



## A security plan procedure for Heavy Goods Vehicles parking areas: An application to the Lazio Region (Italy)



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### ABSTRACT

The growth of Europe's road freight transport and the existing regulations on driving time call for a parking provision review in the European road network while ensuring the utmost security for drivers and trucks. Despite the efforts of the European community on this issue, the design, construction and operation of Heavy Good Vehicles (HGVs) parking areas are yet not well defined, with a lot of differences from country to country. The result is that the number of existing and planned infrastructures is far from being capable of satisfying the driver demand for secure and comfortable parking spaces.

This paper focuses on a security HGVs parking plan for the Lazio Region in Italy. The study outlines a methodology to plan future actions to improve security in parking areas. Several steps of the methodology are based on data collected by a detailed survey to Public and Private Administrations, Italian haulage companies and truck drivers; the survey covers a large section of the study.

Based on the defined methodology the lack of secure parking areas for HGVs in Lazio Region is proved and measures to provide more secure parking areas are planned. Moreover the costs of improving security in parking areas are quantified and compared with the willingness to pay of truck drivers to ensure the parking areas will be financially sustainable.

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### 1. Introduction

Freight road transport has been under scrutiny from EU organizations for a long time. In Europe, approximately 72% of the total land-based freight transport is made by road (SETPOS Project, [Secure European Truck Parking Best Practice Handbook, 2009](#)) and the same mode is foreseen to increase by some 50% in quantity during the period 2005–2035 ([I-TREN 2030](#)).

Many efforts have been made to plan, finance and regulate the main European highway network ([Trans European Network – TEN-T, 2012](#)) and other relevant national and international roads in order to reduce present and future possible congestion and increase the level of its security.

In this context, Heavy Goods Vehicles (HGVs) parking raises many concerns in terms of security since thefts and robberies perpetrated in European parking areas are escalating: about 8000 crimes reported in 2006 out of which about 2000 truck thefts (SETPOS Project) amounting to an yearly loss of € 300 million.

A common European parking strategy has been recently established by SETPOS European organization within the SETPOS Project. The SETPOS project aims at four objectives:

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1. to assess and validate the requirements of stakeholders, i.e. drivers, dispatchers, forwarders, rest area operators, insurers, public authorities and shippers;
2. to formulate a common set of standards for secured parking;
3. to construct a number of pilot secured parking areas in trans-border regions in order to validate and demonstrate the set of standards;
4. to set up an information, guidance and reservation platform for all types of truck parking.

The project LABEL ([The European Truck Parking Area LABEL Project, 2011](#)), following the SETPOS project, is aimed at raising HGV parking security and quality standards in Europe by:

1. introducing a European standard certification scheme for truck parking areas;
2. developing an on-line database for users to allow certified sites to gain financial benefits.

However, despite the efforts made at EU level, the design, construction and operation of HGVs parking areas are yet not well defined, with a lot of differences from country to country.

In Italy, parking services are currently managed by private entities on public land.

Most of Italian highways are operated by “Autostrade per l’Italia S.p.A.” under concession agreements due to expire in 2038 and the same company is the concessionaire of parking areas located along the highway network. Usually these parking slots can accommodate both cars and HGVs, while only few parking areas along ordinary roads are reserved for HGVs.

In Italy about 20 trucks a day are stolen and 44% of the thefts are localized within highway parking areas: this is not only a security issue for truck drivers, but also a major problem for haulage companies due to the increase in insurance policies.

To put an end to the above situation, a number of initiatives at national level have been proposed: the national haulage companies register has produced the so-called “digital street” (“[La Strada Digitale](#)”), a pilot project for an integrated communication and localization platform for road transport, that provides, among other things, information on the current situation of parking areas.

Moreover the Ministry of Infrastructure and Transport launched UIRNet ([UIRNet, 2012](#)), a project for the development of a national platform for integrated logistics and inter-modality, which includes several services and activities such as the tracking and tracing of transported goods, the prevention and management of critical situations, the exchange of information and communication between logistics operators, etc.

Unfortunately, at present, results of the above mentioned projects are not yet available.

This study contributes to complementing existing literature by developing a general framework which takes into account HGVs parking security in a comprehensive manner. The paper covers a number of themes due to the complexity of the issue at hand: an analysis of current and future HGVs parking supply and demand, the definition of security scenarios inside parking areas and the evaluation of the financial sustainability of the above projects.

In particular it focuses on security plans for HGVs parking areas in the Lazio Region, Italy.

The Lazio Region is an important HGVs transit area due to its central location between Northern regions and Southern regions with intensive truck flows and high parking demand.

The study is structured into 6 Sections including this introduction (Section 1) and the conclusions (Section 6). Section 2 defines the methodology to plan the actions to improve parking security: it can be reached realizing both the appropriate availability of parking spaces and the suitable security measures.

Two main steps of the methodology are:

1. an estimation of HGVs parking demand based on a Federal Highway Administration (FHWA) model calibrated for the Italian case;
2. the development of a behavioural model describing truck drivers’ willingness to pay for long-term parking, in order to address secure parking financial sustainability.

Several steps of our methodology were fed with data collected through a detailed survey of Public and Private Administrations, Italian haulage companies and truck drivers; the survey covers Section 3 of the study. The analyzed problem involves a high number of subjects (haulage companies associations and union, truck dealers, private entrepreneurs, oil companies, national road agencies, road concessionaires) and a high number of variables (e.g. current and future HGVs parking supply and demand), most of them characterized by a stochastic behaviour (the choice of parking area by truck drivers, their willingness to pay for long-term parking in a high quality parking area): the aim of the survey is to take into account all these aspects along with the complexity of the problem.

Based on the developed methodology, the lack of secure parking areas for HGVs in the Lazio Region is demonstrated and operations to provide secure parking areas are planned (Section 4). Moreover the cost of improving security in parking areas is estimated and compared with truck drivers’ willingness to pay for long-term parking to ensure parking financial sustainability (Section 5).

The financial sustainability of HGVs parking areas represents one of the main points of the study. In reality parking areas in Italy are characterized by a private management on public land, but recent initiatives have been carried out to receive partial funding from public institutions (“[Sosta Serena](#)”). The problem is that even if revenues generated from oil, food

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