Technology that helps truckers take a break

November 7 2014, by Katharina Ebert

Although about 10,000 new truck parking spaces have been created since 2008, the extremely rapid increase in heavy-duty transport on German highways means that approximately 14,000 more truck parking spaces are still needed.

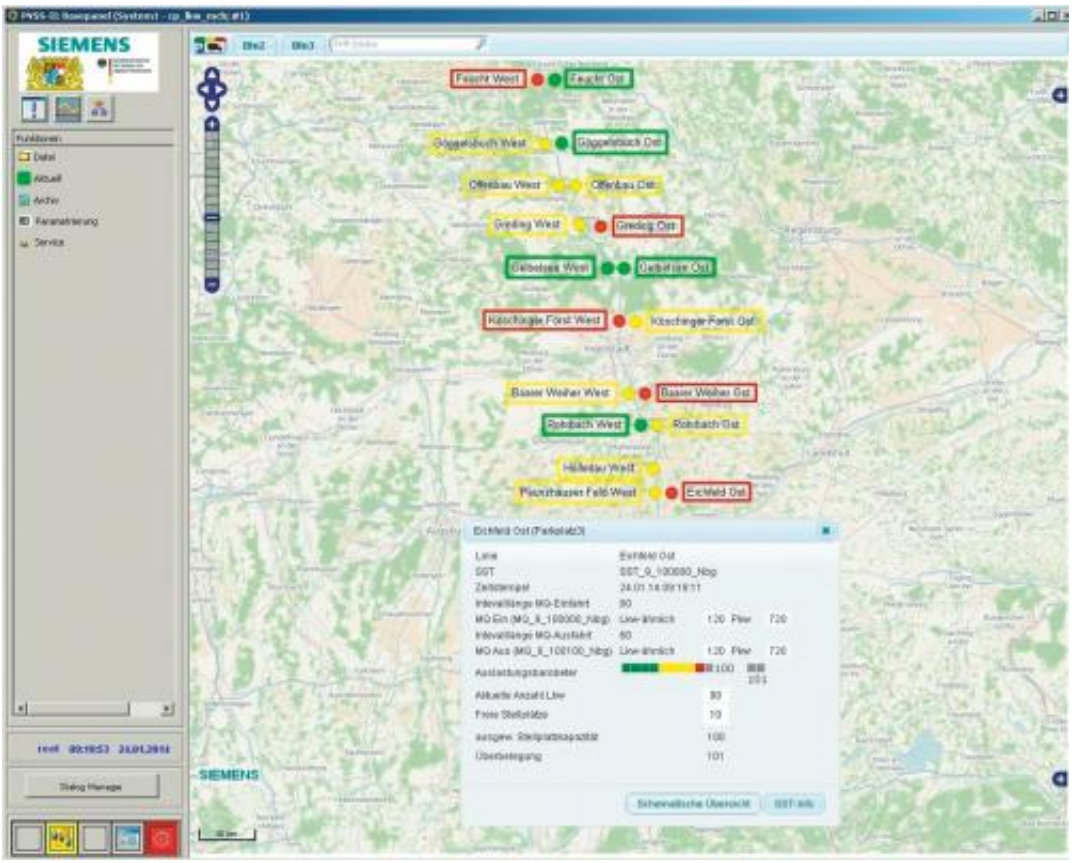
Every night on Germany's autobahns, truck drivers struggle to find the last available parking spaces. For long-distance truckers, that means stress—and sometimes real hazard. Siemens has developed a parking information system that accurately records the occupancy of individual parking spaces and forwards the information directly to truck drivers.

Wednesday evening, 10:00 PM, at the Köschinger Forst rest stop on Autobahn A9 near Ingolstadt, in southern Germany. Dozens of 40-ton semi-trucks are lined up in a row at the rest stop, one of them with its trailer extending into the highway's off ramp. Weary truck drivers have no hope of finding a parking spot here. They have to take a break every four and a half hours. The law requires it. But where are they supposed

to park? There is hardly room for even a car in the narrow gaps between the other rigs. Things literally look a bit gloomy when you reach the entrance to the rest area—because the lane is blocked with parked trucks. The search leads to frustration in the driver's cab. It's time to park. It doesn't matter how.

