2.3.4. Reporting Module - Generation of Reports

2.3.4.1. Business Object

The reports are designed using Business Object software.

Only a web browser will be necessary on the client workstation to view the reports. No specific installation is needed.

2.3.4.2. Reports Access

When logging into the provided web application, the operator will only view the reports which he is entitled.

The provided web application will forward the operator's request to the Business Object server and will show the selected report.

2.3.4.3. Data Warehouse

The reporting data warehouse will be provided with scheduled batches for populating this data warehouse with data in the toll system. It is supposed that the external entities provide data as Oracle tables with additional columns to know the state of treatment. Though others interfaces may be possible, they are not provided in this proposed solution.

It is also assumed that

- All the needed data for displaying the requested reports are provided by the external entities

- That the Oracle tables provided by the external entity are updatable by the reporting module

- That the minimum of the time slot used as criteria for reports is the hour: 00h00mn to 01h00mn, 01h00mn to 02h00…

2.3.4.4. Data Export

Business Objects provides facilities for exporting the data from a report to an external representation, such as PDF or Microsoft Excel for instance (indicative).

The available export formats will be those provided in standard by Business Objects.

2.3.4.5. Design of Reports

Although a list of reports will be provided, the "Concession" Operator will be able to create new reports or modify existing ones. These features will be achievable via Business Object software tools.

2.3.4.6. Availability of the Data for Reporting

Functionality for removing obsolete data will be provided.

The obsolescence of data will be defined by a set retention period for each business area.

2.3.4.7. Reporting

2.3.4.8. Performance

Although reports will be design in a manner to emphasise a fast time display, however this performance will depend on the criteria specified by the operator.

2.3.5. Reporting Module - Reports

The reports are broken down into various business areas:

- Traffic Area

- Financial Area

- Technical Area

- Performance Area

This breakdown, as the assignation of reports by business area is not static; it will be defined during the specification phase.

2.3.5.1. Traffic Reports

2.3.5.1.1. List of Shifts Report

This report shows the list of shifts information based on the following criteria:

- Time slot

- Toll collector or automatic payment terminal

- Geographic location (lane or TP)

For each line of this report, a link will allow the operator to view the detail of selected shift

2.3.5.1.2. Shift Report

This report will be presented as a table whose columns give the details of the shifts.

The mandatory criteria for this report are:

- The shift identification

- A time period within this shift

A link will be provided to access all the transactions attached to this shift.

2.3.5.1.3. Transactions Report

This report will be presented as a table whose columns give the details of the transactions.

The search functionality will be based on the following criteria:

- Time slot (mandatory)
- Toll collector
- Lane/TP
- Shift ID
- Transaction ID
- Payment means
- Lane serviceability mode
- Transaction type (manual or automatic)
- Type of Vehicle (All, exempt or not)
- License plate number (complete or partial)

For each line of this report, a link will be provided to access images and video of the transaction (if available).

2.3.5.1.4. Classification Problems Report

This report will be presented as a table whose columns give the details of the transactions with inconsistency of classes.

The search functionality will be based on the following criteria:

- Time slot (mandatory)
- Geographic location (lane, TP or Concession)

2.3.5.1.5. Violations Report

This report will be presented as a table whose columns give the details of the transactions for vehicles which committed a violation.

The search functionality will be based on the following criteria:

- Time slotTilme slot (mandatory)
- Geographic location (lane, TP or Concession)
- State of the due toll (has not been paid yet, has been paid in retrospect)

2.3.5.1.6. Incorrect Trips Summary by Payment Means Report

This report will be presented as a table with number of incorrect trips per payment means for a specified time slot and geographic location.

This report will only show the payment means with at least one incorrect trip.

The search functionality will be based on the following criteria:

- Time (mandatory)
- Geographic location (lane, TP or Concession)

2.3.5.1.7. Incorrect Trips Summary by Customer Report

This report will be presented as a table with number of incorrect trips per payment means for a specified time slot and geographic location.

This report will only show customer with at least one incorrect trip.

The search functionality will be based on the following criteria:

- Time slot (mandatory)
- Geographic location (lane, TP or Concession)

2.3.5.1.8. Incorrect Trips Report

This report will be presented as a table whose columns give the detail of the incorrect trips for a specified payment mean or customer and for a specified time slot.

The search functionality will be based on the following criteria:

- Time slot (mandatory)
- Payment means or customer ID (Mandatory)
- Geographic location (lane, TP or Concession)

2.3.5.1.9. Lane or TP Activities Report

This report will be presented in four parts:

- A line with some number as

    o Number of violations

    o Number of releases from payment

    o Etc.