Finance and Policy Committee

Date: **14 October 2014**

Item 13: **iBus Contract Extension**

This paper will be considered in public

1 Summary

ID/UIPXXX	**iBus Contract Extension**			
Existing Financial Authority	EFC	Existing Project Authority	Additional Authority Requested	Total Procurement Authority
£ 113.8m	£113.8m	£ N/A	£ N/A	£ 286.8m

Authority Approval:

The Committee is requested to approve this paper for onward submission to the TfL Board (5 November 2014) to request Procurement Authority and approve the extension of London Buses' "iBus" Contract. The extension term is from May 2015 for a maximum of seven years (five years initial term with two potential one year extensions) during which time the Buses Directorate will procure the next generation system.

Financial Authority of £113.8m is contained in the 2014 TfL Business Plan to deliver the London Bus Services Ltd (LBSL) Bus Communication and Information System and Related Services (iBus), as outlined in section 3.1.

Additional Procurement Authority, up to a value of £113.8m, is requested to cover the up to seven year contract extension. This Authority is sought in addition to the original contract value of £173m making the new total Procurement Authority £286.8m.

Outputs and Schedule: In parallel with the Procurement Authority Approval process, the existing Contract is being updated to reflect current requirements, terms and pricing, and a "restatement agreement", which will give effect to the contract amendments has been drafted. This restatement exercise is forecast to conclude in November 2014 and will have an effective date of 3 May 2015 (to align with expiry of the current contract).

1.1 Section 5 refers to the detailed cost and funding breakdown for this Procurement Authority request.

2 Recommendation

2.1 **The Committee is asked to note the paper and to recommend that the Board:**

(a) approves the extension of the iBus contract as described in this paper for a further period of up to seven years (the Extension) with a value up to £113.8m giving total procurement authority of £286.8m;

(b) authorises the TfL Officers and the Subsidiaries (as described in paragraph 2.2 below) to finalise the terms of the Extension described in this paper;

(c) authorises the agreement and execution (whether by deed or otherwise on behalf of TfL or any Subsidiary (as appropriate)) of any documentation to be entered into in connection with the completion and implementation of the Extension and any of the matters referred to in it (including, without limitation, all agreements, deeds, guarantees, indemnities, announcements, notices, contracts, certificates, letters or other documents); and

(d) authorises TfL Officers and Subsidiaries to do all such other things as they consider necessary or desirable to facilitate the execution and implementation of the Extension and the matters referred to in it.

2.2 **The following Officers and Subsidiaries shall have delegated authority:**

(a) TfL Officers: the Commissioner, Managing Director Finance, Managing Surface Transport, General Counsel and Chief Finance Officer; and

(b) Subsidiaries: Subsidiaries of TfL including Transport Trading Limited and any other subsidiary (whether existing presently or to be formed) of Transport Trading Limited and any directors of the relevant company shall be authorised to act for and on behalf of that company.

3 Background

3.1 In 2005, a ten year contract for the design, development, testing, installation and maintenance of a bus communication and information system, known as iBus, (the Contract) was awarded to Siemens VDO Trading Limited (Siemens) following an OJEU negotiated procedure procurement.

3.2 The Contract outsourced core technology development and associated maintenance service to Siemens. Operational management of the system and services is undertaken by Technical Service Group (TSG) in the Buses Directorate with commercial support from TfL Commercial.

3.3 iBus is the TfL real time bus passenger information, bus tracking and performance management system and is the data collection and calculation engine behind the £1.8bn of payments to bus operators.

3.4 In summary the iBus system supports:

(a) 8500 buses fitted with iBus equipment running in excess of 700 bus routes and serving over 18,000 bus stops across Greater London;

(b) 90 bus garages operated by 21 bus operators responsible for running and maintaining the bus service schedule; and

(c) 41 service control centres with work stations with the ability to track buses in real time and contact buses by voice radio.

3.5 The iBus system records mileage operated on bus routes by the bus operators on behalf of LBSL. This information is used to calculate public performance statistics and is used as the basis of mileage and reliability performance payments to the bus operators. The iBus system also calculates all of the 'Live Bus Arrival' predictions that are sent to the Countdown service of Web, SMS, 2500 signs and supports over 60 smartphone apps.

3.6 The Contract was novated to Trapeze ITS Switzerland GmBH Limited ('Trapeze') in October 2009.

Basis of existing contract

3.7 The existing contract with Trapeze is a "turn-key" style contract with all elements of the service delivered by one party against a performance regime of KPIs and service credits.

3.8 TfL owns all physical assets of the system but does not own the intellectual property (IP) for any element of the system. TfL has an irrevocable licence to use and modify the IP in the system as it exists, however TfL does not require and hence does not have access to the source code (except under Escrow or default). TfL has ownership of the system interfaces which allows replacement of key components or component supplier should the need arise.

