

Automotive Telematics Services based on Cell Broadcast

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Title

Automotive Telematics Services based on Cell Broadcast

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Sammanfattning

Abstract

Cell Broadcast is a relatively old technique within the GSM-network which makes it possible to broadcast text messages to one or more cells in the network. As efforts in Sweden have been made to develop both traffic safety and information technology, the automotive telematics market is predicted to grow rapidly in the near future. The characteristics of Cell Broadcast make it especially suitable for automotive telematics services. The main purpose of this thesis is to investigate possible automotive telematics services based on Cell Broadcast and how these services can affect traffic safety.

The most important characteristics for Cell Broadcast in the automotive telematics market are close connection to the GSM/UMTS network, location-based information and information of push character. These characteristics allows the mobile operator to offer a number of automotive telematics services based on Cell Broadcast, some of them as service provider and some of them in joint ventures with car and mobile terminal manufacturers.

Nyckelord

Keyword

Automotive telematics, road telematics, in-vehicle telematics, traffic information, Cell Broadcast, GSM, UMTS, road informatics, traffic safety

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David Gundlegård

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Summary

Cell Broadcast is a relatively old technique within the GSM-network which makes it possible to broadcast text messages to one or more cells in the network. The technique is unused in Sweden today but lately the development of Cell Broadcast services has increased, mainly in central Europe. The main arguments against Cell Broadcast have been:

- No possibility to charge the end customer
- Lack of standardisation
- Energy consuming for the mobile terminal

Better standardisation, possibilities to charge the end customer and battery improvements in the mobile terminals have changed the conditions for the Cell Broadcast market. The breakthrough of SMS might also have affected the possible user-group of Cell Broadcast.

As efforts in Sweden have been made to develop both traffic safety and information technology, the automotive telematics market is predicted to grow rapidly in the near future. The characteristics of Cell Broadcast make it especially suitable for automotive telematics services. The main purpose of this thesis is to investigate possible automotive telematics services based on Cell Broadcast and how these services can affect traffic safety. The most important characteristics for Cell Broadcast in the automotive telematics market are:

- Close connection to the GSM/UMTS-network
- Location-based information
- Information of push-character

The close connection to the GSM/UMTS-network is important since most telematics services are in need of information from the vehicles to be developed. In order to make the users willing to pay for automotive telematics services the available traffic information has to be improved, which probably demands an uplink from the vehicles via GSM/UMTS. When the traffic information is improved (i.e. extended) the importance of location-based information increases and the small broadcasting area of a Cell Broadcast message becomes essential. Traffic information is the type of information that the user wants only when a deviation has occurred. The fact that the driver has difficulties in predicting when a deviation has occurred makes the push-character of the information important.

The operator will have a central role in the automotive telematics market since it controls an important uplink from the vehicle, road traffic data within the GSM-network and a suitable distribution media in Cell Broadcast. A number of automotive telematics services based on Cell Broadcast can be offered. Some of the services can be offered by the operator alone and some demand joint ventures with car and mobile terminal manufacturers.

Possible effects on the driver when an incident warning system based on Cell Broadcast is implemented are reduction in speed, higher attention and reduced workload. This might lead to accidents being prevented, such as congestion and rear end collisions, accidents involving animals and other local hazards.

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