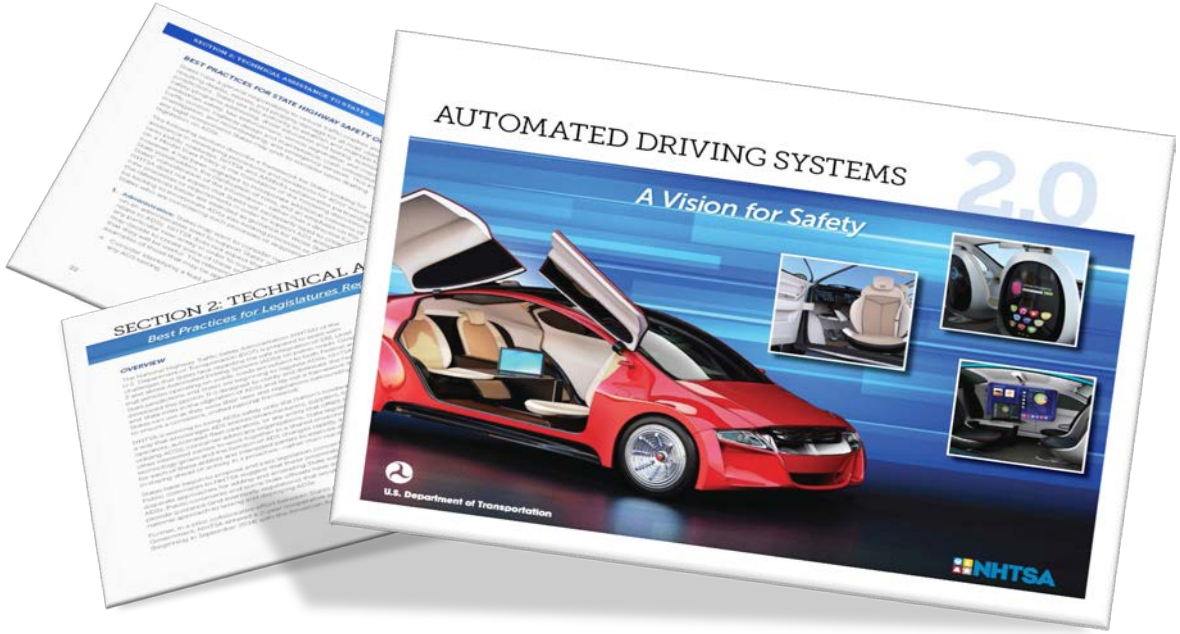
Ariel Gold

ITS Joint Program Office
U.S. DOT

Data Exchange to Accelerate Safe Rollout of Automated Vehicles

October 31, 2017

ADS 2.0: A Vision for Safety



The Department's new, non-regulatory approach to promote the safe testing and development of automated vehicles

Source: USDOT NHTSA *Automated Driving Systems 2.0: A Vision For Safety*

About the ITS JPO Data Program

The ITS JPO Data Program is a multimodal effort to enhance how data is managed and used throughout the transportation ecosystem to support the next generation of ITS technologies.

We aim to establish a foundation for agility, data sharing, and privacy protection in the future transportation system – including connected and automated vehicles and smart communities – to maximize the societal benefits of these technologies.

Problem Solving Approach

- Bring a system-wide/multimodal perspective to data availability and use
- Default to agile and open (data, code, docs) and other digital best practices[1]
- Pilot new approaches with the coalition of the willing to solve real problems
- Where successful, **add new tools to our collective toolbox**

