



# Workshop for Improved Access to TfL Network

5 July 2019

# Agenda

- Welcome and Introduction
- Findings from ORR Market Study into ATGs and TVMs
- Summary of the TfL-Cubic Revenue Collection Contract
- TOC Gate Integration with TfL Reader
- Q&A Technical
- Q&A General
- Summary and Close



# Welcome and Introduction

5 July 2019



# Findings from ORR's Market Study into ATGs and TVMs

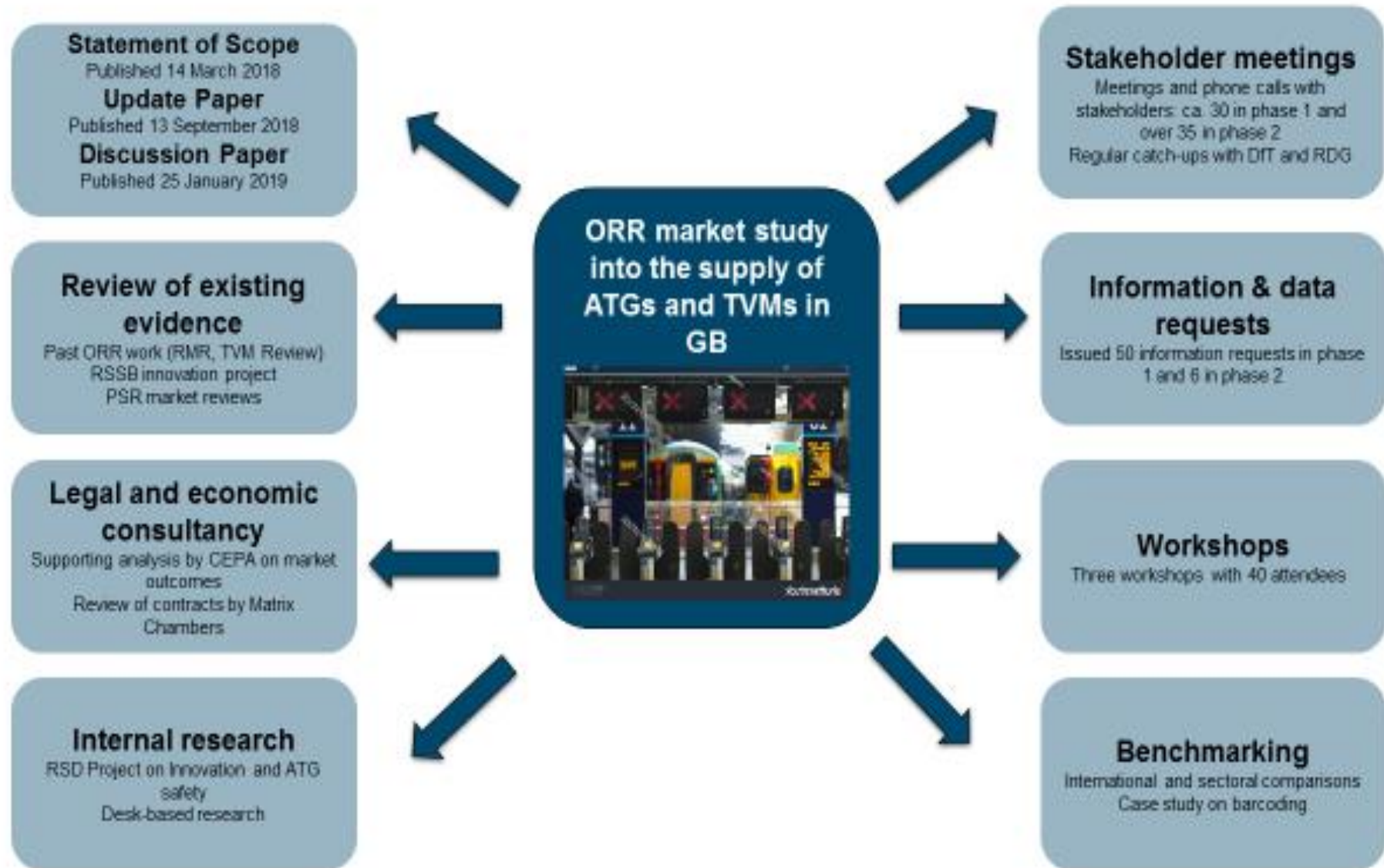
Workshop

5 July 2019

# Overview

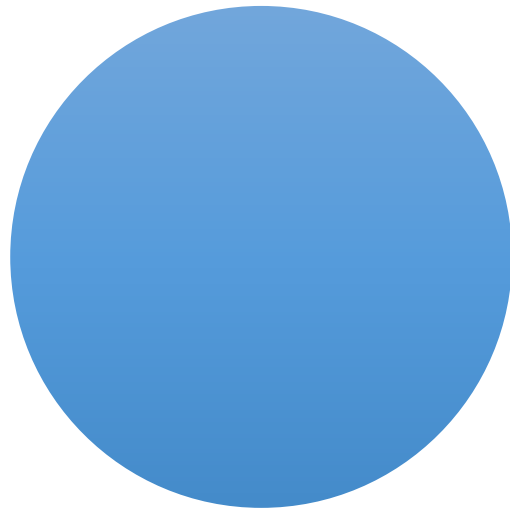
- 14 March 2019 – Launched market study into the supply of ATGs and TVMs following an earlier market review
- 13 September 2018 – published an update paper setting out our emerging findings. Made decision not to refer the market to the CMA for a more detailed investigation.
- 25 January 2019 – published a discussion paper setting out proposed remedies
- 13 March 2019 – published final report and recommendations to tackle identified issues
  
- This presentation will focus on findings in the ATG market

# Methodology

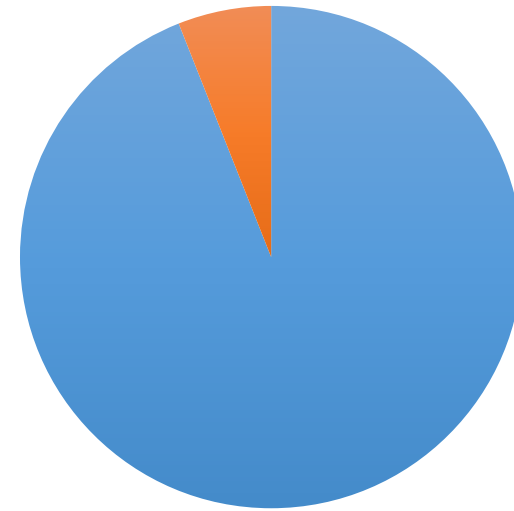


# Findings: Concentration and level of competition

TfL Network



Mainline



■ Cubic   ■ S&B

# Findings: Entry barriers- Metro

## Metro systems

- Metro systems aggregate the procurement of their ATGs and TVMs into a service contract. Metro systems are not required to be interoperable with the rest of the network.
  
- The key barriers to entry are:
  - Aggregation – aggregation into a wider service contract prevents smaller specialist suppliers from entering the market.
  - Long contract duration – means opportunities to enter the market are limited.



# Findings: Entry barriers- Mainline ATG



Small market size and potential growth limited



Demand released on a fragmented and inconsistent basis

Failure to purchase IP could result in purchasers becoming tied to one supplier



Interoperability - No option for a third party ATG supplier to offer gates with Oyster Functionality

# Interoperability

- TOCs whose networks include a London terminus require at least some of their ATGs to be compatible with the TfL network.
- Cubic is currently the only supplier that is able to supply ATGs which link up to the TfL network.
- Pearl readers which are available for TVMs (or an equivalent product) are not available for ATGs.
- Potential new entrants view compatibility to be a key barrier to entry

TOCs with stations within the TfL network said compatibility was “*an absolute requirement*” or “*essential*”

TOCs told us that this means they have “*no option*” but to purchase Cubic ATGs



# Findings: ATG Outcomes



Stakeholder views indicated high prices  
Profitability analysis supports this view



High customer satisfaction and good safety  
record



General dissatisfaction with level of innovation.