Fatal Problem

And that can be extremely dangerous. Accidents are a regular occurrence when cars turn into rest areas at high speed and suddenly encounter trucks that are jutting into the roadway because of makeshift parking. In February 2011, a speeding car struck and slid under a truck parked this way at a rest area on the A93 Autobahn. Three people died and one was seriously injured. At the beginning of March 2013, two people died at another rest area when a truck grazed several other trucks that were parked ahead of the rest area in the emergency lane. At the end of June 2014, a light van ended up under a parked 40-ton vehicle because the truck had parked unlawfully in a highway on-ramp near a parking area. The driver died.



Real-time occupany levels at rest stops as displayed in the traffic control center in Nuremberg.

The shortage of parking spaces and the fact that truckers are parking illegally is no secret to the traffic police inspectorate in Ingolstadt. "The service and rest areas along Autobahn A9 aren't filled to capacity every day, but shortages are increasingly common," says Chief Commissioner Markus Billner. For truck drivers, that's a problem. "If you drive too long without a break or you're tired, you get careless more easily. That's dangerous, because it can lead to more accidents," says Billner. To make sure they can get their rest periods, truck drivers sometimes resort to makeshift solutions. But that's risky. "A parking guidance system would be a way out of this dilemma: truck drivers could get their rest periods, and the safety of other road users wouldn't be jeopardized," says Billner.

Unique Pilot Project

The highway construction authorities of the German states are familiar with the problem too, and they know what's causing it, of course. Although about 10,000 new truck parking spaces have been created since 2008, the extremely rapid increase in heavy-duty transport on German highways means that approximately 14,000 more truck parking spaces are still needed. Creativity is required to tackle the problem. Building new parking spaces is not just expensive, it also takes a long time. Together with the Federal Ministry of Transport and Digital Infrastructure, Siemens has therefore launched a pilot project unlike any other in Europe: an intelligent parking guidance system for trucks is being set up at 21 parking and service areas on Autobahn A9 between Nuremberg and Munich. The system will make it easier to plan rest times and optimize parking space utilization.

The parking guidance system developed by Siemens brings up-to-date information about available parking spots at rest areas and truck stops right into the driver's cab. "Vehicles are counted and classified using road sensors and laser scanners at entrances and exits. A roadside laser scanner measures the height and width of each vehicle, and sensors installed in road surfaces at entrance and exit areas measure speed, vehicle length, and direction of travel. In combination, these two sets of measuring equipment make it possible to count vehicles with a high level of accuracy and classify them as cars or trucks. The number of occupied parking spaces, as identified by the counting stations, is then transmitted via special control software to the Siemens Parking Guidance Center at the Highway Transportation and Operations Control Center (VBZ), North District, in Nuremberg," explains Frank Pelzer, who manages the "Truck Parking" project at Siemens. The center in Nuremberg is responsible for control and monitoring of the Autobahn A9 traffic control systems as well as for monitoring of the tunnels. From the Parking Guidance Center, the various pieces of data are then transmitted

in real time to information platforms—such as smartphone apps, truck navigation systems, and radio broadcasting centers.

A vehicle measurement sensor at a roadside rest stop.

Real-Time Traffic Reports

"The Bavarian Traffic Information Agency (VIB) plays a major role in

disseminating information through the Internet portal BayernInfo, which is one of the most developed traffic management systems in the world," says Pelzer. This online platform has been helping road users for years with information about construction sites, the flow of traffic, and traffic announcements. In the future, it will also supply truckers with information about available parking spots so they can plan their mandatory rest periods. Those without Internet access can get assistance at rest areas. Approximately two-meter-high column-shaped information kiosks have been set up specifically for the Siemens project. Touchscreen displays at these columns give truck drivers an overview of the current state of occupancy at individual parking areas. The parking app works like the information kiosks: truck drivers are shown the parking spots at individual rest areas on a digital map. In an overview, the names of rest areas are highlighted in color according to their state of occupancy: red for occupied, and green for available. "This way, truck drivers can tell at a glance what the overall situation is," says Pelzer.

Wednesday night, 10:00 PM, Autobahn A9, direction Nuremberg. It's already dark. The traffic on the autobahn is thinning out. But here and there, a long-distance trucker is still meandering through the night in search of a parking spot. His parking app doesn't offer any hope of finding a place to sleep soon either: all the rest areas along the route show red—booked full. The navigation device recommends an alternative route that means driving an additional 15 kilometers or so. But then a glance at the cell phone provides some relief: a small green dot is visible. A place to sleep after all—at least for tonight.

The Highway Transportation and Operations Control Center in Nuremberg is responsible for control and monitoring of the Autobahn A9 traffic control system.

Provided by Siemens

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