3.9 Under the terms of the contract, TfL does not receive the source code on natural expiry of the contract and so would not be able to make this available to any successor contractor.

3.10 It was anticipated at the time of the award that the assets would reach the end of their supportable life at the end of the contract term and that the rapid advances in technology, as are typical of the industry, would have rendered the technology obsolete. In addition it was believed that business requirements would have changed to the extent that the system would no longer be fit for purpose. At the time of contract signature TfL envisaged procuring a new system(s) before the end of the ten year term.

Current state

3.11 The iBus system is performing well and a system review was undertaken in 2013 in conjunction with the Independent Investment Programme Advisory Group (IIPAG) that determined iBus could be used beyond its current contractual end date (2 May 2015) and the equipment was not obsolete and would be supportable for an additional five to seven years.

3.12 Failure rates show that the on-bus assets continue to perform to the required level (<1 per cent failure as at 1 August 2013)[1] and repairs are delivered within

[1] A specific study undertaken in August 2013 as part of the Nimbus review. This study will be revalidated in early 2015.

contractual SLAs. Equally the back office system continues to perform within its availability targets (over 99 per cent) with an excellent performance history. The Contract performance targets are linked to a service credit regime. There have been no service credit payments paid by Trapeze since December 2011.

3.13 In parallel to the proposed contract extension term the Buses Directorate will procure a next generation system to replace the core technology by 2020/21. The flexibility to go to seven years is to mitigate any potential risk of delay to the programme. Further details on this approach are included in section 4.7.

Contribution to Mayoral strategy

3.14 The extension of the Contract aligns with the Mayor's Transport Strategy and its goal to 'support economic development and population growth'. This is achieved through meeting the strategic challenge of 'delivering an efficient and effective transport system for people and goods' through the following outcomes:

(a) Smoothing traffic flow (managing delay, improving journey time reliability and resilience);

(b) Improving public transport reliability;

(c) Bringing and maintaining all assets to a state of good repair; and

(d) Providing a more efficient bus network responding to changing demand.

Funding and Authority Strategy

3.15 Discussions with Trapeze on the price of the proposed extension are complete and it is proposed that the contract restatement will conclude in November 2014.

3.16 Financial Authority of £113.8m is contained in the 2014 TfL Business Plan to deliver the iBus contract Extension for up to seven years.

3.17 Procurement authority is requested for the seven year extension in addition to the original contract value of £173m for 2005 – 2015 giving total procurement authority of £286.8m.

4 Proposal

Options Considered

4.1 **Do not replace, and do not extend the contract (do nothing):** This option would result in a rapid degradation of service. While TfL has the right to use the software, and it is expected that the hardware would continue to operate, the contract includes service elements such as system housekeeping, repair and data integrity. Importantly, movement of buses and garage changes required to support both business as usual and the business plan could not be facilitated. Without these service elements it is estimated that the system would degrade and become inoperable in less than 18 months. In addition, there would be no transition to a new service provided therefore massively increasing the cost of any replacement system. NOT RECOMMENDED.

4.2 **Extend the current contract for two years:** This option would have no financial benefit for TfL as it is below the minimum term (five years) for any of the underlying contracts (i.e. communications, hosting and licencing). The estimated financial

impact of this option is an increase of 25 per cent on the current five year quotation for the maintenance services as illustrated in the table below. The capex expenditure of £63m would also need to be brought forward from 2021 to conclude in 2017. NOT RECOMMENDED.

	Opex		**Capex**	
	2 year extension (p.a.)	**5 year extension (p.a.)**	**2 year extension**	**5 year extension**
Year 1	£12,008,065	£9,606,452		
Year 2	£12,428,348	£9,942,678	£63,000,000[2]	
Year 3	£9,261,605	£10,290,672		
Year 4	£9,585,761	£10,650,845		
Year 5	£9,921,263	£11,023,625		£63,000,000
TOTAL	**£53,205,042**	**£51,514,272**		

4.3 **Contract the current services to a new provider:** In conjunction with the TfL Commercial ICT team (the same team that advised on the procurement of Electra) an early market engagement was undertaken for Nimbus[3] (2013). This process asked questions of 37 market leaders to determine their position on "taking over and maintaining existing … system assets originally provided and supported by a different supplier".

4.4 The suppliers that considered this option still required the on-going support of the incumbent supplier (Trapeze) for the life of the product. Therefore any solution to contract a new supplier for the existing assets would add a layer of service provision costs in addition to the base Trapeze costs. There would be no cost saving to TfL. Overall, the responses determined that there was no appetite to this approach.

