



U.S. Department of Transportation

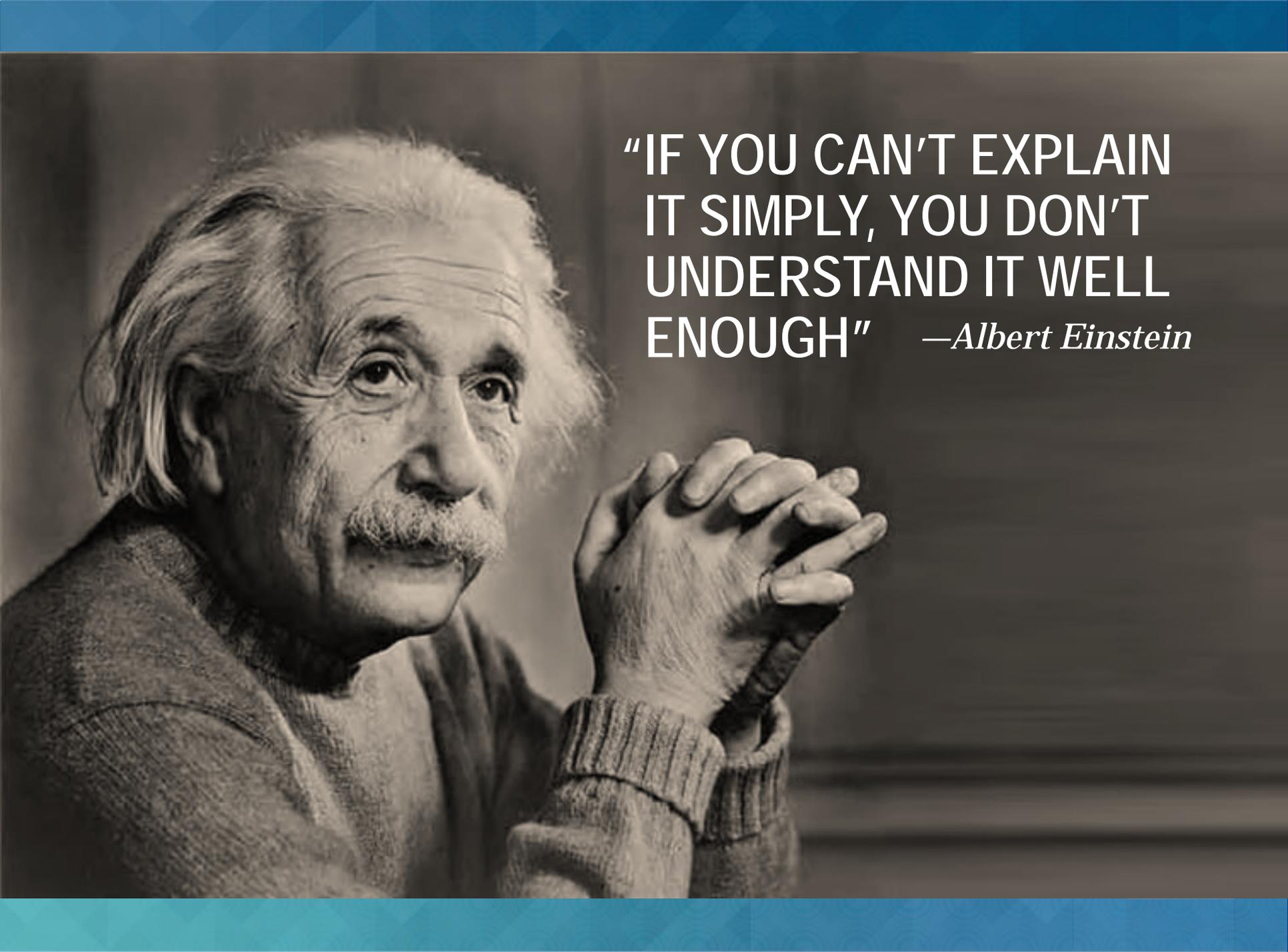
# HOW TO COMMUNICATE COMPLEX IDEAS TO THE GENERAL PUBLIC

*Mike Pina*

*U.S. Department of Transportation*

JUNE 2017





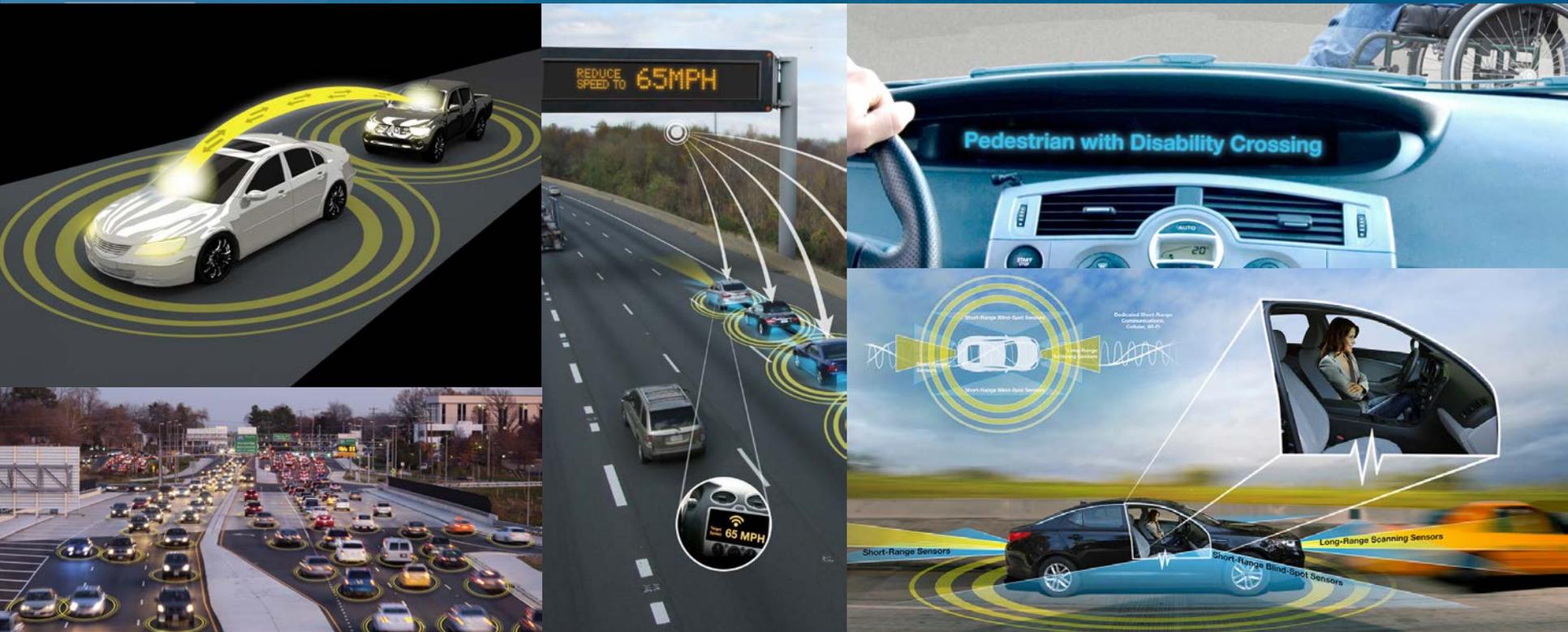
**"IF YOU CAN'T EXPLAIN  
IT SIMPLY, YOU DON'T  
UNDERSTAND IT WELL  
ENOUGH"** —*Albert Einstein*



# WHY DOES THIS SUBJECT MATTER TO GOVERNMENT COMMUNICATORS?

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- Improve the public debate about your program
- Engage key stakeholders
- Increase awareness among your colleagues
- Educate the media
- Make your website more useful
- Improve your presentations



BEFORE WE GET STARTED, A LITTLE ABOUT

# RESEARCH AT THE U.S. DEPARTMENT OF TRANSPORTATION



# TRANSPORTATION IN THE U.S. IS MORE COMPLEX THAN YOU KNOW

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- Connected vehicles
- Automated vehicles
- Vehicle-to-vehicle (V2V), vehicle-to-infrastructure (V2I), and vehicle-to-pedestrian (V2P) communications
- Smart cities
- Big data
- Mobility on demand
- Pedestrian safety
- Accessible transportation
- Emerging technologies
- Road weather safety
- Much, much more

