

SPaT Challenge

“Local Pilots of National Significance”

Laurie Matkowski

Director of CAV Services, Gannett Fleming

Vice-Chair, National Operations Center of Excellence

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- Latest updates for new TSMO resources
- <https://transportationops.org/user/register>

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?

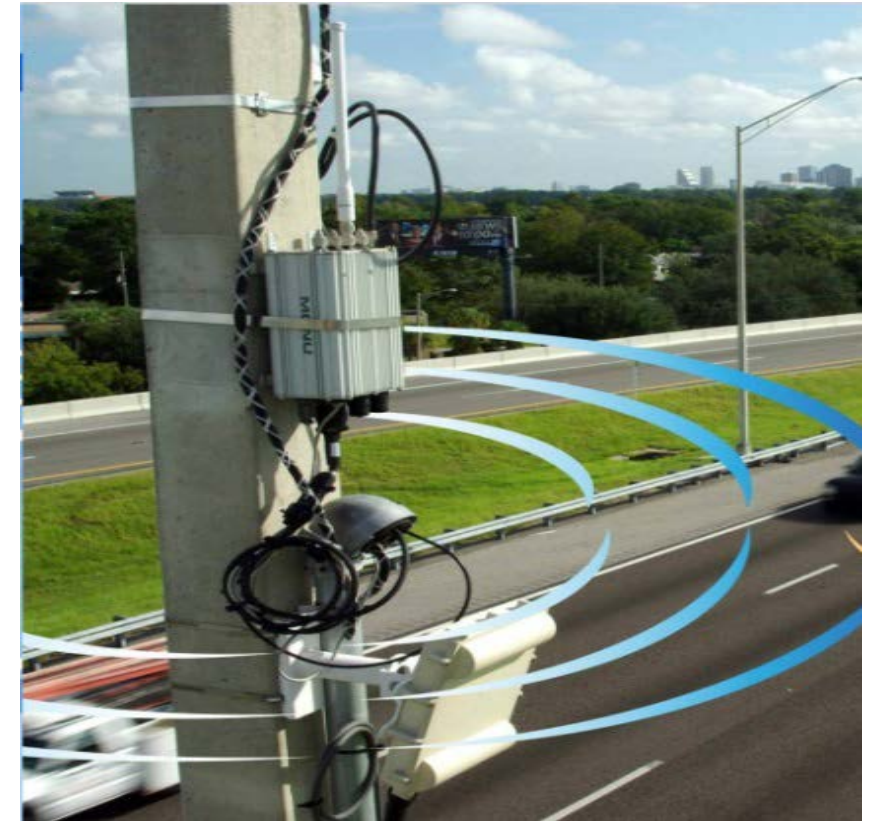
What is a reasonable, early expectation?

**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.



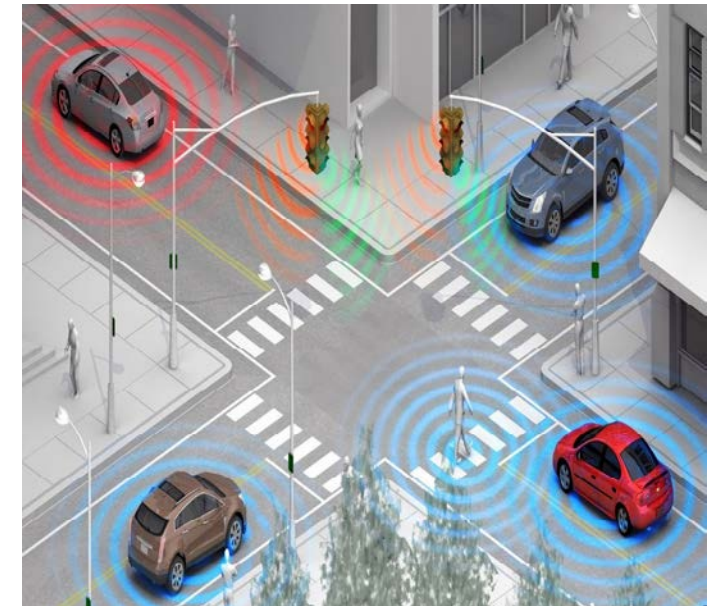
The SPaT Challenge

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

<https://transportationops.org/spatchallenge>



 SPaT deployment underway  SPaT deployment operational

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, and 2020+

2,036

Signals Planned



SPaT Home

Resources

[DSRC licensing information](#)

[Implementation guidance](#)

[Guidelines for selecting corridors](#)

[Infrastructure System Model Concept of Operations](#)

[Infrastructure System Model Requirements](#)

[Frequently Asked Questions \(FAQs\)](#)

[Additional Links](#)

Webinar Series

Contact Us

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](#)
- [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 Home

Resources

Webinar Series

Initial SPaT Challenge Activities

SPaT Challenge Design Considerations (Part 1)

SPaT Challenge Design Considerations (Part 2)

SPaT Challenge: J2735 MAP Creator Tool Demo

SPaT Challenge Design Considerations (Part 3)

SPaT Challenge Deployment & Validation

Contact Us

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](#))

SPaT Challenge Design Considerations (Part 1) (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



SPaT Webinar #1 - Overall Slide Deck Version 1.3b.pptx

Blaine Leonard

Question Pod - ...

Rob Jaffe: It seems like most of the countermeasures

Discussion Pod (...)

