

SCHEDULE 2 – Appendix 42

MIS Requirements

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1 MIS		
Introduction		
<p>The MIS is a centralised Management Information System provided as part of the Core IT Service Element which provides TfL with an end-to-end reporting function across all Service Elements for all reporting other than Business Operations and Enforcement Operations PI reporting. This section includes requirements on PI and standard reporting, MIS design, scalability and extensibility and support and maintenance.</p>		
1.1 General		
M1.1.1	R1	Mandatory
<p>The Service Provider shall provide a Management Information System (the MIS) for use by TfL.</p>		
M1.1.2	R1	Mandatory
<p>The Service Provider shall ensure that all Standard Reports are generated from the MIS and that all Performance Indicator Reports are capable of being generated from the MIS</p>		
M1.1.3	R1	Mandatory
<p>The Service Provider shall ensure that the end-to-end Ad Hoc Report, direct access and Standard Report functions against all the Data elements stored in the MIS data warehouse.</p>		
M1.1.5	R1	Mandatory
<p>Sources of Data elements stored in the MIS data warehouse shall include but not be limited to:</p> <ul style="list-style-type: none"> • Business Operations Service Element; • Enforcement Operations Service Element; • Detection and Enforcement Infrastructure; • Retail; and • Core IT Service Element. 		

M1.1.6	R1	Mandatory
The MIS shall, as a minimum, receive, store and process the high-level categories of Data as specified in the Logical Data Model, as detailed in appendix 40: Solution Architecture.		
M1.1.8	R1	Mandatory
The Service Provider shall migrate historic MIS Data into the MIS from legacy sources.		
1.2 PI and Standard Reporting		
M1.2.1	R1	Mandatory
The MIS shall provide the Core IT Performance Indicator Reports as specified in schedule 5: Service Level Agreement.		
M1.2.3	R1	Mandatory
The MIS shall provide the option to add further Performance Indicators in relation to the Core IT Services and Core IT System and Standard Reports at TfL's request. TfL may request additional reports via the Change Control Request Procedure.		
M1.2.4	R1	Mandatory
The Service Provider shall provide all Performance Indicators in relation to the Core IT Services and Core IT System Reports relevant to the previous period's performance on the Working Day of the following period as specified in schedule 5: Service Level Agreement.		
M1.2.5	R1	Mandatory
The MIS shall provide reporting Schema required to reproduce the Performance Indicator Reports as specified in schedule 5: Service Level Agreement.		
M1.2.6	R1	Mandatory
The MIS shall provide Standard Reports to support schedule 8: Operational Pricing.		
1.3 Ad Hoc Reporting		
M1.3.1	R1	Mandatory

The MIS shall provide tools and access privileges that permit Users to write their own Ad Hoc Reports, use drill through methods, and create tables.		
M1.3.2	R1	Mandatory
The Service Provider shall ensure that MIS team Users are provided with tools, have appropriate authority, and MIS Systems have Capacity for operation in accordance with this Agreement.		
1.4 Design		
M1.4.1	R1	Mandatory
The MIS shall be based upon well supported and leading industry database, ETL and reporting package(s).		
M1.4.2	R1	RFI
<i>[This requirement has been removed because it was an RFI]</i>		
M1.4.3	R1	Mandatory
The MIS shall implement an architecture comprising distinct schema and processing to support: <ul style="list-style-type: none"> • load stage for validation and processing of inbound Data • Data Store • Reporting Schemata; and • Sandbox. 		
M1.4.4	R1	Mandatory
The Service Provider shall implement the MIS in such a way that the MIS analysis and reporting functions do not impact the performance of the Operational Core IT System.		
M1.4.5	R1	Mandatory
The Service Provider shall ensure that an independent load stage is provided for each MIS Data Provider which provides MIS Data. For the avoidance of doubt this includes the Core IT Service Element.		
M1.4.6	R1	FYI

Each external source of MIS Data shall be responsible for pushing Data to its designated load stage. This Data shall be received via the MIS Interface(s) as specified in appendix 41: Interface Specification.		
M1.4.7	R1	Mandatory
The Service Provider shall provide a mechanism as part of the Core IT System for determining all Changes that have occurred to the Operational database(s) within the Core IT System and providing this delta information to the MIS. It is expected that this delta should be determined using the history Data tables associated with the Operational database. For the avoidance of doubt this delta shall include all intra-day changes to the Operational Data.		
M1.4.8	R1	Mandatory
The MIS shall validate all the Data in each load stage and transfer the validated Data to the Data stage.		
M1.4.9	R1	Mandatory
The Service Provider shall ensure that validation includes Data referential integrity checks and Data range checks.		
M1.4.10	R1	Mandatory
The Service Provider shall ensure that the Data stage consists of a relational database within the data warehouse.		
M1.4.11	R1	Mandatory
The Service Provider shall ensure that the Data stage is in the appropriate normal form.		
M1.4.12	R1	Mandatory
The Service Provider shall ensure that once the Data has been transferred to the data warehouse, the MIS shall populate the Reporting Schema tier in a way which maintains consistency at this level.		
M1.4.13	R1	Mandatory

