

Article: NXP Siemens cooperation aims at road toll systems – and more

Source:

<http://www.eetimes.eu/germany/207801220;jsessionid=4QLS0I5DVR20AQSNDLPCKHSCJUNN2JVN>

**NXP Siemens cooperation aims at road toll systems – and more**

Christoph Hammerschmidt

(05/20/2008 9:16 AM EDT)

URL: <http://www.eetimes.eu/germany/207801220>

NXP has signed an agreement with Siemens Mobility Systems to create an on-board telematics platform for vehicles. In the first place, the move aims at providing a piece of hardware for highway toll systems. But the platform's abilities go far beyond and make visible the shapes of things coming up to drivers.

MUNICH, Germany – NXP has signed an agreement with Siemens Mobility Systems to create an on-board telematics platform for vehicles. In the first place, the move aims at providing a piece of hardware for highway toll systems. But the platform's abilities go far beyond and make visible the shapes of things coming up to drivers.

Against the background of increasing traffic density on Europe's highways and tighter environmental regulations in particular for city traffic, in many countries legislators are mulling models to flexibly raise toll for truck traffic and for combustion-engine driven individual traffic in general. In cities such as London or Stockholm are already toll schemes in place but under technology perspectives they still are difficult to handle and not very effective.

In order to collect tolls and road fees in a more individual and differentiated way, the systems need to combine different data on the respective vehicle, with location, distance and time comprising the basic data set. The system also should be able to forward these data in real-time to the service provider, and it needs to be secured against tampering.

Translated onto the technology level, this requires navigation, mobile telecommunication and data security elements to act together in a coordinated manner. NXP has announced to combine these elements to a System-in-Package (SiP). In the NXP terminology, the device will be called Automotive Telematics On Board Unit Platform (ATOP); at the semiconductor level it will form the core element for comprehensive systems. NXP and Siemens Mobility Systems will use the SiP as a basis for a vehicle-installed platform (On-board unit, OBU), aiming at future road toll and eCall applications.

The SiP contains a GPS receiver providing the navigation data, GSM baseband and RF circuits for wireless communication and a crypto controller which emulates the subscriber identity module (SIM) required for GSM-based telecommunication. In addition, NXP will integrate and RFID circuit in the package which will communicate with an equally RFID-equipped non-removable windshield sticker which acts as authenticator by means of a unique identifier.

The system can be used in the context of existing road toll systems for trucks. Siemens, however, plans to offer it in the first place for private vehicles, be it as part of the car's equipment when built or for aftermarkets.

Presently in the prototype phase and undergoing the automotive qualification process in 2009, the platform will be available for broad use from 2010. It will come in due time for the plans of some governments to establish road toll systems that include passenger cars. For instance, the Dutch government has already announced to establish such a system in the 2012 to 2016 time

frame. The system provided by NXP/Siemens will – along with the necessary off-board data processing facilities – provide all the functionality of more complex road toll systems without the need to invest heavily into roadside infrastructure, explained Lars Reger, Senior Director Business Development and Strategy at NXP's Automotive and Identification business unit.

However, with the given set of abilities, the ATOP chip as well as the resulting unit could also form the hardware basis for a broad range of services and in-car telematics applications. One of them is automatic emergency calls in the case of an accident (eCall) which will be a required item in new cars from 2011 in the European Community. In order to enable eCall applications, the device monitors the airbag controller signals via a CAN bus interface.

Other applications could include a supporting function for navigation systems;– the GPS receiver integrated in the ATOP could provide the respective data to an in-car display. While presently no such plans are in place, Reger did not rule out that in later versions this could be an option. "A toll platform does not provide a complete set of navigational data," says Reger, "but OEMs presently discuss the range of options. Possibly, certain data could be passed on to the navigation system."

The combination of GPS, mobile radio and authentication opens the way to other application options: Stolen vehicle tracking, a feature that in Brazil will be compulsory for new vehicles from 2009 could be one of them. Or, just one more option, in connection with personal RFID identity cards, the system could form the basis for 'pay-as-you-drive' applications planned by Italian car insurers. "There are dozens of possibility – it only depends on the availability of services and the service provider's business model," said Reger.

Besides Siemens, other automotive tier ones such as Continental or Bosch have similar projects. "The market is huge," Reger said. It becomes obvious that in future cars such platforms will be part of the basic functionality – and, as information services increasingly will become available, the platforms will gradually be established as the car's central computer.

Source:

<http://www.eetimes.eu/germany/207801220;jsessionid=4QLS0I5DVR20AQSNLPCKHSCJUNN2JVN>