# ITS JPO FUNDS AND COORDINATES THE USDOT'S RESEARCH

## Intelligent Transportation Systems Joint Program Office



Automation

Grants to Architecture

Information Technology

Smart Infrastructure

SCMS: Security Credential Management System

Training

Big Data

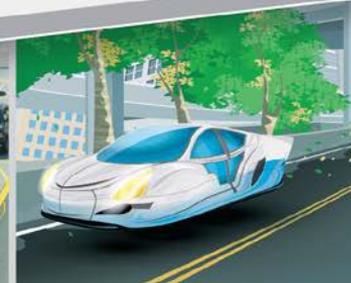
Evaluation

Spectrum

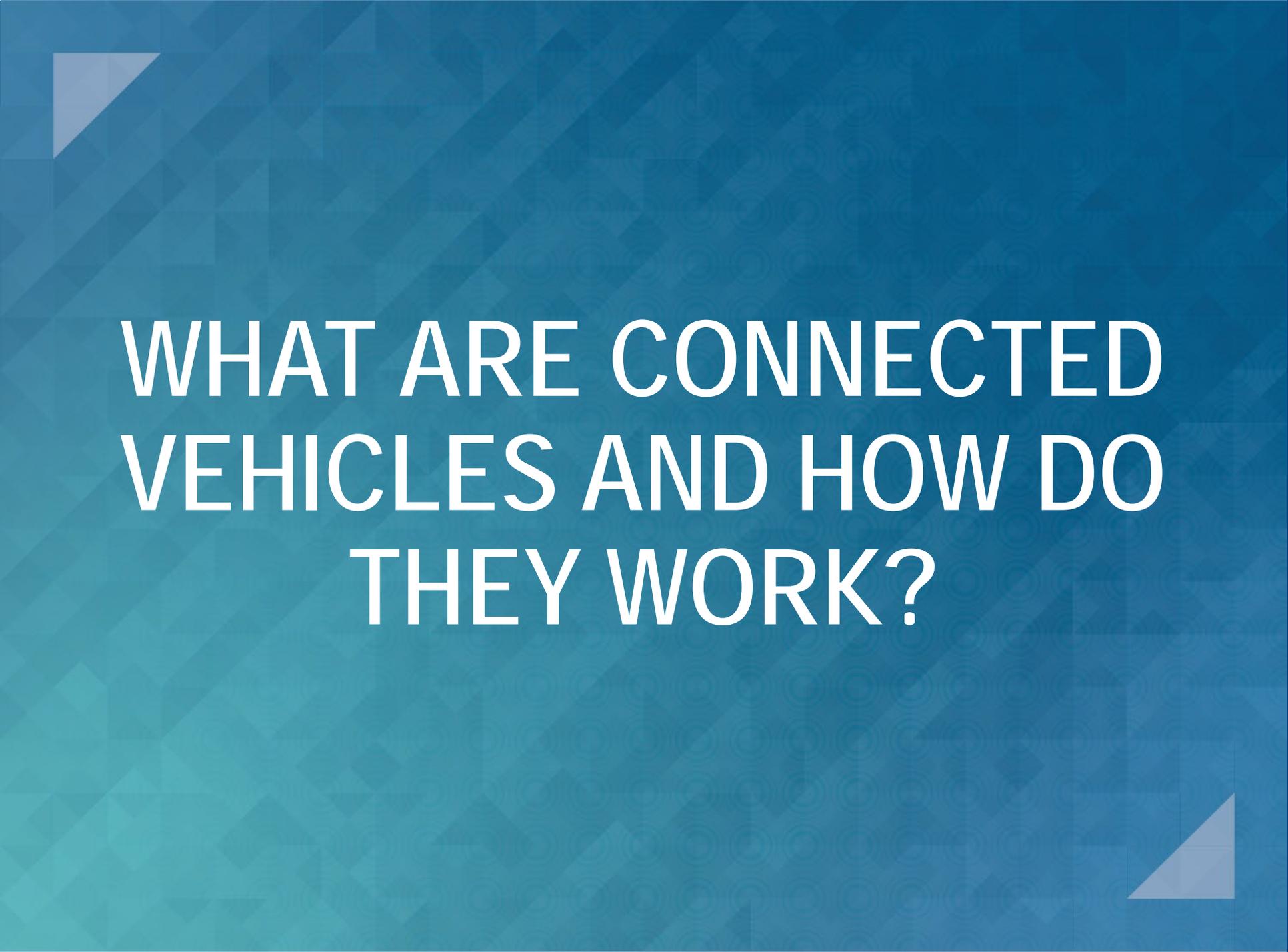
Certification

Knowledge Transfer

Research Grants



Intelligent Transportation Systems

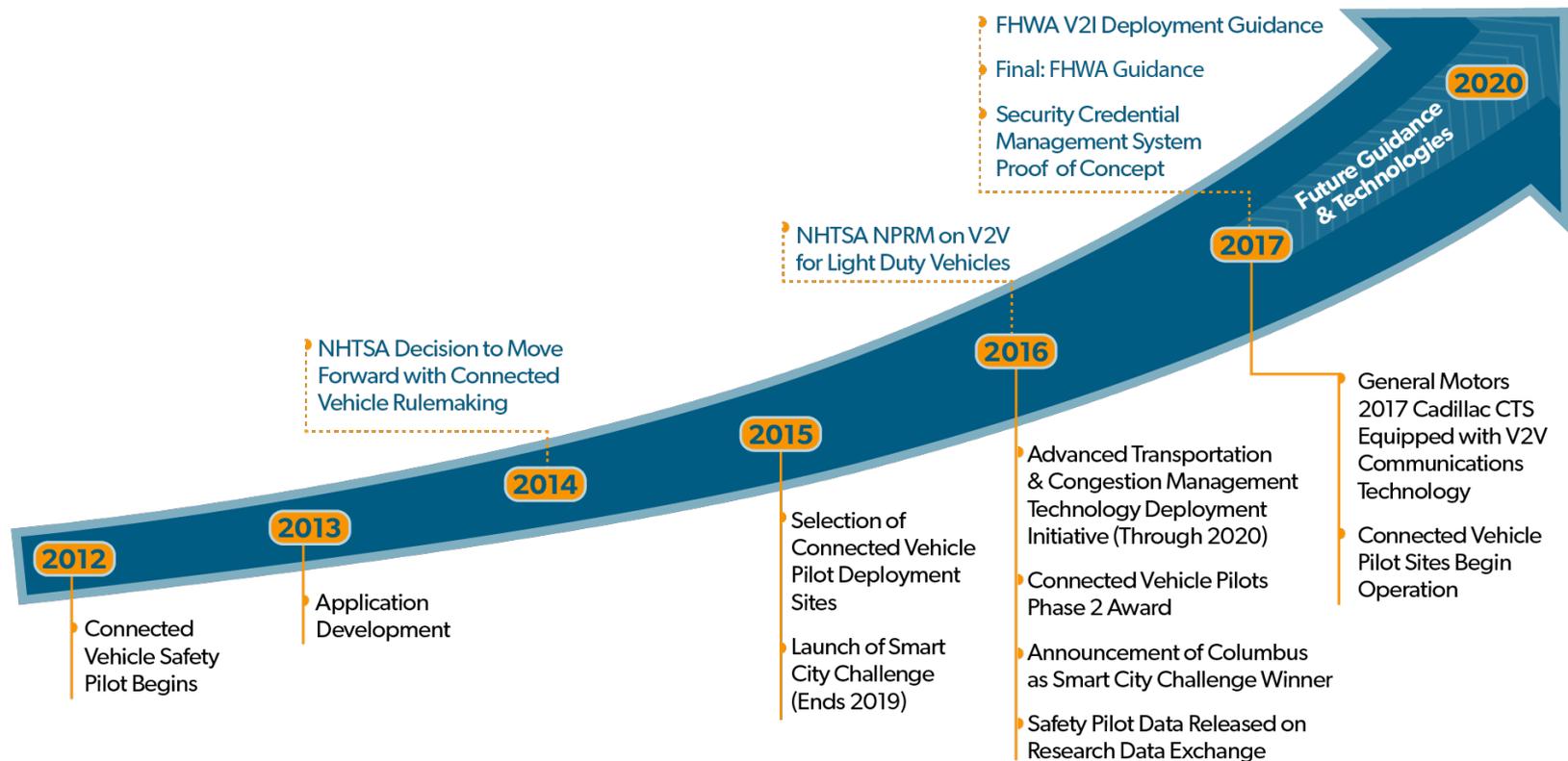


# WHAT ARE CONNECTED VEHICLES AND HOW DO THEY WORK?

IMAGINE A TRANSPORTATION SYSTEM IN WHICH  
**VEHICLES CAN SENSE &  
COMMUNICATE**  
THINGS THAT YOU CAN'T.