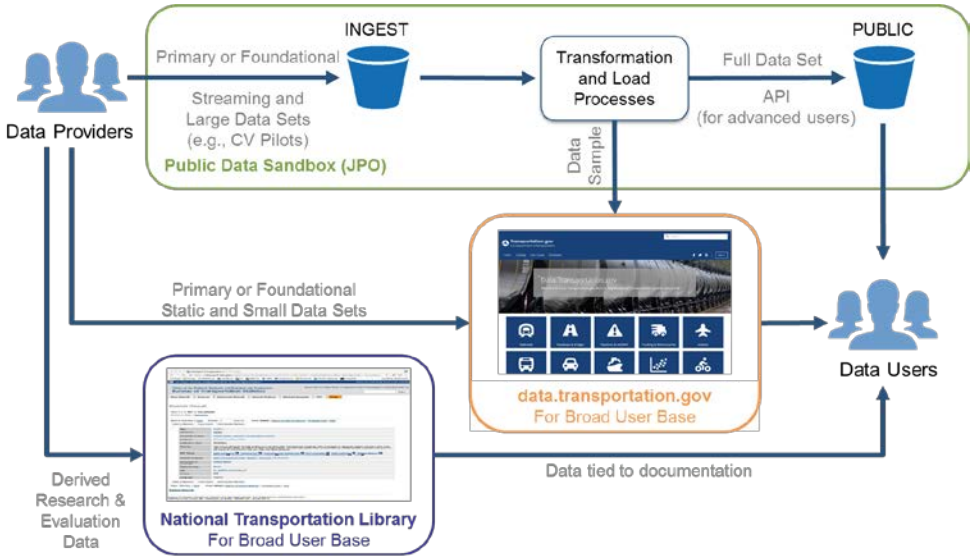
[1]US Digital Service playbook available at: https://playbook.cio.gov/
Example of project developed in the open: https://github.com/usdot-jpo-ode/

LET’S ADD TO OUR COLLECTIVE TOOLBOX:

Operationalizing and Scaling Research Data Access

ITS Research Data Access and Retention Program

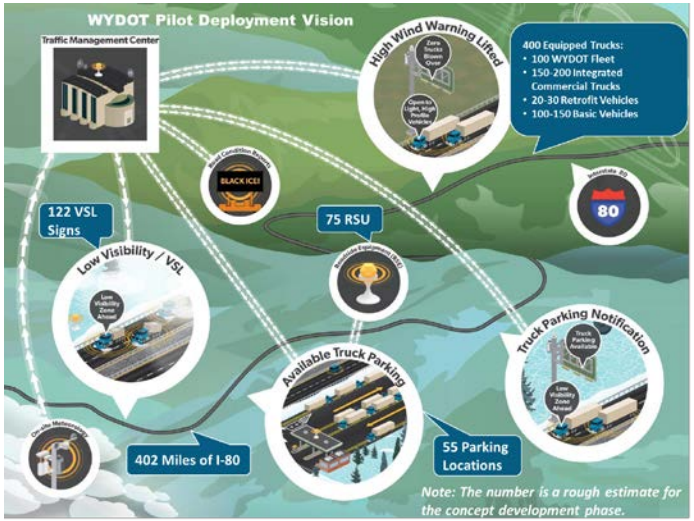
- No-wrong-door to discovery
- Near-real-time delivery
- Clear retention policies
- Federated architecture
- Robust governance and technical assistance program
- Starting with public data



ITS research data hub: https: /www.its.dot.gov/data/

Coming Soon: Streaming Data from Wyoming Connected Vehicle Pilot

- View and download data streams from early deployers like the CV Pilots
  - Full data set: https://github.com/usdot-its-jpo-data-portal/sandbox
  - Sample: https://data.transportation.gov/
- Starting with filtered Basic Safety Messages (BSM) and Traveler Information Messages (TIM) from Wyoming



LET’S ADD TO OUR COLLECTIVE TOOLBOX:

Data Sharing Partnerships and Collaborating around Sensitive Data

Challenge

Private sector companies and public-funded research produce sensitive data that must be protected and, yet, can also be used to improve public services. Current approaches to securing or de-identifying such data severely limit access or destroy valuable information.