Difficulties with the roll-out of smart ticketing  
initiatives such as barcoding have, in part, been  
attributed to the limited supply chain for ATGs.

# Recommendation

**TfL, industry and alternative ATG suppliers work together to develop both short term and longer term solutions to provide ‘interoperable’ access to TfL systems for third parties.**

# What we hope to achieve

- Interoperable access to TfL's network for third parties
- Market opportunities:
  - Potential to bid for the new RCC contract
  - Ability to supply TOCs who require ATGs with access to the TfL network



# Revenue Collection Contract - Summary

05 July 2019

## Some History .....

- The Ticketing Services Contract (Prestige Contract) – August 1998
  - Between London Regional Transport and Transys (Cubic UK, EDS International, International Computers, and WS Atkins)
  - Contract length was 17 years (to 2015).
  - Ended August 2010.
- The Future Ticketing Agreement (FTA) was signed in 2008.
  - Transition phase until August 2010
  - Full Service Delivery until August 2015
  - FTA handback provisions – Supply of smartcards, and fixed wide area network (WAN) services handed back to TfL in August 2013 (ie, were then separately procured).
  - Retained services comprised the operation and maintenance of the automated fare collection (AFC) equipment (ie, “front office” gatelines, validators, ticket vending equipment, and their control systems) and back office systems; the management of the retail network, the enablement and distribution of ticketing media.



## Some History .....Part Two

- Project Electra – set up to review options and prepare for tender.
  - Early Market Engagement – 2011/2012
  - OJEU tender - 2012-14
  - RCC Award – August 2014
  - RCC Commencement – August 2015
- Project Electra Principles
  - Packaging of services to best suit the wider market.
  - Creation of level playing field for suppliers to ensure open competition was possible.
  - Ownership of intellectual property by TfL to ensure easier access and comprehension of the system – and to ensure TfL's future options remained open and unrestricted.
  - Enable successful interaction and operations with interfacing systems.





# The Revenue Collection Contract with Cubic

## ➤ Contract Term

- Initially 7 years, Aug 2015 – Aug 2022
- Additional 3 year option – exercised in 2017, so contract term is now until Aug 2025.

## ➤ Contract Scope

- RCC combined front office (customer facing) services, back office (data centre based) services, inter-related systems, systems integration, data centre hosting, and retail network management.
- Data centre hosting is currently being moved to TfL.
- Complex interfaces between front office, back office, and inter-related systems – hence the decision to pass risk across to the supplier.



# The Revenue Collection Contract with Cubic

## ➤ Risk and Liability

- TfL has designed the RCC to transfer risk across to Cubic and to protect revenue.
- Cubic therefore take accountability for all front office, back office, and systems integration activities.
- Normal SLAs and KPIs are built into the RCC, and additionally Cubic are required to compensate TfL for loss of revenue caused by system outages.
- Cubic are therefore motivated to proactively operate and maintain the overall system (Integrated Revenue Collection system, or IRC) to a high standard for the duration of the contract.



# The Revenue Collection Contract with Cubic

## ➤ Contract Exit

- Cubic are required to leave the IRC in a state capable of normal support and maintenance for 2 years following contract expiry (ie, to August 2027).
- TfL has taken steps to own or have access to all the key Intellectual Property in the IRC, supported by all the relevant data and documentation.
- These measures are intended to make it possible to run a competitive tender for “RCC2” on a level playing field basis.
- Strategy and planning for RCC2 is underway, and TfL expects to launch an OJEU process in 2022/23.



# The Revenue Collection Contract with Cubic

Any Questions?





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# TOC Gate Integration with the TfL Reader

*John Hill*

A woman with long dark hair, wearing large white headphones, is looking down at her smartphone. She is wearing a patterned cardigan over a dark top. The background is a blurred transit station with overhead lights and a train. A dark blue horizontal bar is overlaid on the left side of the image, containing the CUBIC logo and the text 'Transportation Systems'. A semi-transparent orange overlay covers the bottom half of the image, with the text 'Current Situation' centered in white.