# CONNECTED VEHICLES ARE COMING AND THE PUBLIC DOES NOT UNDERSTAND THEM



# CONNECTED VEHICLES ARE ON OUR STREETS TODAY

V2V SAFETY TECHNOLOGY IS NOW STANDARD IN CADILLAC CTS SEDANS



# THOUSANDS OF NEW CONNECTED VEHICLES WILL HIT THE STREETS NEXT YEAR





# 'TALKING' CARS? THEY NEED TO HAPPEN, FEDS SAY



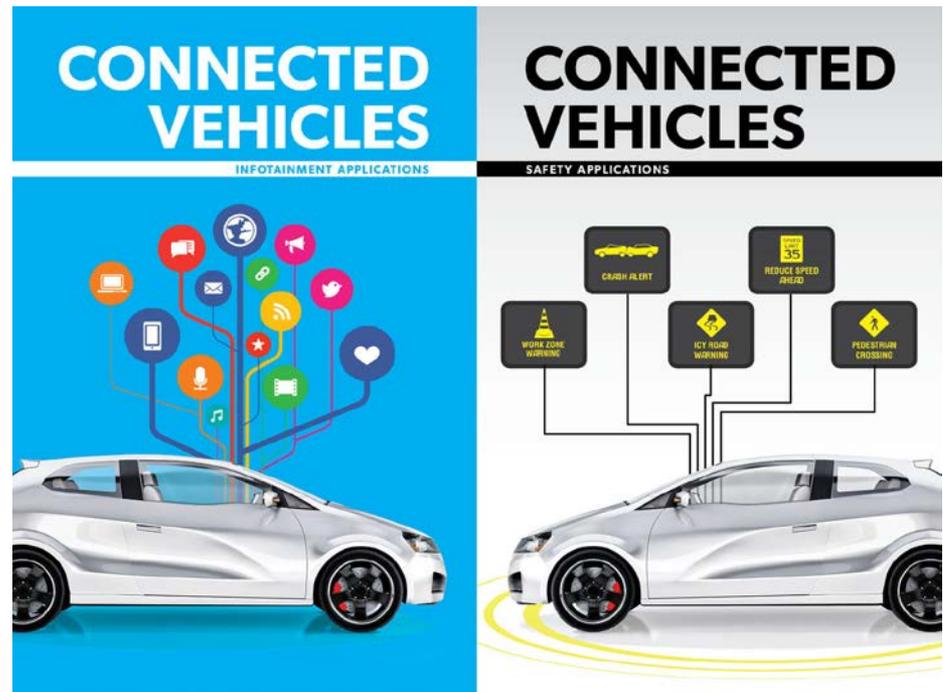


# CONNECTED VEHICLE TECHNOLOGY IS FAR MORE COMPLEX THAN JUST “TALKING CARS”

- Standards and architecture
- One language among all cars
- Applications
- Real-world testing
- Big data
- V2V, V2I, V2P, vehicle-to-everything (V2X)
- Secure communication between vehicles
- Policy
- Cyber security
- International harmonization
- 5.9GHz spectrum

# OUR KEY COMMUNICATIONS CHALLENGES

- Connected vehicles are in very limited use today.
- Many don't understand the safety, mobility, and environmental benefits of connected vehicles.
- Certain industries will be directly impacted by the technology, but they are not aware of it.
- Some mistakenly believe that connected vehicle technology is similar to the technology in cars today.



# SOME OF OUR KEY MESSAGES

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- Connected vehicles are coming.
- Connected vehicles can significantly reduce most unimpaired car crashes, mitigate traffic congestion, and curb pollution.
- Connected vehicles are being tested in real-world environments today.
- Connected vehicles will protect your privacy.
- The automated vehicles of the future will be based on connected vehicle technology.
- Communities should begin preparing for connected vehicles today.

