



IntelliDriveSM

The Federal Perspective

Shelley Row

Director, ITS Joint Program Office

Research and Innovative Technology Administration

U.S. Department of Transportation

ITS America 2009 Annual Meeting

Session ES05 “IntelliDriveSM – The Partners Look at What’s Next”

Tuesday, June 2, 2009, 12:30 pm – 2:00 pm



VII Program



Legacy Projects

CICAS V2I Safety

VII

- System Architecture
- Proof of Concept
- Testing
- Mobility & Convenience

VSCA V2V Safety



- IntelliDriveSM is a suite of **technologies** and **applications** that use **wireless communications** to provide . . .

CONNECTIVITY

- With and between **vehicles**;
- Between vehicles and **roadway infrastructure**;
- Among **vehicles, infrastructure** and **wireless consumer devices**.

- Adopted by **Coalition Executive Leadership Team** May 2009.
- **Foundation** for development of IntelliDrive.
- Address **3 major areas**
 - **Overarching Principles**
 - **Safety**
 - **Mobility, Environment, Productivity & Convenience**

IntelliDriveSM Principles — *Overarching Principles*

1. The IntelliDrive initiative envisions the deployment of an *information-rich surface transportation system* that:
 - a. enhances *safety, mobility, and convenience* and greatly reduces or eliminates vehicles crashes;
 - b. Changes the way transportation is managed, operated and utilized;
 - c. fosters and supports *livable communities* and environmental *stewardship*.
2. The IntelliDrive program is ultimately focused on *deployment*.

3. IntelliDriveSM program activities are focused on *technical* and *institutional* research and planning leading to such deployment.
4. IntelliDrive research is important for advancing goals of the *public* and *private* sectors.
5. IntelliDrive research will be conducted in a *collaborative environment* with primary leadership provided by USDOT, AASHTO with local agency partners, and the automobile manufacturers.

6. IntelliDriveSM research will address the needs of *passenger, commercial, transit, and public fleet* operators and users.
7. The following safety and security requirements apply to the system and all applications:
 - a. Must not compromise *safety*.
 - b. Must not compromise *security*.
 - c. Must protect *privacy*.

8. One goal is to enable *active safety applications*, defined as cooperative and communications-based applications designed to assist vehicle operators in avoiding imminent crashes. The following characteristics apply to active safety research and deployment:
 - a. It will focus on *5.9GHz Dedicated Short Range Communications (DSRC)* to enable necessary communications characteristics, including low latency, fast connection speeds, security and privacy.

- b. It includes both *vehicle-to-vehicle* and *vehicle-to-infrastructure* systems.
- c. Technical consensus *standards* will be developed and harmonized internationally.
- d. The feasibility of OEM approved *retrofit* strategies will be studied as part of the deployment solution.
- e. The program will allow for differences in *execution* with in the vehicle environment.

IntelliDriveSM Principles — *Mobility, Environment, Productivity and Convenience*

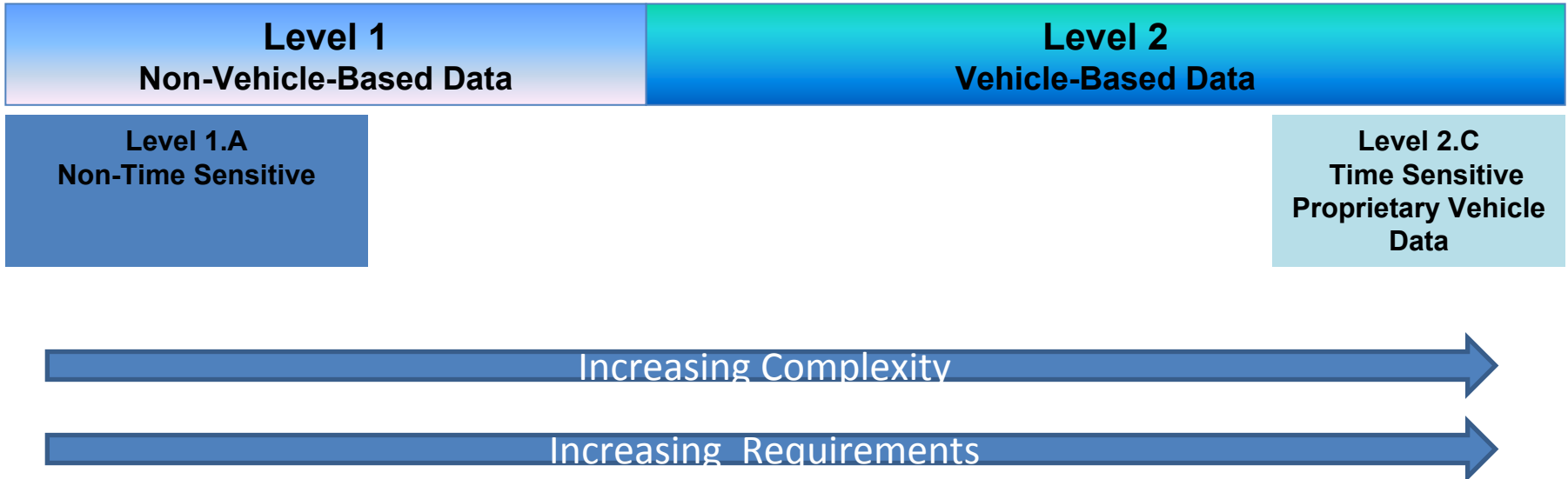
9. Another goal is to enable *mobility, environmental, productivity* and *convenience* applications. The following characteristics apply:

- a. The feasibility of also using *commercially available communications networks* and *devices not integrated with vehicle systems* will be considered.
- b. Consensus-based open *standards* will be established that enable access to a core set of non-sensitive data as agreed upon by the data source.
- c. Mobility applications will require an understanding of an partnership with *other industries*, such as telecommunications and aftermarket provides.

- Groups
 - Applications (current and potential); and
 - Technical Requirements.
- Shows how stakeholder interests relate to the various applications and technical requirements.
- Facilitates organization of research.

Level 1
Non-Vehicle-Based Data

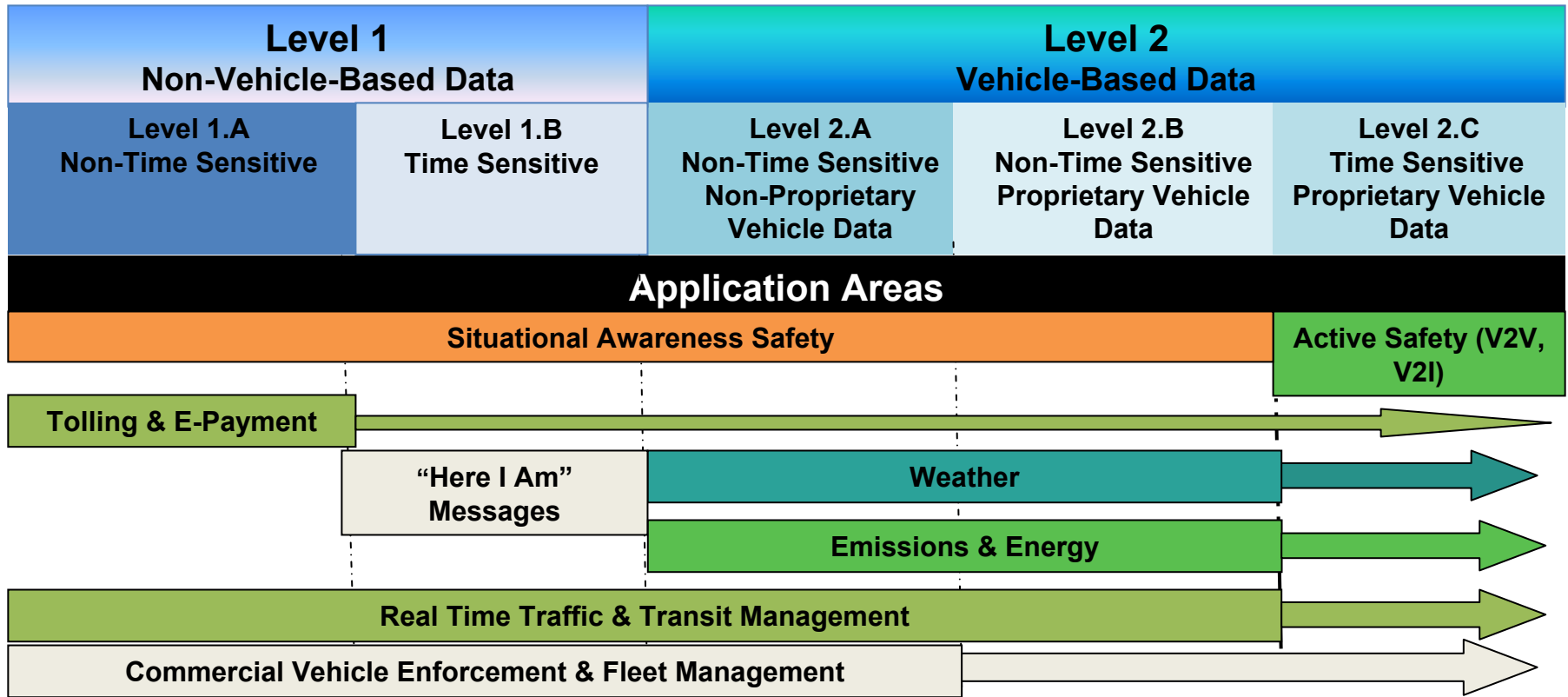
Level 2
Vehicle-Based Data



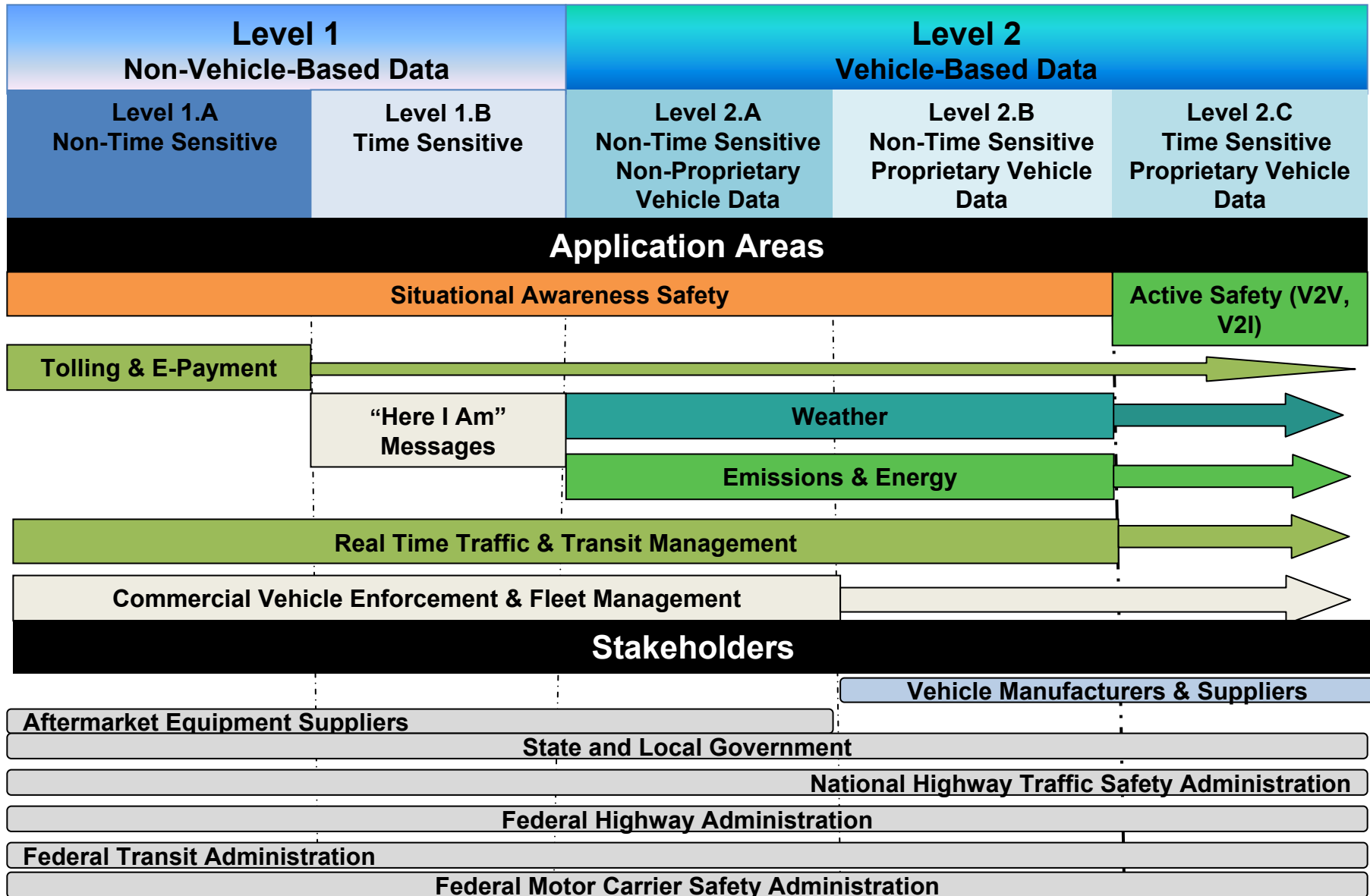
Level 1 Non-Vehicle-Based Data		Level 2 Vehicle-Based Data		
Level 1.A Non-Time Sensitive	Level 1.B Time Sensitive	Level 2.A Non-Time Sensitive Non-Proprietary Vehicle Data	Level 2.B Non-Time Sensitive Proprietary Vehicle Data	Level 2.C Time Sensitive Proprietary Vehicle Data

- Two dimensions
 - Time sensitive or not
 - Proprietary or non-proprietary vehicle data

IntelliDriveSM Taxonomy



IntelliDriveSM Taxonomy



IntelliDriveSM Future Vision

- **Safety**
Complete (360°) situational awareness.
- **Mobility**
Complete multimodal information about real-time transportation network performance for travelers and transportation system managers.
- **Environmental Stewardship**
Real-time information to support decision-making to reduce the environmental impacts of any trip.

USDOT's role is to foster public and private sector advancements in transportation system connectivity by

- Engaging **stakeholders**.
- Advancing **research and testing**.
- Developing the **policy and institutional foundations** required for adoption.
- Facilitating the development of **standards and regulations** that may be needed.