The Service Provider shall provide a Sandbox area within the data warehouse which enables Users to create their own permanent tables.		
M1.4.14	R1	Mandatory
The Service Provider shall ensure that Users are able to pull Data into the Sandbox from other tables in the data warehouse.		
M1.4.15	R1	Mandatory
The Service Provider shall ensure that Users are able to manually pull Data or configure scheduled jobs outside of the Working Day to pull the Data that they require or provide and schedule appropriate extract jobs via the Change Control Request Procedure.		
M1.4.16	R1	Mandatory
The Service Provider shall ensure that the Sandbox area has a limited size and it is not possible for the tables in the Sandbox to adversely affect the performance of the MIS.		
M1.4.17	R1	Mandatory
The Service Provider shall ensure that it is possible for Users to load Data from the Load Stage into User tables within the Sandbox area.		
M1.4.18	R1	Mandatory
The Service Provider shall provide a mechanism which enables the MIS to be recovered back to the previous day's state prior to each day's load.		
M1.4.19	R1	Mandatory
In the event that a reload of the day's Data is necessary, the Service Provider shall provide a mechanism for reloading selected Data.		
M1.4.20	R1	Mandatory
The MIS shall be capable of holding up to five (5) days of Data in the Load Stage.		
M1.4.21	R1	Mandatory

The MIS shall provide one or more mechanisms for correcting, or compensating for, any erroneous Data held within the MIS. All mechanisms should be audited and be subject to the necessary governance controls.		
M1.4.22	R1	Mandatory
This MIS shall automatically log all amendments to the Data.		
M1.4.23	R1	Mandatory
In the event that Data is amended within the MIS, the Service Provider shall provide a mechanism for propagating the amendment through the other tiers of the MIS database.		
M1.4.24	R1	Mandatory
The Service Provider shall ensure that the MIS complies with TfL's security requirements as specified in schedule 14: Security Policy. In particular, access to the MIS shall be secure and only authorised Users shall be able to gain access.		
M1.4.25	R1	Mandatory
The MIS shall provide security features that support User and group level access control to Data, reporting functions and other features. Access control shall include read, search, insert or append, update, and delete privileges.		
M1.4.26	R1	Mandatory
Where agreed upon with TfL, the Service Provider shall be permitted to use native database replication of PMIS data from both Business Operations and Enforcement Operations to the Core Solution Element. If the Service Provider is permitted to use this option then the native database replication must be made available as an option to all Solution Elements. The Service Provider must still deliver the MIS Interface(s) specified in appendix 41: Interface Specification.		
1.5 Scalability and Extensibility		
M1.5.1	R1	Mandatory
The Service Provider shall implement the MIS to be scalable and extensible.		
M1.5.2	R1	Mandatory

The Service Provider shall implement the MIS to be scalable to two (2) times initial volumetric requirements without the need for a Hardware change.		
M1.5.3	R1	Mandatory
The Service Provider shall ensure that the design and implementation of the MIS supports the introduction of new MIS Data sources.		
M1.5.4	R1/R2	FYI
New MIS Data sources will be introduced under the Change Control Request Procedure.		
M1.5.5	R1	Mandatory
It is anticipated that the volume and structure of MIS Data will change throughout the life of the MIS. The Service Provider shall design and implement the MIS such that minimal effort is required to implement modifications to support such changes.		
M1.5.6	R1	RFI
<i>[This requirement has been removed because it was an RFI]</i>		
1.6 User Requirements		
M1.6.1	R1	Mandatory
The Service Provider shall provide Users with Web-based client access to the MIS.		
M1.6.2	R1	RFI
<i>[This requirement has been removed because it was an RFI]</i>		
M1.6.3	R1	Mandatory
The Service Provider shall provide a secure method for communication, and manage and operate User authentication to the MIS for all MIS Users.		
M1.6.4	R1	RFI
<i>[This requirement has been removed because it was an RFI]</i>		
M1.6.5	R1	RFI

