Active Safety and Automated Driving

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THE OPPORTUNITY

Crashes / Human Errors

Aging / Disabled

Congestion / Time
DRIVING AUTOMATED
(IN NON-AUTOMATED VEHICLES!)
EARLY GM AUTOMATED VEHICLES
NOVEMBER 3, 2007:
“BOSS” WINS DARPA URBAN CHALLENGE
TODAY’S TECHNOLOGIES
CADILLAC DRIVER ASSIST

ATS
XTS
SRX
CTS
NEXT STEP: SUPERCRUISE
ROAD TO AUTOMATED DRIVING

- **Today’s Driver Assist Package**
- **“SuperCruise” Concept**
- **Emergency Intervention (Limited Control)**
- **Driver Info & Alerts (No Control)**
- **Limited On-Demand Automation (Monitored Control)**
- **Complex On-Demand Automation (Transferred Control)**
- **Autonomous Driving (Chauffeured Driving)**

Increasing Capability
INTEGRATED SYSTEMS APPROACH

360° Sensing

Sensor Fusion

Maps / GPS

V2V / V2I Integration
V2X DEMONSTRATIONS

- Embedded V2V and V2I
- Standalone V2X
- Retrofit V2X
- Transponder (V2Pedestrian and V2Cyclist)
V2V Implementation & Deployment Considerations

- Tech Readiness
- OEM / Feature Approach
- Penetration Rate
V2V Implementation & Deployment Considerations

- Penetration Rate
  - Business Considerations
  - Aftermarket / Retrofit
  - Regulation / Gov’t Incentive

![Graph showing penetration rate over time with Success and Failed Models.](image)
ROAD TO AUTOMATED DRIVING

TECHNOLOGY ENABLERS:
- Perception & Algorithms
- Integrated Sensing with Maps, GPS, V2X
- Driver State Knowledge

Driver Info & Alerts
- (No Control)

Emergency Intervention
- (Limited Control)

“SuperCruise” Concept
- Today’s Driver Assist Package

Limited On-Demand Automation
- (Monitored Control)

Complex On-Demand Automation
- (Transferred Control)

Autonomous Driving
- (Chauffeured Driving)
THANK YOU