

Intelligent Vehicles: Now and the Future

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ITS America Overview

- ◆ Non-Profit trade association partnered with the U.S. DOT and industry
- ◆ Members include automotive manufacturers, tier one suppliers, telecom providers, infrastructure industry and other trade associations
- ◆ Automotive issues include safety, privacy, relations with other industries and government (local and federal)

Shift from Fun To Safety

- ◆ Last 5 years have seen shift from convenience and fun applications to safety-based systems
- ◆ Ford's Wingcast, folded
- ◆ OnStar's Batman, gone
- ◆ Vehicle to vehicle and vehicle to infrastructure under exploration

Safety Systems Focus of the Immediate Future

| Million \$ | 2002 | 2007 (Projected) | CAAGR |
|--------------------|----------------|---------------------|--------------|
| Powertrain | 42,753 | 51,877 | 3.9% |
| Chassis | 12,934 | 19,439 | 8.5% |
| Safety | 13,170 | 23,343 | 12.1% |
| Security | 2,613 | 3,260 | 4.5% |
| Body | 23,288 | 31,795 | 6.4% |
| Driver Information | 11,631 | 17,506 | 8.5% |
| Total | 106,387 | 147,219 | 6.7% |

Source:
Strategy
Analytics

Today's Light Vehicle Safety Systems

- ◆ GM/OnStar
 - Recently announced vehicle to vehicle safety systems
- ◆ Nissan
 - Adaptive cruise control; lane departure warning
- ◆ DaimlerChrysler
 - PRE-SAFE, electronic stability control
- ◆ Volkswagen
 - LDW
- ◆ BMW
 - Intelligent airbags, active steering

Today's Convenience

- ◆ XM and NAVTEQ – real-time traffic and weather
- ◆ Motorola – LBS, mapping; MeshNetworks
- ◆ OnStar – remote diagnostics; location based services
- ◆ Fleet management

Future Intelligent Vehicle Applications

- ◆ Real time traveler information from vehicle probes
- ◆ Active vehicle collision avoidance systems
- ◆ Intersection collision avoidance
- ◆ Emergency vehicle warnings
- ◆ Medical detection – Nissan

Commercial Vehicle Advancements

CVISN

(Commercial Vehicle Information Systems and Network)

- Weigh in motion
- Safety information exchange
- Roadside electronic screening
- Interstate credentials administration

On-Board Commercial Vehicle Advancements (1 of 2)

Reducing Truck Rollovers

- Roll stability advisors – education
- Roll stability control – automatic intervention
- Electronic stability control – automatic intervention for travel path

On-Board Commercial Vehicle Advancements (2 of 2)

Reducing Rear-End Collisions

- Forward collision warning systems
- Adaptive cruise control

Reducing Lane Departure Crashes Lane Departure Warning Systems