected to be approximately 7-10 years. This period will be capable of being extended at the confirmed price.
- 3.13 There will be a maintenance agreement between the operator of the Thameslink Services and the maintainer of the trains. Amounts payable under this contract will be bid in response to the ITT and evaluated under the competitive tendering process. Given the importance of having highly reliable trains in order to deliver the 24 tph service through the core, there will be a reliability incentive regime. It is anticipated that for certain key deliverables the regime will offer incentives as well as penalties.
- 3.14 The Department wishes to encourage an environment where the TOC and the maintainer can work together effectively to deliver their respective commitments which underpin a guaranteed availability of stock together with exceptional reliability and well presented trains. Accordingly, it is expected that, whilst the maintainer will take the lead role in maintaining the trains, clear roles will be defined for the TOC to support the planning and scheduling of work. This will enable the TOC to monitor progress in the depot so that it can plan around and assist the maintainer to recover from disruption.

- 3.15 The Department recognises the importance of depot arrangements to delivering maintenance obligations. It is currently seeking to identify suitable depot facilities for the new Thameslink rolling stock fleet. It is also investigating the optimum arrangements for the procurement and ownership of those facilities. These arrangements will need to reflect the timescales for having the depot available to receive the new stock and the scale of work to be done. They will also need to take into account the participation of the maintainer in the specification of the depot layout and facilities. The Department is also mindful that the solution needs to facilitate the incumbent TOC to deliver a consistently high standard of service throughout the introduction of the new trains.
- 3.16 More details of the maintenance arrangements and the maintenance regime will be set out in the draft contracts provided with the ITT. Further information on the approach to procuring suitable depot facilities will be provided with the ITT.

Direct Agreements

- 3.17 Direct Agreements setting out the terms and circumstances under which the Secretary of State may 'step in' will also be included in the contractual documentation.

Network Rail

- 3.18 Network Rail has been involved with the development of the Thameslink Programme from its outset. It occupies a unique position within the programme, being both a stakeholder responsible for various approvals and interface issues and being responsible for delivery of the infrastructure works. The works include:
- Realigning and expanding track and signalling infrastructure in the core;
 - Reconstruction of a number of stations including Farringdon, Blackfriars and London Bridge;
 - Selective platform lengthening;
 - Gauge clearance at a limited number of locations; and
 - Power supply strengthening at certain locations and, possibly, work to support the storage and use of regenerated power.
- 3.19 The suite of documents provided at ITT stage will include a Train Infrastructure Interface Specification (TIIS). The TIIS will set out the key characteristic and operational parameters of the infrastructure on which the new Thameslink fleet will operate. This will enable the manufacturer to optimise the design of trains in areas such as capacity, ride quality, dwell times and energy efficiency.

Train Operating Companies (TOCs)

- 3.20 While the Department is instigating the specification and procurement of the Thameslink rolling stock, it is the intention for the contracts to be entered into by the TOC operating the Thameslink Services. In recognition of this and in order to deliver the objectives of the Thameslink Programme, it is anticipated that TOC representatives will be closely involved throughout the procurement and implementation of the Thameslink Rolling Stock Project.

4 Timescales and Selection

Outline Procurement Timetable

4.1 Indicative dates for the procurement are:

- Return of Expressions of Interest 9 June 2008
- Select Accredited Bidders Summer 2008
- Issue Invitation to Tender Autumn 2008
- Proposals Received Winter 2008/09
- Contract Award Summer 2009
- First trains in passenger service February 2012
- Fleet introduction complete December 2015

Use of Negotiated Procedure

4.2 This procurement uses the Negotiated Procedure of the Utilities Directive.

Invitation to Tender

4.3 The ITT will, amongst other matters, provide drafts of the required contract documentation and will detail all instructions for the competition. The Department may be seeking input from accredited Applicants in the development of the ITT proposition. The Department intends that the chosen Bidder will be required to arrange the finance necessary for the acquisition and ownership of the rolling stock. However, the Department reserves the right to decide not to require the chosen Bidder to arrange the finance. In either case, the Department may seek to include in this procurement the development of one or more train depots.

Best And Final Offers (BAFO)

4.4 The Department does not intend to invite BAFO bids. However, the Department reserves the right to do so if necessary.

Funding Competition

4.5 Consistent with HM Treasury guidance on best practice, the Department reserves the right to run a funding competition.

Department for Transport Project Website

4.6 A number of documents have been made available to all interested parties via the Department's project website at <http://www.dft.gov.uk/pgr/rail/pi/trsp/>. The OJEU website documents are as follows:

- (i) OJEU Notice
- (ii) Summary and Overview (this document)
- (iii) Accreditation Questionnaire
- (iv) Appendix 1 to the Accreditation Questionnaire

- (v) Accreditation Process Document
- (vi) Process Agreement
- (vii) Rolling Stock High Level Specification