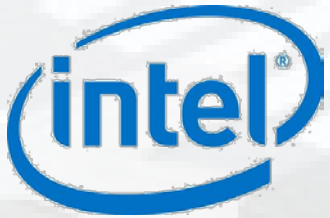
Consensus Safety Measurement Methodologies for ADS-Equipped Vehicles

June 25-26, 2019

U.S. Department of Transportation



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Innovation through Collaboration: Bringing Automated Mobility Technology to Arizona

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Early Attempts and Recent Progress

- **2012** – HB 2679 fails to move forward, following year HB 2167, again fails to get traction
- **2015**—Governor Ducey signs EO on AZ's process to safely test automated and connected vehicle technologies
- **2017**—HB 2159 passes, allowing **truck platooning demonstrations** on AZ highways.
- **2018**—Governor Ducey issues an EO reflecting advancements in testing and technology
- **2018**—HB 2422 passes allowing for "**personal delivery devices**" to operate in AZ
- **2018**—Governor Ducey establishes **Institute for Automated Mobility** to advance safety, science and policy
- **2019**—HB 2132 passes allowing for the operation of "**personal mobile cargo carrying devices**"

Where we are Now and Lessons Learned

- **Testing everything** from small delivery vehicle to commercial motor vehicles
- Arizona **municipalities are actively involved** in the safe development of these innovations.
- There is **alignment** of the mission **with state and local governments** to continue evolving our regulations

- We are constantly **learning and evolving**
- We had to be willing to **challenge the status quo**
- **Utilized the authorities** we already had
- **Collaboration** is critical

