

ITT2B: Intelligent Transport Systems (ITS)

Scenario

1. Background

“Intelligent Transport Systems (ITS) are advanced applications which without embodying intelligence as such aim to provide innovative services relating to different modes of transport and traffic management and enable various users to be better informed and make safer, more coordinated and ‘smarter’ use of transport networks.

ITS integrate telecommunications, electronics and information technologies with transport engineering in order to plan, design, operate, maintain and manage transport systems. The application of information and communication technologies to the road transport sector and its interfaces with other modes of transport will make a significant contribution to improving environmental performance, efficiency, including energy efficiency, safety and security of road transport, including the transport of dangerous goods, public security and passenger and freight mobility, whilst at the same time ensuring the functioning of the internal market as well as increased levels of competitiveness and employment. However, ITS applications should be without prejudice to matters concerning national security or which are necessary in the interest of defence.”

Ref: EU directive 2010/40/EU

<https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:207:0001:0013:EN:PDF>

2. Key Requirements

- 2.1 ITS systems are required to be optimised to deliver system performance to latest TfL and relevant industry standards with reduced whole-life costs including low obsolescence risks.
- 2.2 ITS system design, recommended processes and installation shall comply with TfL legal obligations / statutory requirements and relevant approved codes of practice.
- 2.3 ITS design needs to take into account the full range of physical conditions including environmental factors, vandalism and potential operator misuse likely to affect system performance.
- 2.4 ITS systems need to be capable of being expandable and upgradeable without causing any hardware / software conflicts with existing systems
- 2.5 ITS systems need to self-test key functional and system requirements and permanently log and self-report these results via appropriate alarms as necessary
- 2.6 ITS system design needs to ensure system /network and archived data access is secure and only available to authorised personnel.
- 2.7 The supplier needs to show how system changes are controlled and overall quality of outputs; designs/ documentation/ processes is managed.

3. Key Accountabilities

- 3.1 Manage delivery of ITS system requirements ensuring adequate provision of assurance to relevant TfL stakeholders
- 3.2 Conduct testing and assessment of equipment to TfL specifications, including writing those specifications where they do not exist
- 3.3 Establish and maintain effective relationships with Sponsor and programme team discipline engineers, Operational / user representatives, Network security, third-party suppliers and any other stakeholders.
- 3.4 Ensure dependencies are understood and appropriately managed, both within and across Projects and Programmes, and coordinated with other business units in TfL
- 3.5 Ensure risks and issues are actively managed in accordance with TfL procedures and escalated in a timely manner where necessary.

4. Scenario Description

- 4.1 TfL is committed to reduce whole-life costs through smart procurement, pragmatic risk management and cost-efficient design and maintenance strategies. As part of this, TfL wishes to update its existing on street detection infrastructure with more versatile and cost effective units
- 4.2 TfL has a number of existing detector use cases that it currently fills with existing detector technology, and a number of new use cases that would provide additional functionality for improved safety and traffic flow

TfL has identified a number of solutions that could potentially be used to fill its detection use cases. Their specifications indicate that they are able to meet some of the new use cases without compromising on TfL's ability to support its original requirements

- 4.3 However, the functionality of these devices needs to be assessed to ensure they comply with TfL's requirements, and any weaknesses or issues in terms of installation, operation, maintenance and decommissioning need to be identified

5. Response Content

In no more than 1500 words contained in a maximum of 5 sides of A4 (pictures, diagrams etc. may be included in the sides of A4 limit), provide evidence the following:

- 5.1
 - In respect of the provided scenario description, describe how you would conduct an assessment of the proposed products.
 - This should cover specification of the detector requirements, and the process of testing the detectors against this specification, including assessment of the unit's entire life cycle in terms of cost and performance.

- It is acceptable to use examples of previous trials you have conducted to demonstrate specific issues or points, however this should be limited to demonstrating how you would apply knowledge from previous projects to a new project.
- How would you deliver your key accountabilities?

5.2

- Following a successful assessment of a product, describe how you would enable the integration of the detector's output into TfL's Traffic Control System
- This should cover the entire process, including the processing and analysis of detector data, its integration into the traffic control servers, and any hardware or networking implementation that may be necessary
- It is acceptable to use examples of previous projects you have conducted to demonstrate specific issues or points, however this should be limited to demonstrating how you would apply knowledge from previous projects to a new project
- How would you deliver your key accountabilities?