Where has SPaT already been deployed?
The NOCOE has a map to track progress of the Challenge. Check the website for frequent map updates and new resources as they become available!

If you have deployed SPaT or are planning on doing so let people know by posting your information on the website. Go to http://www.transportationops.org/spatchallenge for more information.

Get Involved with Connected Vehicles – Take the Challenge!
More information is available at the National Operations Center of Excellence:
http://www.transportationops.org/spatchallenge
Infrastructure Owners & Operators wishing to join the challenge, or others wishing to participate in the effort, may contact Patrick Son the Managing Director of the National Operations Center of Excellence at pson@transportationops.org

20/50/20 – 20 intersections in each of the 50 states by 2020

The AASHTO Connected Vehicle SPaT Deployment Challenge is being led by the V2I Deployment Coalition which is led by AASHTO, ITE, and ITS America, with support from the AASHTO Connected and Automated Vehicle Working Group.

You can get a copy of this folio at http://transportationops.org/spatchallenge

The National Connected Vehicle SPaT Deployment Challenge

A Challenge...
To state and local public sector transportation infrastructure owners and operators to achieve deployment of DSRC 5.9 GHz infrastructure with SPaT broadcasts in at least one corridor or network (approximately 20 signalized intersections) in each of the 50 states by January 2020 through cooperation and coordination.

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.

What is DSRC?
Dedicated short range communication (DSRC) refers to two-way radio communication operating on the 5.9GHz band for the purpose of supporting vehicle to vehicle (V2V) and vehicle to infrastructure (V2I) traffic applications. The FCC has set aside this band for this purpose. The National Highway Traffic Safety Administration (NHTSA) is in the process of requiring all new light vehicles sold in the U.S. to be equipped with DSRC radios and for those radios to transmit basic information about the location, speed, and critical operations of the vehicle. This will enable agencies to both collect limited anonymous vehicle data using roadside installed DSRC radios and to transmit data, such as SPaT, back into the vehicle with the intent to support safer, more efficient operations.
Why is this challenge important?

- It provides State and Local DOTs with an entry into DSRC based V2I deployment (allowing them to gain valuable procurement, licensing, installation, and operation experience)
- It promotes future (more advanced) V2I deployments
- It demonstrates a commitment to automobile manufacturers and applications developers

Do you have a candidate corridor for the challenge?

Ideally the corridor will have:

- 20 signals, but fewer is OK
- Modern controllers with in-cabinet equipment to support the interface with a DSRC radio (the "roadside unit" or "RSU")
- Backhaul communications with sufficient bandwidth from the corridor either from each signal or from a master.

What else is needed?

In addition to broadcasting SPaT data, the intersection needs to broadcast MAP/GID (Geographic Intersection Description) data. This is a detailed data file that describes the physical intersection geometry, which must be created using accurate mapping data. For some future applications, a global navigation satellite differential correction, the "RTCM," must be broadcast to ensure the vehicles' GPS data is accurate for the intersection. This broadcast can be added later.

“Fortunately, there is one fairly basic connected vehicle element which is relatively simple to deploy and fundamental to a number of applications, the “signal phase and timing” (SPaT) message. SPaT defines the actions of a traffic signal. It is obtained from a traffic signal controller via a standard query protocol and is broadcast by most DSRC roadside devices as a standardized data message.”

Blaine Leonard, Utah DOT ITS Program Manager