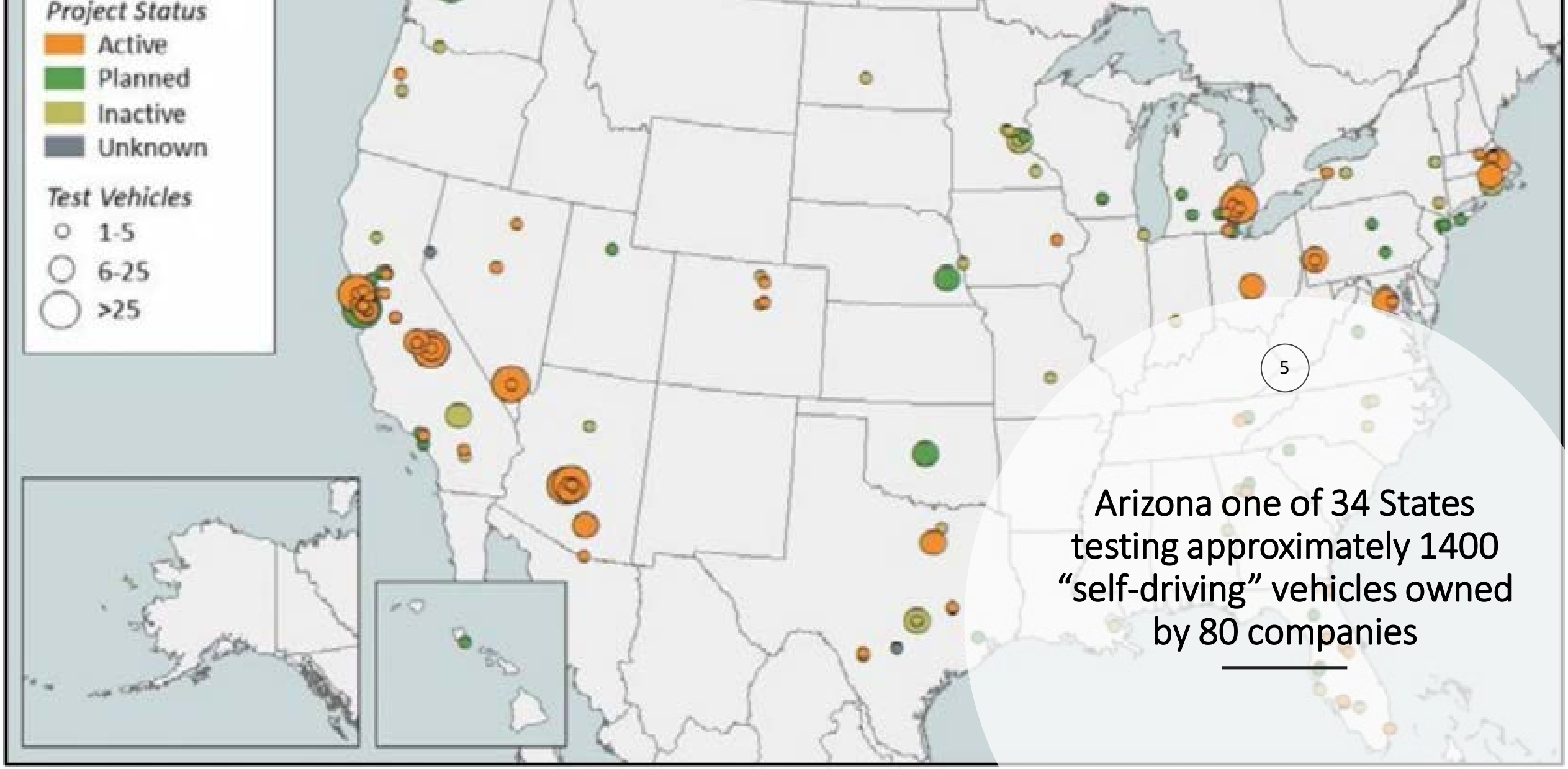
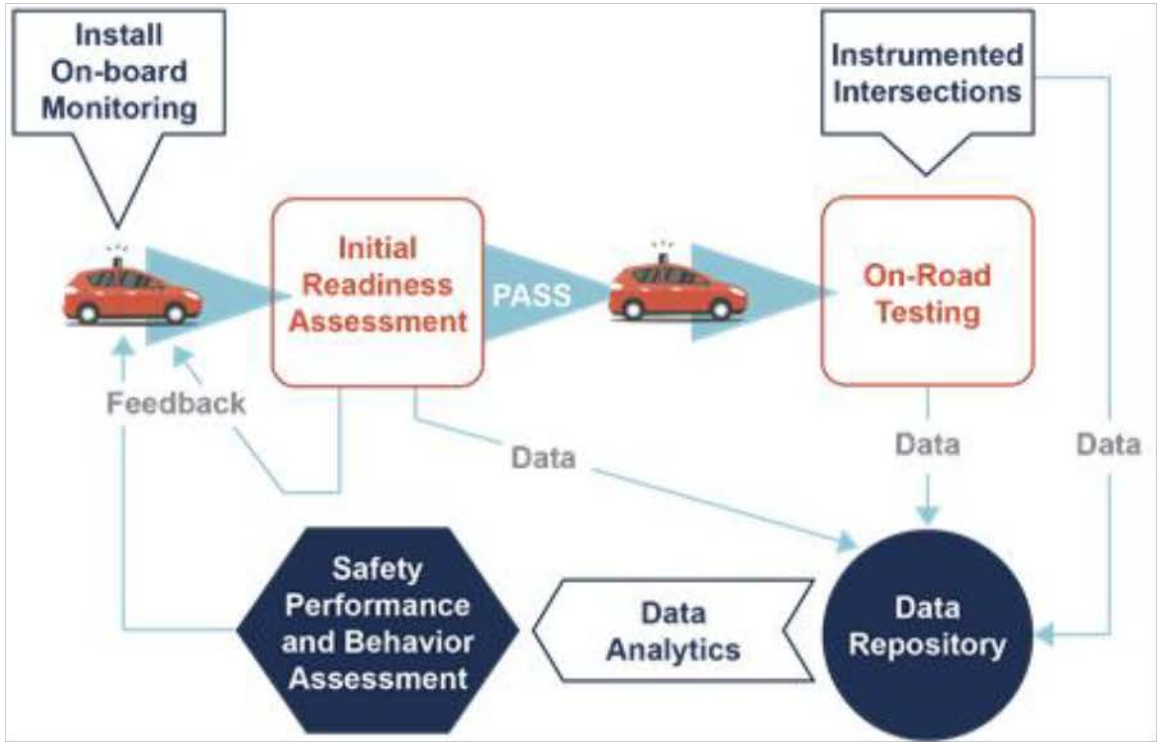


Figure 1: *Map of U.S. Automated Vehicle Test Sites*

Source: *NHTSA/Volpe Center – March 2019*

Safety Assurance Methodology (SAM)



- **Scenario Safety Performance Assessment (SSPA) Tool -** Scenario and data collection to output a safety performance grade
- **Initial Readiness Assessment (IRA) Tool -** ADS test environment and procedure to assess the preparedness of an ADS for on-road testing.
- **Continuous Safety Monitoring (CSM) Tool -** Data collection suite to monitor safety performance to generate required feedback during extended ADS road testing
- ***Our SAM*** *provides regulators with validated methods to conduct due diligence monitoring of ADS prior and during road testing, and will facilitate public confidence.*

Each candidate ADS is subjected to the Safety Assurance Methodology (SAM), consisting of data from the SSPA, IRA, and CSM tools as inputs. The data collected during ADS testing are processed to calculate a safety performance and behavior assessment which is fed back to the developer.

THANK YOU