<i>[This requirement has been removed because it was an RFI]</i>		
M1.6.6	R1	Mandatory
<p>MIS shall be available from the following locations.</p> <ul style="list-style-type: none"> • TfL buildings; • Enforcement Operations Service Element Pound(s) and other Enforcement Operations Service Element locations; • Business and Enforcement Operations Service Elements Contact Centre(s); and • Business Continuity Premises. 		
M1.6.7	R1	Mandatory
<p>The Service Provider shall provide concurrent access for all Users of MIS and shall initially provide all necessary User licences for fiftyfive (55) Users.</p>		
M1.6.8	R1	Mandatory
<p>The Service Provider shall provide TfL with the option to add additional Users.</p>		
M1.6.9	R1	Mandatory
<p>The Service Provider shall ensure that the MIS provides the necessary scalability, both in terms of Hardware and Software, to support these additional Users.</p>		
M1.6.10	R1	Mandatory
<p>The Service Provider shall provide and support these additional Users in accordance with a pricing structure agreed with TfL prior to contract award.</p>		
M1.6.11	R1	FYI
<p>The MIS will be accessed by the following groups of TfL Users:</p> <ul style="list-style-type: none"> • Enforcement Operations Service Element; • Business Operations Service Element; • MIS team; • Directors of Congestion Charging; • Selected individuals from the Strategy and Policy/Technical and Commercial teams; and • any further group of individuals that TfL nominates. 		

M1.6.12	R1	Mandatory
The MIS shall allow Data to be exported from the reporting tool in Comma Separated Value format that is compatible with the Microsoft Office suite.		
M1.6.13	R1	Mandatory
<p>The MIS shall support the following User types:</p> <ul style="list-style-type: none"> • browser User – read access to all aggregated MIS Data; read access to drill-through Data on a per-view basis; ability to run all Standard Reports; • MIS team User – read access to all drill-through Data; ability to create temporary tables, ad hoc queries, permanent tables within the Sandbox area and new Standard Reports accessible by other Users; and. • supervisor User – ability to add, remove and update Users. 		
1.7 Support and Maintenance		
M1.7.1	R1	Mandatory
The Service Provider shall provide the necessary Support Personnel to maintain, support and administrate the MIS.		
M1.7.2	R1	Mandatory
<p>The Service Provider shall be responsible for undertaking all activities required to provide and maintain the provision of the specified reporting functionality. This shall include but not be limited to:</p> <ul style="list-style-type: none"> • loading Data from the MIS Data sources; • maintenance of the MIS including back-up; • provision of technical support to Users; • Incident management; • functional specification, implementation and Testing of changes to the MIS; and • monitoring and tracking Data load and extract processes. 		
M1.7.3	R1	Mandatory
The Service Provider's support Personnel shall provide telephone support to Users during Working Hours.		
M1.7.4	R1	Mandatory

<p>The Service Provider's support Personnel shall be responsible for identifying any failure of the MIS. This shall include, but not be limited to:</p> <ul style="list-style-type: none"> • failure to receive expected Data from a MIS Data Provider; • failure to process the received Data; and • failure to generate reports. 		
M1.7.5	R1	Mandatory
<p>The Service Provider shall initially record any failure of the MIS as a Severity 2 Incident.</p>		
M1.7.6	R1	Mandatory
<p>The Service Provider shall provide appropriate User and technical Documentation to be approved by TfL for each MIS release. Documentation shall include, but not be limited to:</p> <ul style="list-style-type: none"> • the database tables; and • the database structure. 		
M1.7.7	R1	Mandatory
<p>The Service Provider, at TfL's request and in accordance with schedule 9: Change Control Request Procedure, shall provide the necessary Support Personnel to implement the Changes to the MIS.</p>		
<p>1.8 Availability and Access</p>		
M1.8.1	R1	Mandatory
<p>The Service Provider shall ensure that the MIS is available during Working Hours.</p>		
M1.8.2	R1	Mandatory
<p>The Service Provider shall ensure that the MIS publishes consistent Data to Users of MIS at all times.</p>		
M1.8.3	R1	Mandatory
<p>The Service Provider shall provide TfL with access to the MIS during Working Hours.</p>		

M1.8.4	R1	Mandatory
<p>The Service Provider shall ensure that by midday (12:00pm) each day, all MIS analysis and reporting functionality accurately reflects all Data received from MIS Data providers by 6am of that day.</p>		
M1.8.5	R1	Mandatory
<p>The MIS shall be available in accordance with the Service Levels for the Core IT System availability specified in schedule 5: Service Level Agreement.</p>		