4.5 In order for a new supplier to operate the existing contract, an IP transfer would be required; the rights to which TfL does not currently hold. Trapeze confirmed in June 2013 that they were unwilling to sell or transfer the IP rights. NOT RECOMMENDED.

4.6 **Extend the contract for 5 years (with 2 optional 1 year extensions):** As well as leveraging a better price through linking with the terms of the underlying contracts this option is aligned to the current TfL business plan for a replacement system in 2020/21. This is RECOMMENDED.

[2] This is illustrative, noting that it would take 24-30 months to get to a new contract, with an additional 24 months to design, implement and rollout.

[3] Nimbus: A feasibility project describing a single on-bus technology architecture encompassing iBus and ticketing functions and associated services. This project was closed following the output of the early market engagement and review of the business case with IIPAG.

Preferred Option

4.7 The preferred option is to continue with the current iBus equipment and service through the extension of the current Contract for a maximum of seven years. It is recognised that all of the equipment (on bus and back-office) will age which may eventually lead to reliability and support issues, however the on-board equipment is in good order with no sign of systemic failure. The back office system was refreshed in 2013 and has a forecast life expectancy of at least five years with a forward upgrade path already defined. During this extension period the Buses Directorate will pursue its overall replacement strategy for iBus which is expected to procure elements of the system from different suppliers rather than the single supplier approach as with the current contract.

4.8 As part of the negotiation with Trapeze TfL has included a number of additional benefits to the Contract:

(a) the base number of buses on the contract has increased from 8,000 to 9,250 to align with the predicted number of additional buses required to provide transport for London's projected population growth;

(b) the ability to terminate services such the Private Mobile Radio under the Contract which would allow other providers to take over elements of the current end to end system as part of the Buses Directorate's strategy outlined in the following section;

(c) an extensive revision to the Price Book (the pricing schedule for individual consumables) within the Contract through a benchmarking exercise For example, the price for Traffic Light Pre-emption equipment has been reduced by 50 per cent; and

(d) concessions of software and services. There are four detailed work package items including 2 design studies and an option for new on bus equipment that equates to a value of £1.2m.

Risks to Preferred Option

4.9 The main risk associated with an extension of the current contract is the age of the equipment; both back office and on bus. The Nimbus study determined that the equipment would continue to be supportable. There is also an upgrade option for the system that can be invoked if required.

4.10 Given the constraints on TfL's ability to share Trapeze's intellectual property in the design and operation of iBus, it is not possible for TfL to hold a competition to secure an alternative provider for the proposed extension period. While it is possible that the absence of a competition might be challenged, TfL is satisfied that it can apply an exemption under procurement regulations from the need to hold a competition in such circumstances. Further the work with market leaders described in paragraph 4.3 suggests that there is unlikely to be appetite in the market to bring such a challenge.

Future bus technology strategy

4.11 The information gathered during the Nimbus early market engagement provided the opportunity for the Buses Directorate to set the roadmap for iBus to 2022 and beyond. The most important change in approach is that a new contract will seek to

move away from a single supplier turn-key style contract as the engagement highlighted the willingness of the companies involved to take responsibility for constituent parts of a future iBus solution including on board systems, carrier systems and data management.

4.12 The iBus roadmap proposes a move to a platform by 2020 that will utilise open interfaces, acknowledge many European standards and will allow:

(a) TfL to take leverage from bus manufacturers' innovations to reduce costs, installation weight and to improve management of the bus fleet with increased data availability;

(b) reduce cost and single supplier dependency by allowing multiple vendors to supply on-board components against an agreed technical platform using European Bus System of the Future (EBSF) standards specified by TfL;

(c) an 'open data' strategy to be built in at the outset to enable transparency and portability of key data items;

(d) interoperability with non-TfL bus operators enabling controllers and passengers to see non-TfL services in London on bus and on information signs (e.g. National Express) and for TfL services to appear on non-TfL infrastructure to increase the provision of multi-modal information to passengers; and

(e) the upgrade of the existing iBus radio system to a digital service possibly inter-laced with London Underground (Connect) and/or operating with the replacement to Airwave to gain both cost and operational efficiencies.

Benefits (and Value)

4.13 iBus provides the communication and information systems for the bus network including:

(a) the code red functionality, which allows each bus to speak directly to CentreComm in an emergency (a contractual responsibility of LBSL to the Bus Operators/Drivers);

(b) service control capabilities for bus operators;

(c) radio communications between CentreComm, garages and buses; and

(d) real time passenger information on-bus and at bus stops, on the web and via SMS (Countdown).

4.14 iBus is the primary management information source within the Buses Directorate. iBus facilitates three of the five performance KPIs for the Directorate that are; kilometres operated, percentage of schedule operated and Excess Wait Time. These give rise to bus operator payments of over £1.8 billion per year.