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**Current Situation**

# Scale

- There are currently in the region of 100 TOC/Network Rail stations inside the London Travelcard zones that are gated.
- These are operated by 8 different TOCs
- Approximately 1300 gates, all of which have been supplied by Cubic under direct contract to the TOCs or Network Rail
- Many stations allow access to a multiple range of services (e.g. TOC, LUL, TfL Rail, Tram etc.)
- They accept up to 5 different ticket media
  - Oyster
  - ITSO
  - Contactless
  - Magnetics
  - Barcode (not all stations/gates)

# history

- Since the launch of Oyster in 2003, agreements have been in place between TfL and the TOCs governing the role that each party plays in:
  - Granting access to the transportation network
  - Collection of revenue
  - Allocation of revenue
  - Revenue Inspection
  - Sharing of data
- These agreements have evolved over the years to include the impact of:
  - Extending Oyster Pay-As-You-Go (PAYG) to National Rail services
  - Introducing Contactless PAYG to National Rail services
  - Introducing acceptance of ITSO products in London
- Under the terms of these agreements TfL provides contactless smartcard readers, and associated services, to the TOCs for integration into their gates as well as platform validators incorporating the same readers



# Key points

- TfL role
  - TfL is largely concerned with the acceptance of Oyster, Contactless and ITSO via its reader
  - TfL plays only a minor role in the acceptance of magnetic tickets
  - TfL plays no role in the acceptance of barcode tickets
- All readers and associated infrastructure (Local Area Networks, switches, communications and back office systems) are the property of TfL and TfL is responsible for the supply and operation of these assets
  - TfL subcontracts most of these responsibilities to its service supplier (currently Cubic)

# Current architecture

# Issues with current architecture

- Current Gate / Reader Interface
  - Developed almost 20 years ago
  - Based on non-standard protocols
  - Supports historical data exchange requirements which are no longer in use
  - Should be re-written to facilitate integration with other vendors' equipment
- Current approach uses TfL Station Computer, WAN and Back Office to route magnetic ticket data back and forth from the TOC gates to the TOC Back Office
  - This should not be replicated in any future system architecture

# What is pearl?

- Developed in 2004, in response to industry demand to allow multiple vendors to supply ticket vending machines capable of retailing Oyster
- TfL developed a Pearl reader which is a variant of the Oyster Point of Sale readers in use on the TfL estate
- Vendors entered into an agreements with TfL & TfL's service provider (currently Cubic) to allow integration, accreditation and operation of Pearl readers on vendor TVMs
- Vendors received
  - Hardware and software interface specifications
  - Software Developers Kit
  - Accreditation Process documentation
  - Accreditation Test documentation
- TOCs enter into agreement with TfL to retail Oyster
- TOCs procure Oyster accredited TVMs from vendors

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# The Proposition

# Potential approach for gates

- TfL develops a new architecture for TOC stations with a simplified gate/reader interface
- TfL establishes a 'Pearl equivalent' accreditation regime and associated facilities which will be used to accredit vendor gates for connection to the TfL Reader
- Vendors enter into agreements with TfL and TfL's service provider (currently Cubic) to obtain access to software developers' kit and associated documentation
- Vendors develop gating systems to comply with the TfL interface specifications
- Vendors achieve TfL accreditation
- TOCs enter into agreement with TfL to provide TfL Readers for the purpose of gating new stations or replacing existing gates at stations
- TOCs procure gates, including in their specifications a requirement for gates to be TfL accredited

# Potential architecture

# Front office comparison

Current

Potential



# Issues for consideration

- The potential approach on the previous slides is not currently funded or planned in TfL's backlog of development activities
- The licence to use the TfL Reader will apply only within the PAYG area
  - Vendors will need a different reader solution for gates installed outside that area
- A Level 1 maintenance regime will need to be agreed which will either allow the TfL service provider access to the TfL readers in the TOC gates or will define the means by which the TOC service provider will handle TfL readers
  - Note that TfL readers form part of a Payment Card Industry Data Security Standards (PCI DSS) regime which dictates, amongst other things, how the readers are physically secured, managed in transit etc.
- A change management regime will need to be implemented that takes into consideration the impact of TfL reader software changes (which occur regularly as new features are introduced) and vendor gate changes.

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