
Automotive GPS Applications: Enhancing Safety, Security and Peace of Mind

**Next Generation GPS Public Media Forum
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Automotive GPS Applications

- **Current Applications**
 - **Navigation**
 - **Telematics**
- **Future Applications**
 - **Vehicle to Vehicle Safety**

Automotive GPS Applications

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 - **Navigation**
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Telematics Background -Technology

Combines and integrates directly into the vehicle's electrical architecture

- Cellular technology**
- GPS positioning capability**
- Sophisticated voice recognition technology**

Telematics Background - Services

Call center-based services

- Safety, security and peace of mind
- Routing and point of interest

Optional one button hands-free cellular calling

Telematics Availability – 5 Million Vehicles

OnStar - 4.0 million

- **General Motors**
 - 50 of 54 models
 - Standard in 2008
- **Acura**
- **Lexus**
 - Lexus Link

- First year included in the price of the vehicle
- Spanish and French also available
- Selected TTY services launched in 2005



Telematics Availability – 5 Million Vehicles

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ATX – 700,000

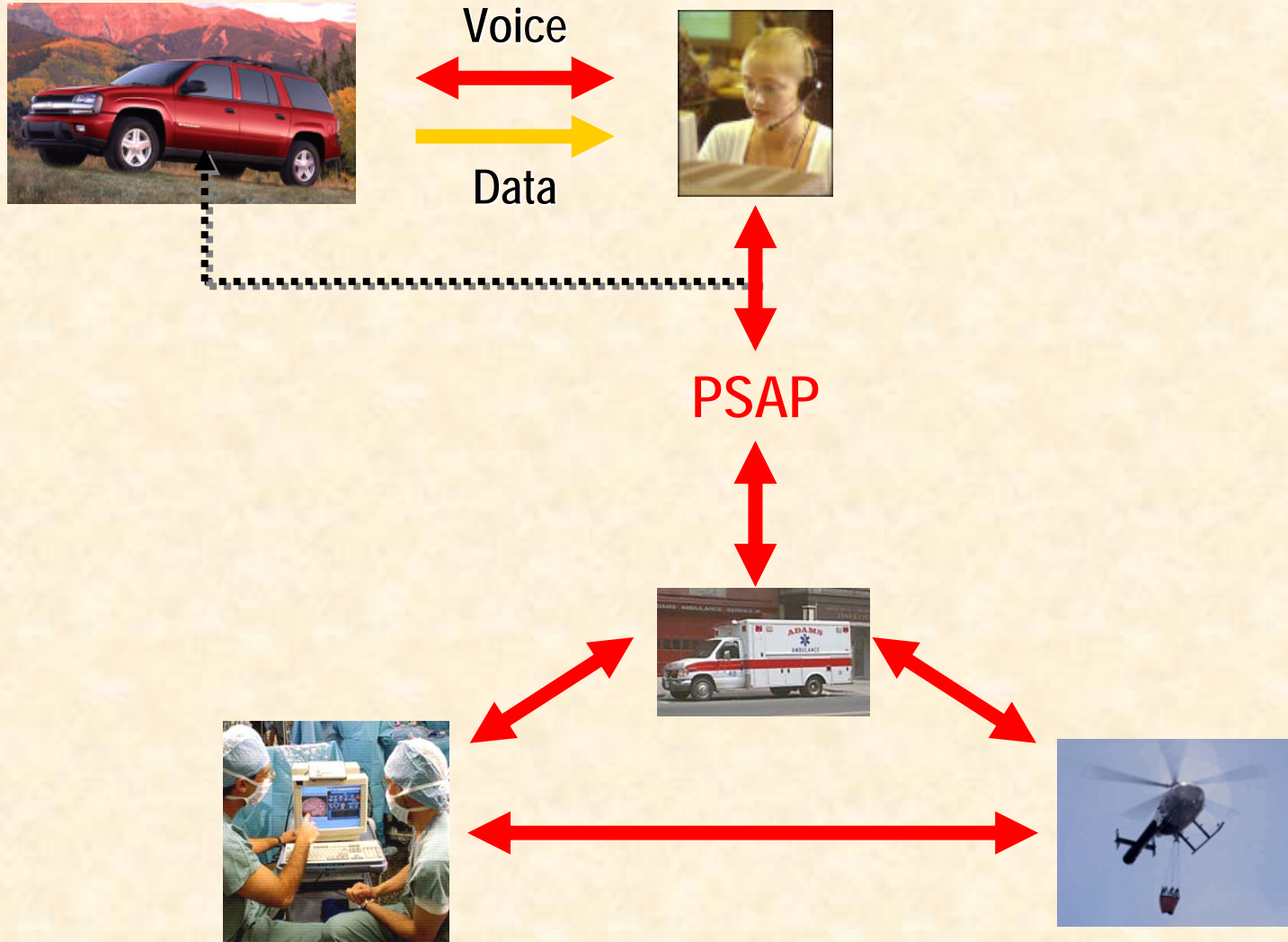
- Mercedes - Teleaid
- BMW - Assist



GPS-Based Services - Core

- **Automatic crash/airbag deployment notification**
- **Emergency services**

Crash Notification Today



GPS-Based Services - Core

- Automatic crash/airbag deployment notification
- Emergency services
- **Roadside assistance**
- **Stolen vehicle location**
- **Remote door unlocks**

GPS-Based Services-Premium

- Automatic crash/airbag deployment notification
- Emergency services
- Roadside assistance
- Stolen vehicle location
- Remote door unlocks
- **Routing and point of interest**
- **Weather**
- **Real time traffic**

Making a Distinctive Difference

Monthly, telematics forward to PSAPs approximately:

- **2,000 automatic airbag/crash notifications; and**
- **15,000 emergency calls.**

As well as

- **27,000 requests for roadside assistance;**
- **46,000 door unlocks;**
- **600 stolen vehicle location requests;**
- **Over 350,000 requests for routing;**

And among non-GPS based services

- **30,000 remote diagnostics.**

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Vehicle to Vehicle(V2V) Safety Use Cases

- **V2V Localized Broadcast Warnings**
 - **Crash notification to other vehicles**
 - **Electronic emergency brake**
 - **Slow/disabled vehicle ahead**
 - **Road condition notification**
- **Map assisted**
 - **Curve speed warning**
- **Cooperative Applications**
 - **Blind spot detection (Passive)**
 - **Collision avoidance and mitigation (Active)**

Challenges and Promises

- **Current Challenges**
 - **Availability and performance degradation in urban canyons and other challenging environments**
- **Future Promises**
 - **Improved reliability, accuracy, availability**
 - **Lane level V2V safety applications**
- **Critical Transition Imperatives**
 - **Maintaining existing performance for the installed legacy fleet**
 - **Achieving cost levels required for price sensitive consumer applications**