# 7 RULES FOR COMMUNICATING COMPLEX IDEAS TO THE GENERAL PUBLIC

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1. Know your audience and identify what you want to accomplish
2. Find ways to make it matter to them
3. Explain concepts using information they already understand
4. Whenever possible, use an image
5. Tell stories and use analogies
6. Avoid jargon
7. Anticipate problem areas where people will question or challenge what you are communicating



# 1. KNOW YOUR AUDIENCE

IDENTIFY WHAT YOU WANT TO ACCOMPLISH



## KNOW YOUR AUDIENCE

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- Why is this audience interested in your research and/or program
- How will your program benefit them
- How much knowledge do they have about your program
- How can you tailor your message to this audience

# SOME OF OUR TARGET AUDIENCES

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<b>STAKEHOLDER</b>	<b>USDOT'S INTEREST</b>
<b>Traffic Engineers</b>	Deploy V2I technology
<b>Technology/Data Firms</b>	Develop new applications
<b>City Planners</b>	Include connected vehicles in the planning process
<b>Car Rental/Leasing/Taxi Firms</b>	Prepare for new cars with connected vehicle technology
<b>Aftermarket Firms</b>	Develop devices for older cars

# TARGET YOUR MESSAGE TO YOUR AUDIENCE



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# IMAGINE...

...how much easier life could be

- ▶ **Searching for Parking?** You don't have to waste time driving around looking for a space. Your car can tell you exactly where to find the nearest one.
- ▶ **Biking to School?** Use your smartphone to find the roads with the least amount of traffic and ease your nerves while biking on the streets.
- ▶ **Riding the Bus?** A digital sign can tell you how long your wait will be until your next bus connection.
- ▶ **Driving to the Mall?** Your car can tell you how bad traffic is before you even leave the house.
- ▶ **Taking a Cab?** Use your smartphone to find out if an empty cab is heading in your direction and when it will be there.
- ▶ **Having Car Issues?** If your car breaks down, it will automatically send a signal to 911 so they can send someone to help.

See Connected Vehicle Videos at [www.its.dot.gov/library/video.htm](http://www.its.dot.gov/library/video.htm)

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## Learn about Connected Vehicle Applications!

**Learn About Connected Vehicles**

**Visit the USDOT Booth**

**The Road Ahead**

- See things you need to know about Connected Vehicles
- Cool things you can do with a Connected Vehicle
- How you can become part of the Connected Vehicle Universe

**The Future of Transportation**

- What You Will Find at the U.S. Department of Transportation Booth at SXSW
- What you'll find at the booth
- Who will be there
- Get a head start and visit the [ITS\\_2016\\_website](http://ITS_2016_website)

