Succesfull start of area-wide tolling in Slovakia

Siemens is the technology supplier for the satellite-based tolling system and the on-board units

The satellite-based truck toll system in Slovakia operated by SkyToll, launched operations according to plan in January 2010. As a technology partner, Siemens Mobility developed and delivered the satellite-based toll collection solution and the on-board units (OBUs) which capture the data necessary for calculating the toll fee. Thanks to the use of satellite technology, the toll system in Slovakia enables easy acquisition of data not only on freeways and highways, but also on a large part of the road network. An order for a total volume of 81 million euros had been awarded to Siemens in January 2009. SkyToll's customer is Slovakia’s road transportation authority NDS (Národná diaľničná spoločnosť a.s.).

In the case of satellite-based tolling systems – in contrast to conventional microwave systems – the position of the vehicles is directly detected via the on-board units by way of GPS satellite signals, encrypted and transferred by GSM mobile telephony to the control center for further processing. Thus, this technology is particularly suitable for extensive road networks beyond the scope of the freeways. Toll gantries are not required for data capture.

“Holistic traffic management is becoming more and more important around the world for economic and ecological reasons. In Slovakia, we are installing the most modern technology ever used for the purpose of wide-area toll collection. The satellite-based system will enable the operator SkyToll to also cope with rising traffic volumes in future and with further expansion of the road network in the years to come without having to make additional investments in technology infrastructure such as toll gantries,” said Dr. Jörg Schneppendahl, head of the Complete Transportation Business Unit at Siemens Mobility.

From January 2010 on, the tolling system in Slovakia will cover a total of 2400 kilometers of roads. At present, all motor vehicles with the total weight exceeding 3.5 tons are subject to the electronic
toll. Siemens had already delivered more than 80,000 OBUs for the system in Slovakia prior to the toll system launch. Before this, extensive tests were conducted locally on a route totaling over 300,000 kilometers. Additional supplies will follow the market requirements. Up to now, a vignette system has been in use on the freeways in Slovakia.

With the approach used in Slovakia, all toll road sections are mapped in the OBU and are recognized. The satellite-based toll detection software solution supplied by Siemens is distributed between the OBUs and the IT backend. It not only controls the secure communication but is also responsible for important operational processes, such as the software updates on the OBUs via GSM. The data denoting each individual vehicle’s position and the number of kilometers driven on toll sections are transferred to the toll detection solution in the IT backend in encrypted form, where they are available for calculation. Encryption prevents misuse of data and the information transferred is also provided with an electronic signature, thus ensuring unique assignment to each toll user. The Slovakian satellite OBUs are technologically prepared to work in other European toll systems, including the microwave variants.

The satellite-based OBUs are protected against unauthorized manipulation and, if required, can be enhanced with further telematics applications, such as recognition of hazardous materials or animal transportation. It is also possible to determine whether prohibited zones in a city center, for example, have been entered without authorization. Easy installation is another advantage of the satellite-based OBUs. They can be connected easily to the cigarette lighter in a vehicle. Permanent installation by service personnel is also possible. No further connections, to the speedometer, for example, are necessary.

You will find this press release on the Internet at:
www.siemens.com/mobility/press/pressreleases

You will find photos for this press release at:
http://www.siemens.com/mobility-pictures/tolling_slovakia
Siemens Mobility developed and delivered the on-board units (OBUs) and the electronic toll collection solution which captures the data necessary for calculating the toll fee. The photo shows the OBU, which is simply activated at the push of a button.

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The Siemens Mobility Division (Erlangen) is the internationally leading provider of transportation and logistics solutions. With "Complete mobility", the Division is focused on networking the various modes of transportation in order to ensure the efficient and environmentally compatible transport of people and goods. "Complete mobility" targets the goal of sustainability and combines the company’s competence in operations control systems for railways and traffic control systems for roadways together with solutions for airport and postal logistics, railway electrification, rolling stock for mass transit, regional and mainline services, as well as turnkey systems and forward-looking service concepts. With around 25,000 employees worldwide Siemens Mobility posted sales of EUR6.4 billion in fiscal year 2009 (ended September 30). www.siemens.com/mobility