

SCOWCT Year in Review

SCOWCT Annual Meeting
September 13, 2017

SCOWCT Current Technical Working Groups – Met over the past year

TWG1: Legacy Programs

- Frequency coordination
- Land mobile radio
- FCC regulations and procedures

TWG2: Spectrum Management

- Transportation's rights to public airwaves
- Adequate spectrum availability

TWG3: Cybersecurity

- Cybersecurity for legacy systems and new systems
- Integrate cybersecurity into NTCIP protocols

TWG4: Future and Emerging Technology

- Infrastructure to support connected & autonomous vehicles
- Backhaul, integration with emerging systems

- **Bi-monthly Meetings**
- **Member education and outreach**
- **Work to advance strategic objectives**

DOTs Participating in TWG Meetings (21 DOTs)

Nov 2016 – August 2017

- Alaska DOT & PF
- Caltrans
- Colorado DOT
- Florida DOT
- Georgia DOT
- Idaho Transportation Department
- Iowa DOT
- Kansas DOT
- Kentucky Transportation Cabinet
- Maryland DOT
- Michigan DOT
- Minnesota DOT
- Nevada DOT
- New Hampshire DOT
- New York State DOT
- North Dakota DOT
- Oklahoma DOT
- South Dakota DOT
- Texas DOT
- Vermont Agency of Transportation
- West Virginia DOT

Others Participating in TWG Meetings Nov 2016 – August 2017

- FHWA
- TRB
- FirstNet
- Florida International University
- Televate
- Atkins North America
- RadioSoft, Inc.

Year in Review TWG1 Legacy Programs

Legacy Programs

Focus Areas and Related Efforts

- Frequency Coordination
- Land Mobile Radio
- FCC and NTIA developments and procedures
- Public Safety/Business Land Mobile Radio (LMR) Committees and Councils

Legacy Programs

Strategic Objectives

1. Provide support on FCC-related issues and initiatives.
2. Support interoperability, peer exchanges, training and education, best practices sharing, and legacy systems transformation.
3. Establish connections with other AASHTO committees and other associations/entities, as appropriate.

Legacy Programs

TWG 2 Year in Review

- **TWG1 Webinar Meetings**
 - February 2017
 - June 2017
 - August 2017
- **11-12 participants at each meeting (5-7 attended last year)**

Legacy Programs – Priority Initiative

TWG 1 Initiatives

- **Engage Members in AASHTO Frequency Coordination services**
 - Clarify Role of Coordinators and Interaction with SCOWCT Members - ***Complete***
 - Update list of State Frequency Coordinators and clarify connection to SCOWCT committee on AASHTO/RadioSoft web page – ***Complete***

Legacy Programs

TWG 1 Initiatives

■ Role of State Frequency Coordinators

- ❖ State Frequency Coordinators are familiar with local radio frequency use in their state
- ❖ As frequency allocation requests are submitted, trained coordinators work with customers to find the best frequencies to recommend for allocation and licensing.

■ AASHTO Technical Committee Expertise:

- ❖ AASHTO works closely with SCOWCT to facilitate exchange of information, best practices, and lessons learned regarding Land Mobile Radio technologies and operations.
- ❖ AASHTO utilizes SCOWCT member contacts to coordinate with those who manage frequency use and have local knowledge that is useful when performing frequency allocation and licensing services.

Updated Web Page

- Home
- Applying For A License
- Fee Schedule
- Additional Information
- State Frequency Coordinators
- Downloads

FEATURED ITEMS

- MAP-21 Implementation Resource Center
- Highway Safety Manual
- Center for Excellence in Project Finance
- Center for Environmental Excellence
- SHRP2
- AASHTO Freight Transportation Network
- AASHTO Radio Frequency Coordination
- National Transportation Product Evaluation Program
- National Transportation Management Conference (NTMC)

AASHTO > Coordinators



State Frequency Coordinators and AASHTO Committee Coordination

Role of State Frequency Coordinators: State Frequency Coordinators have a familiarity with local radio frequency use in their state. As frequency allocation requests are submitted, trained coordinators work with customers to find the best frequencies to recommend for allocation and licensing.

Technical Committee Expertise: AASHTO works closely with members of its [Special Committee on Wireless Communications Technology \(SCOWCT\)](#) to facilitate the exchange of information, best practices, and lessons learned regarding Land Mobile Radio technologies and operations among those who manage radio frequency use for transportation agencies. AASHTO utilizes the SCOWCT member contacts to coordinate with those who manage frequency use and have local knowledge that is useful when performing frequency allocation and licensing services.

