Day 2

Session: International Cooperation

International Cooperation Creating Synergy in Research on Connected and Automated Driving

Steven SHLADOVER

Program Manager, Mobility

University of California PATH Program

steve@path.berkeley.edu

Benefits of International Cooperation

- **Division of labor in tackling large technical challenges**
- **Reducing duplications of effort**
- **Learning from diverse other approaches (alternate solutions to problems)**
- **Economies of scale in developing solutions for a global rather than a regional market**
- **Facilitating progress toward global standards**

CALIFORNIA PATH

Priority Targets for Research Cooperation

- **Fundamental scientific research to enable future technological advances**
  - **Software safety design methodology**
  - **Efficient verification and validation methods**
- **Field testing methods (design of experiments and data collection and analysis)**
- **Impact assessment methods**
- **Safety assurance methods, especially for non-deterministic systems**
- **Human ability to interact with automated driving systems (inside and outside vehicles)**
- **Protection from cyber-threats**

CALIFORNIA PATH

Topics Less Suited for Cooperation

- **Design and development of in-vehicle technologies and driver interfaces (competitive)**
- **Infrastructure cooperation with CAVs (too much variability across countries)**
- **Impact assessment case studies**
- **Public education and outreach**
- **Government regulatory constraints**

CALIFORNIA PATH

International Standards

- **Significant contrasts in national approaches:**
  - **Prescriptive vs. descriptive**
  - **Voluntary vs. mandatory**
- **Timing is sensitive:**
  - **Early enough to avoid impediments from multiple entrenched approaches**
  - **Late enough to benefit from real-world practical experience**
- **Must be justified based on real benefits:**
  - **Safety**
  - **Economic efficiency (economies of scale)**
  - **User comprehension**

CALIFORNIA PATH