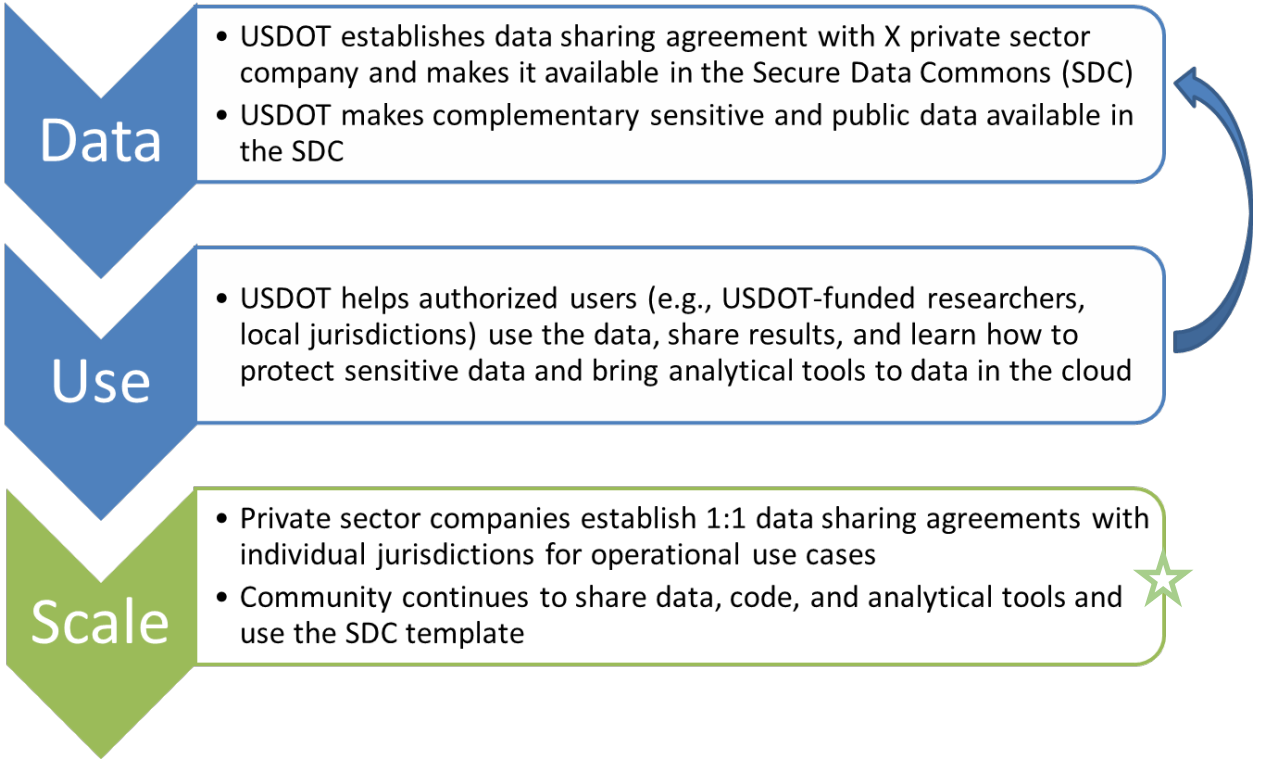
Public sector agencies that obtain new data sources struggle to use it in a meaningful way. They question whether it is worth going through the effort of entering a data sharing partnership, or collecting and retaining a potentially sensitive data set.

Introducing: The Secure Data Commons

The “Secure Data Commons” (proof-of-concept) will make it easier for the USDOT and the broader transportation sector to share and collaborate around sensitive data sets using modern, commercially available tools.

We are using best practices from health data sharing to broker authorized access to sensitive data, including from the private sector and public-funded field tests, in a collaborative environment. We aim to build trust with data providers and users, and build capacity for data managers within and outside the USDOT.

Could This Be a Repeatable Model?



When a technical and institutional pattern is established, and costs are predictable and low, enabling collaboration around sensitive data becomes a common practice.

LET’S ADD TO OUR COLLECTIVE TOOLBOX:

Collaborative Software Development and Operational Data Management Tools

Embracing Open Source to Solve Data Challenges

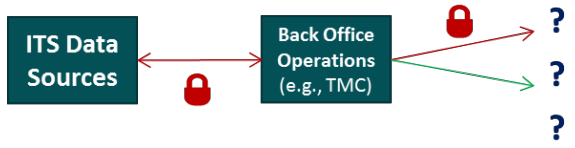
Challenge: Public-funded code is often delivered at the end of projects, then not maintained and enhanced by the user community. This leads to duplicative development costs within and outside USDOT, limits software and data interoperability, and slows technology adoption.

Approach: Develop software collaboratively and in the open. Enable users to find, use, and contribute to consistently documented, modular, standards-based tools. Help deployers iteratively address common data management challenges such as real-time routing, sanitization, validation, and analysis.