State Frequency Coordinators (July 2017):

Robert Hugi

Technical Coordinator/State Frequency Coordinator
Idaho Transportation Department
rhugi@imd.idaho.gov
208-288-4007

Roy Esteven

Communications Engineer
Louisiana DOTD
Roy.Esteven@LA.GOV
225-379-2527

Phil Lazarus

Assistant Division Chief - Engineering and Tech Support
Maryland DOT
PLazarus@sha.state.md.us
410-455-8330

David Chase

Communications Supervisor
New Hampshire DOT
David.chase@dot.nh.gov
603-227-0018

TWG1 Legacy Programs Year in Review

Other Agenda Highlights

- FCC Field Offices and Spectrum Use Enforcement
- AASHTO Booth at IWCE, with RadioSoft, Inc.
- NCHRP 03-129 “Essential Communications” Project – funded for FY18.
 - Explores use of 700 MHz spectrum for communications to field devices
 - Link to Project Description:
<http://apps.trb.org/cmsfeed/TRBNetProjectDisplay.asp?ProjectID=4353>

Year in Review
TWG2 Spectrum Management

Spectrum Management

Focus Areas and Related Efforts

- Transportation's rights to public airwaves
- Availability of adequate spectrum for future growth
- Member education on spectrum issues

Spectrum Management

Strategic Objectives

1. Maintain awareness and monitor developments impacting State DOT frequency management activities (e.g. FCC proposed rulemakings). Provide technical support on FCC and other federal or nationwide issues related to spectrum sharing, future communication technologies, and Federal rule makings.
2. Serve as Subject Matter Experts (SMEs) for AASHTO Committees and State DOTs at technical, policy and executive levels, could include developing issues-based white papers.

Spectrum Management

TWG2 Year in Review

- TWG2 webinar meetings:
 - ❖ December 2016
 - ❖ April 2017
 - ❖ June 2017
- 9-14 participants at each meeting (5-11 last year)

Spectrum Management

TWG 2 Initiatives

Initiative #1: Determine & implement mechanism to monitor and communicate FCC developments; respond as appropriate

1. AASHTO sent out link to subscribe to FCC Daily Digest
2. Initiated ongoing process to track developments & advise actions
 - Peter Moncure & Kathi Buczkowskie (RadioSoft, Inc.) and AASHTO staff review FCC Daily Digest to identify items of interest; recommend actions such as submitting comments to Public Notices or NPRMs.
 - AASHTO will distribute/forward relevant information to SCOWCT/TWG2.
 - TWG2 to review information and determine any actions, ether via email or via special meeting/conference call, and respond, as needed.

Spectrum Management

TWG 2 Initiatives

SCOWCT Assistance on NPRM Responses:

- Members provided input to AASTHO comments on NPRM for V2V Communications
- Members provided input to AASHTO response to NPRM on Removing Barriers to Wireless Infrastructure Development

Spectrum Management

TWG 2 Initiatives

Initiative #2: Finalize SCOWCT “DOT Communications” Survey

1. Solicited additional responses – 33 states responded
2. SCOWCT webinar to review results (April 2017)
3. Results posted on SCOWCT web page:
<https://wireless.transportation.org/2017-survey-results/>
4. Shared results with STSMO leadership team (June 2017)

Spectrum Management

TWG 2 Initiatives

Key Findings from SCOWCT “DOT Communications” Survey

Highest-priority DOT needs:

- ❖ Funding for communications infrastructure
- ❖ Interoperability and coverage challenges
- ❖ Recruitment and retention of qualified radio/ITS technicians
- ❖ Lack of in-house expertise and formal guidance to deploy Connected/Automated Vehicle communications infrastructure

Spectrum Management

Other Meeting Highlights

FirstNet Update – June 2017

- Presentation by Kenzie Capece, FirstNet
- Update on network provider selection and release of state plans
- Q/A: Focused on clarification on pre-emption protocols, how transportation has been involved

Year in Review TWG3 Cybersecurity

Cybersecurity

Focus Areas and Related Efforts

- Best practices for cybersecurity in transportation
- Cybersecurity guidelines for legacy ITS equipment and new systems
- Integrate cybersecurity into NTCIP standards
- Physical security of ITS systems (as needed)

Cybersecurity

Strategic Objectives

1. Support the National Cybersecurity Task Force being organized by ITE and other partners
2. Serve as AASHTO subject matter expert (SME) group to support cybersecurity initiatives related to research, policy, training, education, peer exchange, and pertinent funding initiatives.

