SPaT Challenge
“Local Pilots of National Significance”

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V2I Deployment Background

“Chicken and Egg” problem:
How do we encourage / initiate broad V2I deployment?

How do we demonstrate commitment to the OEM and private industry?

What is a reasonable, early expectation?

Signalized Intersections (low-hanging fruit)
The SPaT Challenge

Challenge state and local public sector transportation Infrastructure Owners & Operators (IOOs) to achieve deployment of DSRC infrastructure with SPaT broadcasts in at least one coordinated corridor or network (approximately 20 signalized intersections) in each state by January 2020.
The SPaT Challenge

So, what is SPaT?
A Signal Phase and Timing (SPaT) message defines the current intersection signal light phases.
The current state of all lanes at the intersection are provided, as well as any active pre-emption or priority.

The SPaT message defined by SAE J2735 and also includes a MAP message of the intersection.
The SPaT Challenge

Why this Challenge?
To provide IOOs with an entry into DSRC-based V2I deployment allowing them to gain valuable procurement, licensing, installation, and operation experience, which in turn will:

- Lay the ground work for more advanced V2I deployments
- Show a commitment to OEMs and applications developers
- Analogous to early fiber deployments – most benefits come later
The SPaT Challenge

• What are the benefits?
• Be more prepared for DSRC-equipped vehicles and on-board V2I applications
• Useful as testing site for future applications
• Supports deployment of V2I Applications that build on SPaT at intersections
  ▪ Smart Transit Signal Priority
  ▪ Red Light Violation Warning
  ▪ Intelligent Signal Systems
  ▪ Eco-Driver
1 website for all your resource needs

32 States Committed
Number of states committed to respond to SPaT Challenge.

216 Signals Operating
Current number of operating signals. Number of signals planned for 2019, 2020+

2,036 Signals Planned

https://transportationops.org/spatchallenge
SPaT Challenge Resources

SPaT Challenge

The following resources have been compiled or created by members of the V2I Deployment Coalition and are available or will soon be available:

- SPaT Challenge Folio (Quick facts and message)
- DSRC licensing information
- Implementation guidance
- Guidelines for selecting corridors
- Infrastructure System Model Concept of Operations
- Estimated costs (install & maintenance) - Coming Soon
- Sample SPaT documentation - Coming Soon
- Guidelines for selecting corridors
- Infrastructure System Model Concept of Operations
- Infrastructure System Model Requirements
- Procurement Guidance - Coming Soon
- Identifying existing funding sources to consider - Coming Soon
- Frequently Asked Questions (FAQs)
- Webinar Schedule and Recordings
- Additional Links
SPaT Challenge Webinar Series

The National Operations Center of Excellence will be hosting a webinar series covering the SPaT Challenge, including design considerations and deployment.

The American Association of State Highway and Transportation Officials (AASHTO), the Institute of Transportation Engineers (ITE), and ITS America (ITSA) working together through the Vehicle to Infrastructure Deployment Coalition (V2I DC) have challenged state and local public sector transportation infrastructure owners and operators (IOOs) to work together to achieve deployment of roadside Dedicated Short Range Communications (DSRC) 5.9 GHz broadcast radio infrastructure to broadcast signal phase and timing (SPaT) in real-time at signalized intersections on at least one road corridor or street network (approximately 20 signalized intersections) in each of the 50 states by January 2020. This is commonly called the SPaT Challenge.

Initial SPaT Challenge Activities (Full Webinar Recording) | March 6, 2018

This webinar included presentations on topics by the individuals listed below:

- Introduction to the SPaT Webinar Series - Blaine Leonard, Utah DOT (Recording)
- Systems Engineering Approach to the SPaT Challenge - Ray Starr, Minnesota DOT (Recording)
- Model for Test & Deployment of SPaT Challenge - Eric Foster, Minnesota DOT (Recording)
SPaT Challenge Design Considerations (Part I) (Full Webinar Recording) | March 20, 2018

This webinar included presentations on topics by the individuals listed below:

- Introduction - Blaine Leonard, Utah DOT
- SPaT Messages, Data Assembly, and the Signal Controller Interface - Patrick Chan, ConSysTec [Recording]
- V2I Hub - Chris Stanley, Leidos [Recording]
- Agency experience with deploying on-board units - Faisal Saleem, Maricopa County DOT [Recording]
- Q&A - All [Recording]

Full webinar recording and webinar slides are also available [here](#).
YouTube Playlist

Introduction to the SPaT Webinar Series
Blaine Leonard, Utah DOT

Introduction - SPaT Challenge Webinar #1 - Blaine Leonard
National Operations Center of Excellence

1. Introduction - SPaT Challenge Webinar #1 - Blaine Leonard
2. Systems Engineering Approach - SPaT Challenge Webinar #1 - Ray Starr
3. Model ConOps & Requirements - SPaT Challenge Webinar #1 - Dean Deecker
4. Costs, Procurement, and Corridor Selection SPaT Challenge Webinar #1
5. SPaT Challenge Webinar #1 - Q&A
6. SPaT Messages, Data Assembly, and the Signal Controller Interface - Webinar #2

24 views
SPaT Challenge Participants (03-02-17)
SPaT Challenge Participants (11-17-17)
SPaT Challenge Participants (1-6-18)
Questions?

Do you know of a SPaT Location not on the map?

Please let us know ASAP