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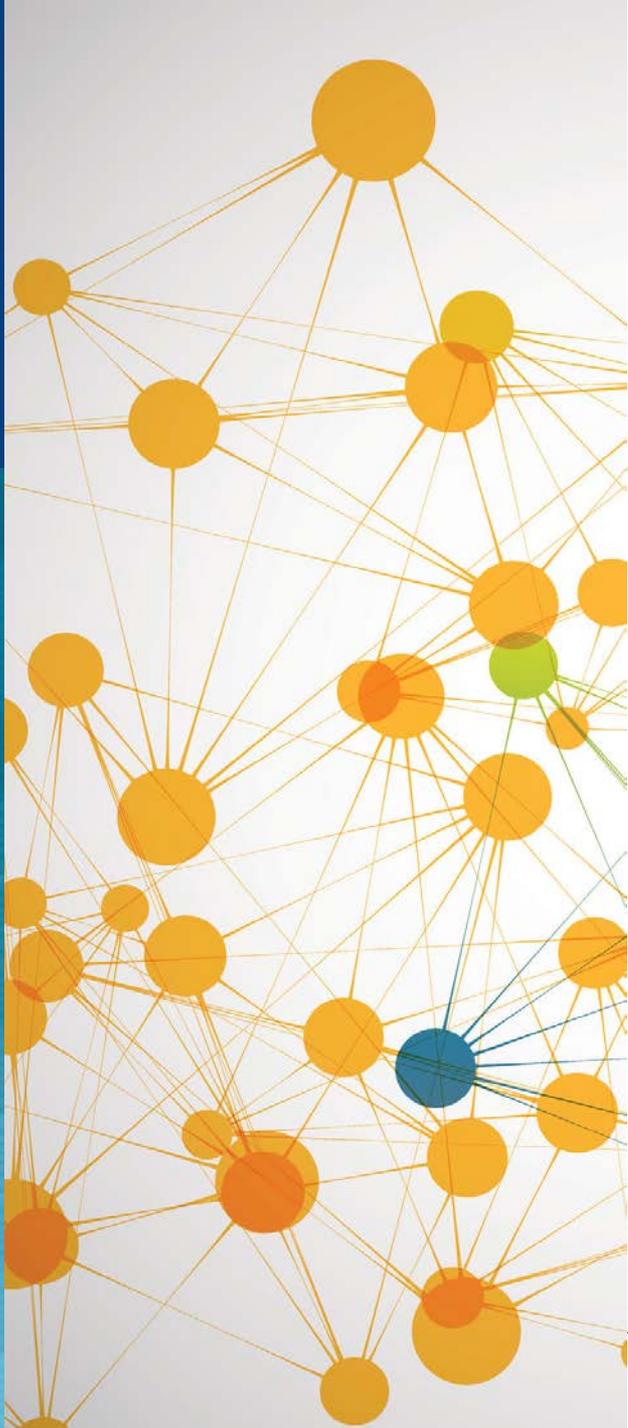
**Contact**  
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Connectivity  
202-366-0792

**Contact with Us**  
Public or all Number



## 2. WHY IT MATTERS

FIND WAYS TO MAKE IT MATTER TO YOUR AUDIENCE



## HOW TO CONNECT WITH YOUR AUDIENCE

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- Research the organization beforehand
- Identify the nexus between your research and the audience's interest
- Find ways to personalize how your program will benefit the audience
- Understand their problems

# CONNECTED VEHICLE BASICS MICROSITE

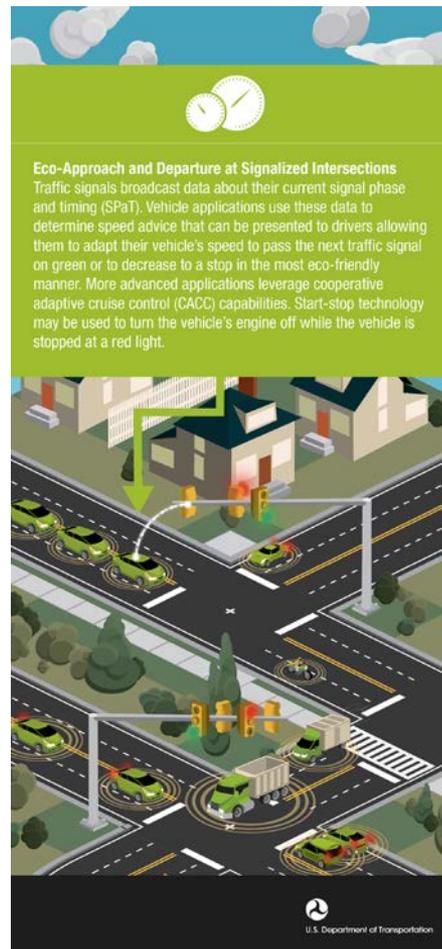




# 3. EXPLAIN CONCEPTS

USE INFORMATION THAT THE AUDIENCE ALREADY UNDERSTANDS

# EXPLAIN CONCEPTS WITH INFOGRAPHICS



# INSIDE A CONNECTED VEHICLE

**INSIDE A CONNECTED VEHICLE**

**1.** An under-the-hood box (a processor with memory) collects and transmits data between the vehicle's onboard equipment (OBE) and between OBE on near-by connected vehicles and safety devices along the roadside.

**2.** A display panel, sitting in the vehicle's center console opposite the driver's dashboard, displays audio or visual safety warnings to the driver.

**3.** A radio and antenna, using dedicated short-range communications (DSRC) and a GPS receiver, receive and transmit data about the vehicle's position to other vehicles and to safety devices along the roadway.

**4.** Sensors collect additional information that improves the accuracy of the data being collected and transmitted by the vehicle.