Enabling Operational Data Exchange and Privacy

Most Transportation Projects:

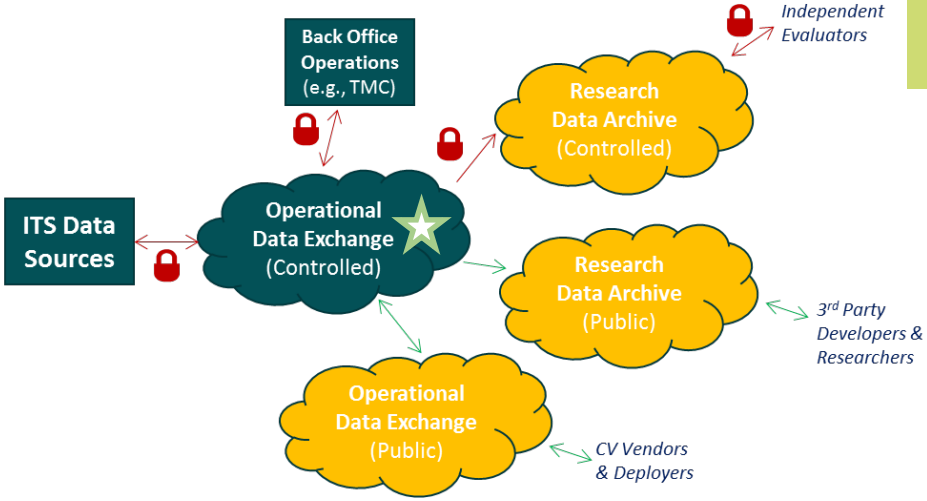
Limited data fluidity and flexibility block innovation



We are developing this software collaboratively and in the open: https://github.com/usdot-jpo-ode/

Wyoming Connected Vehicle Pilot:

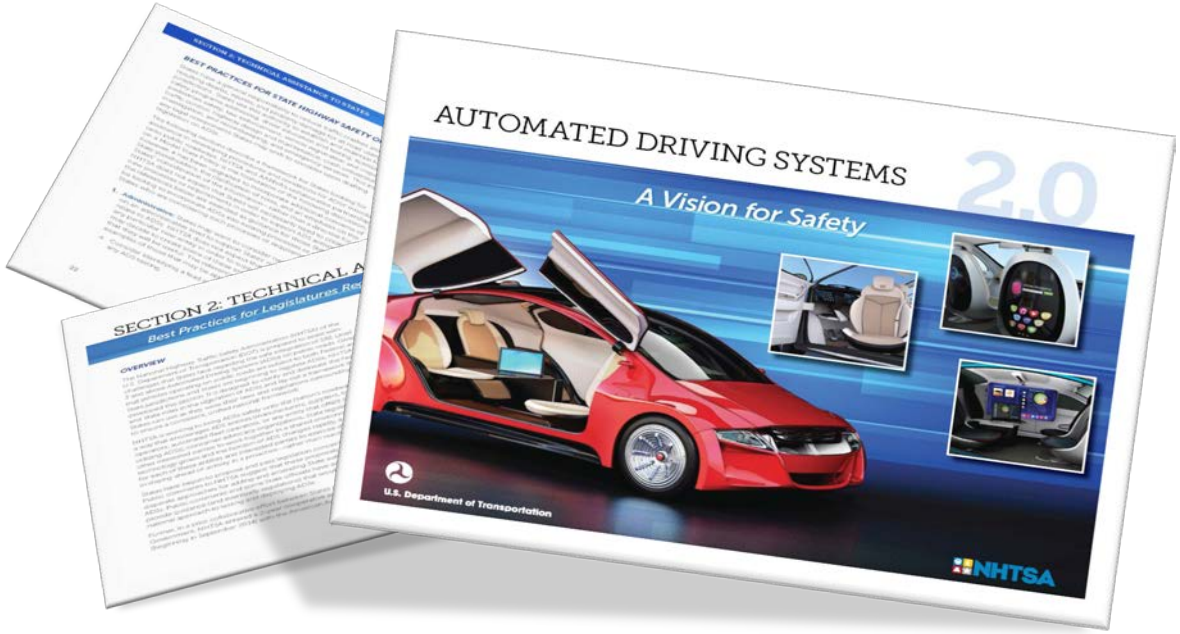
Programmatic privacy protection and data fluidity enable rapid innovation, now and in the future



UP NEXT:

Using our Toolbox to Accelerate Safe Rollout of Automated Vehicles

ADS 2.0: A Vision for Safety



The Department's new, non-regulatory approach to promote the safe testing and development of automated vehicles

Source: USDOT NHTSA *Automated Driving Systems 2.0: A Vision For Safety*

THANK YOU!

For more information, visit **its.dot.gov**