

## **Multi-Free-Flow Tolling System *Update of the implementation Project***

Pedro Pinto  
ppinto@ascendi.pt

### **Abstract**

To comply with a request from the Portuguese Government, Ascendi developed a new tolling system that has many innovative processes in it.

The necessities of the Government for funding the road sector lead to a development of a new Multi-Lane-Free-Flow (MLFF) Tolling System that is in operation on two of Ascendi's Concessions (Costa da Prata and Grande Porto). This new tolling system was developed by Ascendi and complies with many new requisites and different characteristics.

The successes of the project lead to more implementations on 3 more concessions, 2 from Ascendi and one from other Concessionaire.

Ascendi will give an overview of the project, the technological model behind the MLFF Tolling System, the processes used in the installation, the main milestones achieved and how the project replies to a new business model.

An update overview of the status of the project will be presented.

## The Ascendi group



To foster mobility within Portugal, in 1997 the Government launched an international public tender for the conception, design, financing, construction, maintenance and operation of over 175 km of motorways connecting the northern littoral to the northern interior of the country.

In 1999, the corresponding concession was awarded to a consortium of Portuguese companies linked to the construction and financial industries which believed in a project for the future with a positive impact on the economic and social development of the country. This is how our organization was born.

Following the NRP (National Road Plan) 2000 (approved by Decree-Law no. 222/98 of 17 July, we bid for other international tenders. In four of these tenders, our bids were considered the best. Three motorway concessions were successively awarded to us in 2000, 2001 and 2002, and, another two were awarded, in the beginning of 2007 and during 2008. In 2010 Ascendi was awarded with other Concession named Pinhal Interior.

Today, only 12 years after the commencement of the first concession, we continue to expand. Our strong dynamics are maximized by a management team whose skills, training and experience have made it possible to implement the most advanced management techniques and tools. We are seen as a major domestic player in this area, as we have introduced competition in the national panorama of motorway concessionaires. Competition is a pillar of sustainability and, through our existence, the market may be more competitive and efficient.

We are currently an organization that serves a set of seven concessionaires which are together responsible for about 1370 km of motorways granted under concession by the Portuguese State.

We communicate an only, transversal brand among the diverse concessionaires. Our identity results of three elements: ascendant (growth), environment (responsible) and dynamics (fluidity). Our signature is "Ascendi is the way", representing development and ambition.

## The MLFF system

Since late 2007 Ascendi is working on the development of a Multi-Lane-Free-Flow system. A lot of studies have been done and a new and innovative system is now in place.

In 2008 Ascendi close an agreement with the Portuguese Government to change two Concessions working in shadow toll schema to a real toll schema (Grande Porto and Costa da Prata).

The system was development and now is working since mid October 2010. An update of the Project will be done, performance figures show a success system is in place. Ascendi is starting the installation of the system in 3 more concessions.

The main characteristics of the Multi-Lane Free Flow System installed under the agreement established in December 2008 are:

- Fully automated system requiring no human intervention for collection;
- Open System with main road Charging Points (CP) in selected sub-stretches:
  - Costa de Prata – 22 CP
  - Grande Porto – 26 CP
- Each CP will collect a toll rate corresponding to its predefined influence area;
- Vehicle identification through ELP (Electronic License Plate) reading or photograph with License Plate Recognition using OCR technology;

The CP transactions comprised in a journey will be clustered in a single business transaction that is in every way similar to that of a closed system transaction, in which the toll amount charged is determined by the entrance and exit interchange.

- Payment systems available:
  - Primary collection to be available by CTCE (Certificated Toll Collecting Entities, eg: Via Verde)
    - Payment system under contract (direct debit)
    - Pre-payment anonymous system
    - Pre-payment system with user's identification
  - Secondary collection to be available in CTT (Portuguese Post Office Company)

- Post payment anonymous system
  - Enforcement collection model previewed for non payments;
  - Previewed a schema to apply to foreign cars.

## The Project



The Organization Model to support the project management is based on the following principles. Five parallel Working Lines coordinated by a common Program Management team. Each Working Line deals with specific subsets of the system. The team involved in the project covers several specialties from electricians to civil workers and from consultants from software and business process. The identification of the suppliers involved in the installation of the system will be done, covering the details of each contribution.

Several private and public institutions were involved in the development of the system. The presentation will cover all the parties involved and details the role for each one.

Technical information of the system will be refreshed. Some performance indicator of the operation will be shown.

The main occurrences in the past year will also be addressed in the presentation and will give an flavor of the main software and hardware components to the audience.