

# The AASHTO National Connected Vehicle SPaT Deployment Challenge

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## Policy Resolution PR-3-16

### Title: AASHTO Signal, Phasing and Timing (SPaT) Challenge

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**WHEREAS**, The U.S. Department of Transportation's (DOT) National Highway Traffic Safety Administration (NHTSA) has released an advance notice of proposed rulemaking (ANPRM) to create a new Federal Motor Vehicle Safety Standard (FMVSS) to require vehicle-to-vehicle communication capability for light vehicles; and

**WHEREAS**, The automobile manufacturers are preparing the hardware and software components that will achieve vehicle-to-vehicle (V2V) communications using Dedicated Short Range Communications (DSRC) in anticipation of the proposed rulemaking, with some deployments as early as the 2017 model year; and

**WHEREAS**, The DSRC capabilities being developed by the automobile manufacturers for vehicle-to-vehicle communications can also be leveraged and expanded to enable a two-way communication that is capable of delivering data and information from the roadside to the vehicle and from the vehicle to the roadside (commonly referred to as vehicle to infrastructure [V2I] Applications); and

**WHEREAS**, A number of V2I Applications have been identified and defined in detail in the USDOT Connected Vehicle Reference Implementation Architecture (CVRIA) that will provide safety, mobility, and environmental benefits once they are deployed and a network of DSRC equipped automobiles are operational; and

**WHEREAS**, The USDOT has asked the American Association of State Highway and Transportation Officials (AASHTO), the Institute of Transportation Engineers (ITE), and the Intelligent Transportation Society of America (ITSA) to work together to create and manage the Vehicle-to-Infrastructure Deployment Coalition (V2I DC) as a single point of reference for stakeholders to meet and discuss V2I deployment related issues; and

**WHEREAS**, Through various funding sources, including USDOT, state, and local funding, there have been multiple pilot deployment sites that have demonstrated the functionality and benefits of V2I Applications in multiple locations throughout the United States; and

**WHEREAS**, Beyond the pilot deployments and a limited number of early adopter deployment sites, the majority of state and local infrastructure owners and operators have not yet begun large scale deployment of V2I Applications even though solutions are now available to problems that were hindering deployments.

**WHEREAS**, The automobile manufacturers are developing at least three V2I applications and are looking for some indications from the infrastructure owners and operators about the timeline for deploying the roadside infrastructure to support V2I applications; and

**WHEREAS**, Most infrastructure owners and operators have corridors of signalized intersections that are interconnected and use modern controllers to coordinate signal timing along the corridor; and

**WHEREAS**, The “signal phase and timing” (SPaT) message is relatively simple to deploy and fundamental to a number of V2I applications, and can be obtained from a traffic signal controller via a standard query protocol and can be broadcast by most DSRC roadside devices as a standardized data message; and

**WHEREAS**, The SPaT broadcasts are typically accompanied by the broadcast of the map data message (MAP), and global positioning system (GPS) correction information as standardized by the Radio Technical Commission for Maritime Services (RTCM), to enable vehicle equipped applications to interpret the SPaT information being broadcast; and

**WHEREAS**, The SPaT, MAP, and RTCM functionality can be deployed in phases, but are all identified as necessary to support communication with vehicles for the purposes of V2I Applications; and

**WHEREAS**, Deploying the SPaT, MAP, and RTCM data message broadcasts in a number of locations around the country will provide state and local transportation agencies with a tangible first step for deploying V2I Applications, promote future more advanced V2I applications, and demonstrate a commitment to the DSRC-based V2I deployments that are needed by automobile manufacturers; and

**WHEREAS**, The net result of deploying SPaT will be to accelerate V2I application deployment by the automobile manufacturers, the private sector, and the public sector; now therefore be it

**RESOLVED**, That AASHTO is challenging the state and local public sector transportation infrastructure owners and operators to cooperate together to achieve deployment of DSRC infrastructure with SPaT, MAP, and RTCM broadcasts in at least one corridor or network (approximately 20 signalized intersections) in each of the 50 states by January 2020 (referred to as the “AASHTO SPAT Challenge”); and therefore be it

**RESOLVED**, That the AASHTO-led V2I Deployment Coalition, AASHTO Highways Subcommittee on Transportation Systems Management and Operation (STSMO) Connected and Automated Vehicle Working Group, AASHTO Highways Subcommittee on Traffic Engineering (SCOTE), and National Operations Center of Excellence (NOCoe) will develop resources and lead implementation of the SPaT Challenge with public sector transportation agencies; and therefore be it further

**RESOLVED**, SCOH approves this resolution and forwards it to the AASHTO Board of Directors for final approval and implementation.