



SICE'S TOLLING OPERATIONAL BACKOFFICE - TOS

SICE's Tolling Operational Back Office Software platform (TOS) is the operational system component of SICE's comprehensive back office solution (OCBOS) offered for All Electronic Tolling (AET) & Open Road Tolling systems (ORT). The TOS component of OCBOS has been developed as a result of specific tolling needs identified by SICE in previous implementations where massive amount of electronic tolling transactions are needed to convert in billable events.

The main drivers of this product are:

- To provide a full auditable tool to convert without losses all tolling transactions coming from roadside equipment into billable events to be sent to commercial back office platforms.
- To bring a cost-effective, flexible and dedicated back office tolling solution easy to customize to each project specifics (pricing schemes, image review strategies, trip building capabilities, maintenance monitoring) independently of the roadside equipment provider.

SYSTEM DESCRIPTION

The TOS component of OCBOS platform is a modular software solution that allows a great flexibility during implementation and a high level of adaptability to different hardware architecture platforms.



It can be integrated with either SICE's ORT Roadside Equipment, or with any existing roadside system. It can also be integrated with either SICE's Commercial Back Office SW component of OCBOS platform (BIS), or with any other CRM/ERP system.

With two well-defined subsystems named **Toll Management Subsystem (TMSS)** and **Operations & Maintenance Subsystem (OMSS)**, the TOS performs all transaction processing functions while providing the operator with all necessary tools to audit, monitor and control all data collected and processed by the system.

KEY FEATURES OF TOS

Some of the key features that the TOS solution provides are:

- Dedicated channels for verification & validation of each type of information exchanged with the RSE.
- Offline messages recovery if communications is lost with the RSE.
- Construction of business transaction using data collected from the RSE.
- Trip Construction for trip-based tolling.
- Advanced Automatic Video Identification tools for optimization of Image Review (own solution or integration with third parties).
- Configuration of multiple tolling products (e.g. video tolling, tag) and configuration of applicable toll rates, including dynamic pricing (own solution or integration with third parties).
- Configuration and action management for each trip/transaction (e.g. low balance notifications).
- Homogenization of transactions coming from different RSE systems.
- Security and auditory management.
- System monitoring and reporting tools.
- Multiconcessionaire, Multiprovider (RSE) and Multiservice (e.g. tolling, parking).

TOLL MANAGEMENT SUBSYSTEM (TMSS)

Processes all the information exchanged between Roadside System (RSE) and Commercial Back Office (CSC/BOS), including Image Review. It is composed by the following modules:

Toll Station interface and Customer Service Interface
Interfaces with the RSE of one or several providers (information, images, lists and tables), and with the Commercial Back Office.

Transactions Processing

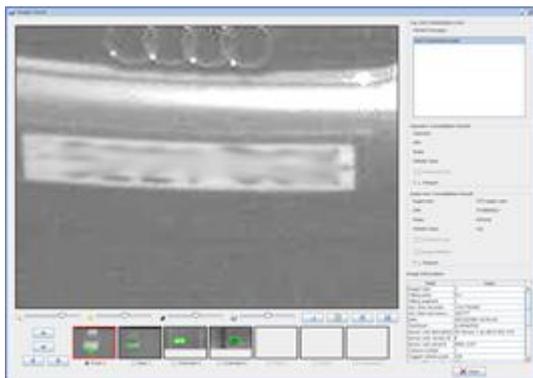
Used to process all the information from the RSE and ensure that it is sent to the CSC/BOS with the specified format, including Trip Construction where applicable.

Toll Rating

Assigns the appropriated toll rate to each transponder, LPN or violation transaction received from the RSE.

Actions Management

Launches different actions/notifications/alarms based on configurable rules. Also distributes images for storage.



ADDITIONAL FUNCTIONALITIES

Other important functions that the TOS system provides are:

- Management of Image Review workflow, including functions such as queue management based on operator roles and workload monitoring.
- Ability to handle multiple formats to exchange information with the commercial back office and other interfaces (RFC, ASCII, XML).
- Capability to process over 6 million transits and 2 million images per day.
- Provides a comprehensive and user friendly set of interfaces that allow the user to do a full trace of information across TOS processes.

OPS. & MAINT. SUBSYSTEM (OMSS)

Provides the necessary tools for the operators to monitor and audit the system, used from an administrative perspective.

It is composed by the following modules:

Alarms

Used to collect and monitor the alerts generated in the RSE, TOS and CSC/BOS levels.

Parameterization

In charge of allowing the operator to configure all the parameters that ultimately define the TOS behavior.

Audit

Detects errors, irregularities and deviations in the processed information.

After evaluation, corrective actions for each case are suggested to be undertaken (includes Transaction Viewer functionality).

Security

Responsible for storing all the required information in order to control the system access by users, defining all functionalities that each user type can carry out within the system.

Reporting

Design, management and visualization of the reports that have to be generated in the system (allows COTS software).

