V2X Next Steps

• GM Involvement in V2X (Intro)
  - Early Development of V2X
  - US Consortium and Standards Activities and Projects
  - EU Consortium Activities and Projects

• Challenges to V2X Deployment (Proposed Questions)
GM Early Development of V2X

- GM has been an active leader in the development of V2X technology since 2002
- Developed and publicly demonstrated V2V system capability and features since 2005
- Performed internal driver clinics for Willingness-to-Pay and understanding system acceptance in 2006

2005: ITS World Congress in San Francisco, and
2005-2006: In several cities across the USA Fleet of communicating vehicles
  • 360 degree collision warning system
  • Development platform for DSRC-based active safety features

2006: In eight European countries
  • Fleet of communicating vehicles
  • Demonstration platform for DSRC-based active safety features
  • Public demonstrations in 8 European countries
US Activities
Current Engagement- Crash Avoidance Metrics Partnership (CAMP)
Vehicle Safety Communications 3 (VSC3) Consortium Projects

Supporting Projects:

- V2V Safety System - Model Deployment, Aug’11 – Jul’14
- V2V Interoperability (V2V-I): Jan’10 - Sep’14,
- Vehicle Safety Communications Security, Dec’12 – Jul’14

V2X Policy (Veh Infrastructure Integ. Consortium (VIIC))

- Establish governance and policy reqs

In support of Standards

- Core member of Auto Alliance Technical team preparing technical input and submission towards FCC NPRM on DSRC and WiFi Spectrum sharing (2013+)
EU Activities – Current Engagement

**Car 2 Car Communications Consortium (C2C-CC)**

- C2C-CC is a large non-profit industrial consortium consisting of most automotive OEMs, suppliers and other associate members

**simTD Project - Field Trial**

- Fleet of 120 communicating vehicles and 115 Roadside Units
- Completed the largest field trial in Germany (simTD) – ended Dec 2012.
- simTD had concluded and established Day 1 V2X deployment readiness in EU

**Drive C2X Project: On-going**

- FOT in 7 countries
V2X Next Steps

1. What are the key challenges for V2X deployment?
   - Global Harmonization
   - Vehicle integration
   - Supplier readiness
   - Evolving Requirements
     • System Certification & Scalability
     • Security and Privacy management
   - Governance Structure & Policy
   - Accelerate Options for Market Penetration of V2X

2. Why is global harmonization important?
3. What are the vehicle integration considerations?
4. What is the status of supplier readiness?
5. What is the impact of evolving requirements?