Introduction to the SPaT Webinar Series

Blaine Leonard, Utah DOT

AASHTO ITS AMERICA ite

0:00 / 12:31

SPaT Challenge Webinar Series

National Operations Center of Excellence - 1 / 24

- 1 Introduction - SPaT Challenge Webinar #1 - Blaine Leonard
National Operations Center of Excellence
12:31
- 2 Systems Engineering Approach - SPaT Challenge Webinar #1 - Ray Starr
National Operations Center of Excellence
17:52
- 3 Model ConOps & Requirements - SPaT Challenge Webinar #1 - Dean Deeter
National Operations Center of Excellence
18:38
- 4 Costs, Procurement, and Corridor Selection SPaT Challenge Webinar #1
National Operations Center of Excellence
24:37
- 5 SPaT Challenge Webinar #1 - Q&A
National Operations Center of Excellence
20:58
- 6 SPaT Messages, Data Assembly, and the Signal Controller Interface - Webinar #2
National Operations Center of Excellence
31:32

Introduction - SPaT Challenge Webinar #1 - Blaine Leonard

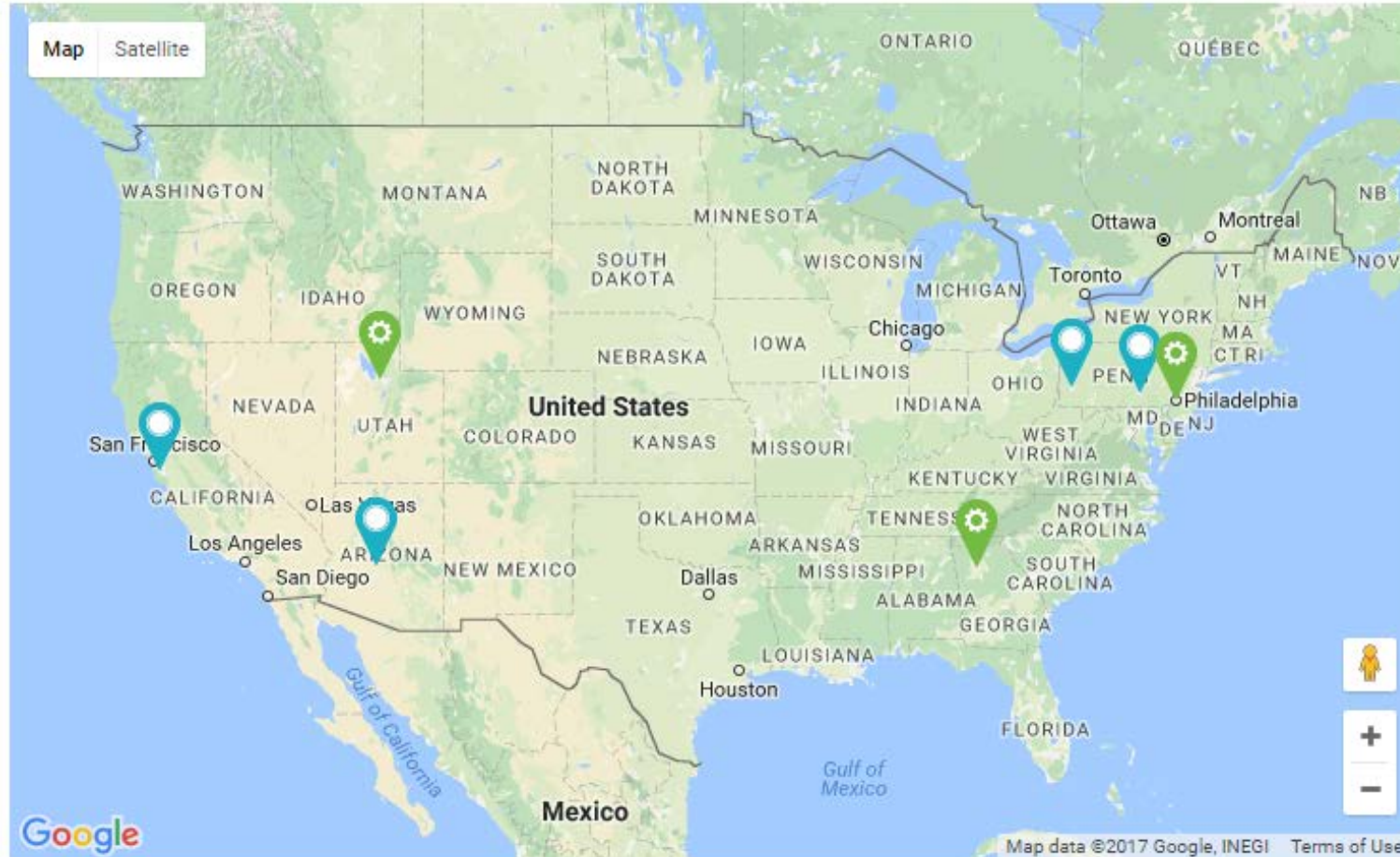
24 views

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Agency Responsibilities
- Reviewing FCC service rules, regulations, and technical

DSRC Licensing Webinar #5
Yang Tao

SPaT Challenge Participants (03-02-17)



SPaT Challenge Participants (05-12-17)



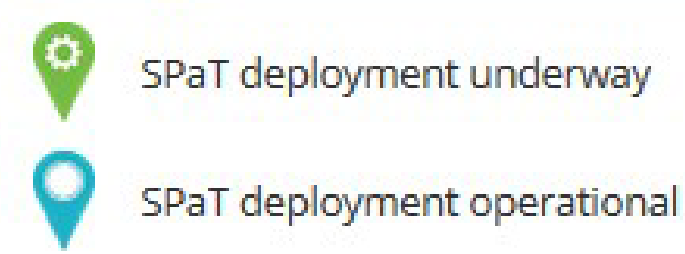
SPaT Challenge Participants (11-17-17)



SPaT Challenge Participants (1-6-18)



June 2018 Status



32

States Committed

216

Signals Operating

2,036

Signals Planned

Questions?

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

Please let us know ASAP