4.15 iBus continues to deliver benefits to passengers, demonstrated through a 'Willingness to Pay' value of 2.42 pence per passenger journey for the On Board Next Stop Sign. This alone will deliver £299m of passenger benefits over the next five years. The On Board Next Stop Sign primarily provides audio and visual information on the next stops, route and destination.

4.16 iBus also supports real time data for multiple information channels through the Countdown API; on-street signs, SMS, web and mobile web, apps by third parties and more recently, digital screens. The range of channels has expanded over time, securing comprehensive network coverage through apps, SMS and web. Digital signs (displaying RTI in flexible screen formats) are now facilitating higher sign availability on the network at relatively low cost.

4.17 Disability groups have particularly benefitted from the availability of simple RTI at each stage of the journey. Next stop audio information on-bus and 'text to speech' functionality on personal devices have enabled mobile web and apps to guide passengers using step by step RTI. This can hugely improve the journey experience for passengers needing extra support, especially those with visual impairments or learning difficulties.

4.18 Access to comprehensive iBus data and the ability for iBus to monitor services 24 hours a day and 7 days a week this has been the main catalysts behind an improvement in service control and more representative route scheduling. Together they have contributed to a gradual improvement in service reliability. A reduction in EWT of 0.07mins per passenger journey has been noted in recent years, translating into significant overall passenger time savings. Using remote RTI channels has also helped passengers to save time, with a recent survey indicating that most passengers believe they typically save around three minutes from being able to time their arrival at a stop.

4.19 Financial savings have been achieved from the use of iBus as a service control and monitoring tool, with the decommissioning of the monitoring surveys and reduction in the number of on-street controllers. This has resulted in approximately £20m of savings per annum.

4.20 Other iBus benefits that can also be quantified include bus priority savings, assessed at two seconds per signal and the low bridge alarm, reducing the number of collisions with bridges from approximately seven to two per year.

5 Financial Implications

Procurement Authority

5.1 £113.8 Procurement Authority is requested in addition to the original contract value of £173m for 2005-2015 totalling £286.8m.

Area of spend (£) Capex and Opex	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	Total
System Maintenance costs	£ 9,606,452	£ 9,942,678	£ 10,290,672	£ 10,650,845	£ 11,023,625	£ 11,409,451	£ 11,808,782	**£ 74,732,505**
Bus, garage and operator churn	£ 1,790,957	£ 1,856,386	£ 1,915,182	£ 1,967,537	£ 2,030,625	£ 2,095,918	£ 2,163,570	**£ 13,820,176**
BAU Change*	£ 702,508	£ 772,769	£ 303,132	£ 2,245,357	£ 2,333,373	£ 1,701,398	£ 262,153	**£ 8,320,690**
PVR increase	£ 1,041,302	£ 904,228	£ 608,693	£ 441,938	£ 301,693	£ 312,252	£ 489,984	**£ 4,100,091**
Sub Total	**£ 13,141,219**	**£ 13,476,061**	**£ 13,117,679**	**£ 15,305,677**	**£ 15,689,316**	**£ 15,519,020**	**£ 14,724,490**	**£ 100,973,461**
Operational Risk	£ 960,000	£ 960,000	£ 960,000	£ 2,760,000	£ 1,460,000	£ 2,820,285	£ 2,899,135	**£ 12,819,420**
Total	**£ 14,101,219**	**£ 14,436,061**	**£ 14,077,679**	**£ 18,065,677**	**£ 17,149,316**	**£ 18,339,305**	**£ 17,623,625**	**£ 113,792,881**

The above costs are inclusive of indexation.

5.2 'BAU Change' covers necessary changes to system and application software in response to changes required by the operational business and to cover the replacement of unsupported system software. Examples include: revisions to bus performance monitoring, revisions to external system interfaces, upgrades to

operating systems and changes due to upgrades to other TfL systems e.g. ticketing equipment, Remedy (incident and asset management system), SAP, BusNet and Caesar (databases holding all bus route and schedule information), and BCMS (bus contract data and management system).

Financial Authority

5.3 Financial Authority exists for £113.8m in the 2014 TfL Business plan for iBus services from 2015-2022.

6 Assurance

6.1 In 2012/13 a feasibility study was carried out to evaluate options post 2015 regarding the integration of two existing on-bus systems: the iBus system and the Electronic Ticket Machine (ETM) system. The Corporate Gateway Approval Process review at gates A/B (initiation/option selection) concluded that on-bus technology was a sound strategy but should be deferred until a later rollout once the current equipment has reached the end of its economic supportable life. In March 2013, TfL's Programme Management Office and the IIPAG recommended that the project team should seek to continue maintenance of the existing on-bus components and to plan to replace at the end of their operational life.

List of appendices to this paper:

None

List of background papers:

None

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