Truck parking information system

Truck drivers frequently turn parking areas, rest stops and service facilities alongside freeways into danger zones by maneuvering, obstructing other vehicles or parking illegally. Trucks parked in breakdown or deceleration lanes with disregard for the law and safety lead to the deaths of dozens of people each year. Truck drivers themselves find themselves caught between a rock and a hard place: either they exceed their driving hours limits looking for an official space and risk a heavy fine or they stop when their hours are up, park wherever they can and accept the prospect of parking penalties instead. And things are becoming increasingly worse because the construction of new parking areas can barely keep pace with the steady growth in heavy goods traffic.

Now help is at hand thanks to the Siemens truck parking information system: data on parking space occupancy at rest areas gathered in real time using laser scanners and sensors is made available to long-distance drivers to help them plan ahead and aim for a specific parking location.

The problem: death-trap rest and service areas

- February 2011: a car drove at full speed straight under an illegally parked truck at a rest area on the A93 freeway near Rosenheim. Three people died; one survived but was seriously injured.
- March 2013: at the Theißtal rest area on the A3 in Hesse, a light goods vehicle scraped a number of trucks parked in the breakdown lane before crashing into a car with four occupants. Two people died.
- June 2014: on the A6 at Heilbronn, a van went under a 40-tonne truck that had parked in the acceleration lane at the exit of the parking area. The van driver died.

The cause: the trucker’s dilemma

- Truck drivers must comply with statutory limits on driving hours. A break of 45 minutes is required after four and a half hours of driving. A driver must
stop for the day after nine hours at the wheel, with tachographs keeping a precise record of these hours. A driving period of ten hours is permitted twice a week. If drivers are caught exceeding the permitted driving hours, they usually have to pay the penalties out of their own pockets.

- As truck drivers approach the end of their permitted driving hours, they need to find a parking area.
- The German Federal Ministry of Transport (BMVI) commissioned a survey in April 2013 to count both the number of truck parking spaces along the country’s freeways and the total number of trucks parking at night. The results make sobering reading: there were 71,350 trucks parked, but only 60,410 parking spaces available.¹
- Truck drivers are therefore often engaged in a fruitless search for a free space at rest stops, service facilities or other parking areas.
- Of necessity, they then park illegally in acceleration, deceleration or breakdown lanes because the penalties for illegal parking are usually lower than those for exceeding the permitted driving hours.

The solution: the Siemens truck parking information system

- Federal and state governments in Germany have resolved to tackle the problem not just by constructing new parking spaces, but also by making more efficient use of existing capacity.
- Siemens and partner the Bavarian Center for Traffic Management (ZVM) have launched a pilot project, the only one of its kind in Europe, to install a truck parking information system at 21 parking lots and relevant gas stations and rest areas along the A9 freeway between Nuremberg and Munich.
- The system counts and classifies incoming and outgoing vehicles to calculate the number of free parking spaces available.
- This helps truck drivers to find a parking space, making it easier for them to stay within their driving hours limits and reducing the likelihood of them having to park in an inappropriate location. It also optimizes the capacity utilization of rest areas.

¹ German Federal Ministry of Transport (BMVI): Lkw-Parken in einem modernen, bedarfsgerechten Rastanlagensystem
How it works – the truck parking information system in detail

- The truck parking information system delivers information about available parking spaces at rest areas and truck stops into the cab. A laser scanner installed adjacent to the road measures the height and width of vehicles. Sensors incorporated into the road surface in the entry and exit areas determine speed, length and direction of travel.

- The measuring devices count passing vehicles and distinguish between cars and trucks. Control software transmits the number of occupied parking spaces to the freeway traffic and operations management center. This center monitors and manages the freeway traffic control systems and is also responsible for monitoring tunnels. The data is then forwarded in real time from the parking control center to suitable information platforms – smartphone apps, in-vehicle navigation systems, radio announcements and so on.

- The BayernInfo internet portal (www.bayerninfo.de) operated by Verkehrsinformationsagentur Bayern (VIB), one of the most sophisticated traffic management systems in the world, plays a very important role in disseminating traffic information. It too will provide information about parking spaces for truckers in future to help them plan their prescribed rest periods more efficiently.

- Drivers without internet access can obtain assistance at rest areas where two-meter-high information columns with touchscreens provide them with an overview of parking space availability.

- The parking app works in the same way as the information columns: a digital map shows truck drivers the parking spaces at rest areas. The names of the rest areas on the overview screen are color-coded, with red indicating that a rest area is full and green that there are spaces available. One quick glance is all a driver needs to assess the overall situation.

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