# 4. USE IMAGES

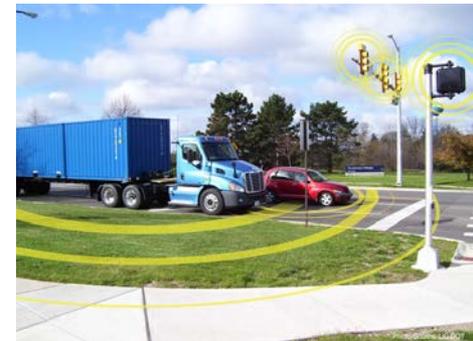
WHENEVER POSSIBLE

# CONNECTED VEHICLE ANIMATION: MOBILITY

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# CONNECT VEHICLE IMAGES





# 5. STORY TELLING

TELL STORIES AND USE ANALOGIES

# CONNECT VEHICLE STORYBOARD



Image Source: Thinkstock/USDOT

This is Lauren.  
She has an important meeting at work today.

U.S. Department of Transportation  
Office of the Assistant Secretary for Research and Technology



Image Source: Thinkstock/USDOT

Lauren is heading to work on a code red air quality day. She looks at her tablet and chooses the least polluting travel route which has the fewest number of stops and starts. Unlike today's applications, Lauren is able to get multimodal travel data at one time.

U.S. Department of Transportation  
Office of the Assistant Secretary for Research and Technology



Image Source: Thinkstock/USDOT

Because of increasing pollution levels along Lauren's route, she is asked to adjust her speed to avoid a potential traffic jam. Lauren's car will give off fewer emissions.

U.S. Department of Transportation  
Office of the Assistant Secretary for Research and Technology



Image Source: Thinkstock/USDOT

The message telling Lauren to adjust her speed is coming from a special Eco-Traffic Signal that helps optimize vehicle speeds so that they produce fewer emissions.

U.S. Department of Transportation  
Office of the Assistant Secretary for Research and Technology

ITSA  
SCMS RSU V2V  
V2I<sup>RDE</sup> AASHTO

## 6. AVOID JARGON

ASSUME YOUR AUDIENCE DOESN'T KNOW THE "LATEST TERMS"



# 7. QUESTIONS?

ANTICIPATE AREAS THAT THE AUDIENCE  
MIGHT QUESTION OR CHALLENGE



## COMMON QUESTIONS ABOUT CONNECTED VEHICLE

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- How long will it take before I see these cars in my dealership?
- How much will this technology increase the cost of a new car?
- How is my privacy protected?
- Will the system be secure?
- What are the challenges to deploying this technology?
- How is this different from the technology that is in cars today?
- How do connected vehicles relate to automated vehicles?
- What are the safety benefits of connected vehicles?
- Will connected vehicle technology work on public transportation?
- What is the USDOT's role in the development of the technology?
- Will my community have to make any changes to accommodate these new vehicles?
- What are the next steps?

# \*BONUS TIP\*

## KNOW WHAT TO LEAVE OUT

- If a talking point will generate questions you can't answer, don't use it.
- If it is not clear whether your administration is on board with a talking point, don't use it.
- If the talking point is so controversial people won't pay attention to the rest of your message, don't use it.

# WAYS USDOT CAN SIMPLIFY COMPLEX TERMS

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JARGON	DESCRIPTION
<b>Dedicated Short-Range Communications (DSRC)</b>	Wi-Fi for cars
<b>Interoperability</b>	All cars speak one language
<b>Pilot</b>	Real-world testing with everyday drivers
<b>Security Credential Management System (SCMS)</b>	Secure communications between vehicles
<b>Connected Vehicle Reference Implementation Architecture (CVRIA)</b>	Everything that connects to a connected vehicle environment needs to have the same standards
<b>Research Data Exchange</b>	Web site where application developers can get access to free open source data

ONE FINAL THOUGHT...



**“ IT'S MUCH EASIER TO BE CONVINCING IF YOU CARE ABOUT YOUR TOPIC. FIGURE OUT WHAT'S IMPORTANT TO YOU ABOUT YOUR MESSAGE AND SPEAK FROM THE HEART.”**

*—Nicholas Boothman*

# FOR MORE INFORMATION

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