Cybersecurity

TWG3 Year in Review

- **TWG3 webinars:**
 - January 2017
 - March 2017
 - June 2017
- **10-13 participants at each meeting (last year 7-12)**

Cybersecurity

TWG3 Initiatives

1. Track and communicate cybersecurity research efforts (e.g. NCHRP)
2. Share best practices for cybersecurity
3. Explore ITS asset management as a cybersecurity strategy
4. Support activities of National Transportation Cybersecurity Framework and Task Force – being formed by ITE and partners (no action this year)

Cybersecurity

TWG3 Meetings

Updates on Cybersecurity Research Projects (Jan 2017)

- **NCHRP 20-59(48): Effective Practices for the Protection of Highway Transportation Infrastructure from Cyber Incidents**
 - Web-only publication: “Protection of Transportation Infrastructure from Cyber Attacks: A Primer”, TRB Webinar on this Primer (Nov 2016)
<http://www.trb.org/Main/Blurbs/173265.aspx>
- **NCHRP 03-127: Cybersecurity of Traffic Management Systems**
 - SCOWCT Members on Project Panel: Russ Buchholz (North Dakota) and Robert White (Vermont)
 - Tracking Research Progress
<http://apps.trb.org/cmsfeed/TRBNetProjectDisplay.asp?ProjectID=4179>

Cybersecurity

TWG3 Meetings

Communications Technology Policy Updates (March 2017)

- FCC Public Notice: Streamlining Deployment of Small Cell Infrastructure by Improving Wireless Facilities Siting Policies
 - Discussed AASHTO response to Public Notice – gathered input
- USDOT NPRM: V2V Communications
 - Updated members on status of AASHTO's NPRM comments

Cybersecurity

TWG3 Meetings

Webinar to Share Cybersecurity Best Practices (June 2017)

- Alaska DOT&PF Security for ITS Infrastructure and Communications – Ocie Adams
- New Hampshire DOT Practices for Security of Cell Modems – David Chase

Year in Review
TWG4 Future and Emerging
Technology

Future and Emerging Technology

Focus Areas and Related Efforts

- Legacy ITS and New Technologies
- Communications to Support Connected and Autonomous Vehicles including Backhaul
- CV Footprint Analyses and Near Term CV Tools
- Coordination with V2I Deployment Coalition

Future and Emerging Technology

Strategic Objectives

1. Provide a framework for DSRC and other pertinent license application and approval procedures using current FCC license coordination methods as a baseline.
2. Coordinate with backhaul initiatives related to the above listed CV/AV and other emerging technologies.

Future and Emerging Technology

TWG4 Year in Review

- **TWG4 Webinar Meetings:**
 - December 2016
 - February 2017
 - May 2017
 - August 2017
- **10-12 participants at each meeting (7-9 last year)**

Future and Emerging Technology

TWG 4 Initiatives

- Education and outreach about DSRC, CV, and AV implementation status
 - ❖ Identified need to understand existing resources – what's out there?
 - ❖ Presentation of Current Published Resources – May TWG4 meeting
 - ❖ Developed compilation document: “Select Published Resources: CV and DSRC Deployment”
 - ❖ Consider next steps for defining needs and requirements for DSRC

Future and Emerging Technology

TWG 4 Initiatives

“Select Published Resources: CV and DSRC Deployment” document contains:

- ❖ **USDOT Web Pages:** Publications, CV Pilot Deployments, and Research
- ❖ **Deployment Guidance Publications:** DSRC Licensing Guidance, SPaT Challenge Resources, etc.
- ❖ **Prioritizing Connected Vehicle Application and Deployment -** Footprint Analysis, Reference Implementation Architecture (CVRIA),
- ❖ **Connected Vehicle Standards**
- ❖ **Systems Engineering Resources –** ConOps and Requirements

USDOT ITS Joint Program Office web pages:

- Vehicle-to-Infrastructure (V2I Resources): <https://www.its.dot.gov/v2i>
- CV Pilots Deployment Project: <https://www.its.dot.gov/pilots/index.htm>
- Research Archive: https://www.its.dot.gov/research_archive.htm

Deployment Guidance

- [Vehicle to Infrastructure Deployment Guidance and Products](#) (FHWA, Sept 2014)
 - DSRC licensing is addressed on pages 16-17. Page 17: “Although safety communication has precedence, identification and removal of interfering non-safety signals could be problematic, particularly if the interfering deployment was licensed and sited first. FHWA recommends that once an application deployment is identified in the planning process, site licensing should be undertaken.”
- [Recommended Practices for DSRC Licensing and Spectrum Management](#) (FHWA, Dec 2015)
 - Carefully read entire document
 - Flowcharts for obtaining a license begin on p. 27
- [V2I Deployment Coalition Resources](#)
 - Resources include a Final Report, Webinars, and Technical Memorandums on various issues related to deployment guidance, standards, and initiatives.
- [SPaT Challenge Resource: Implementation Guide](#) (AASHTO, 2016)
 - A high-level summary of the deployment process for Signal Phase and Timing (SPaT) messages and supporting messages and applications.

Prioritizing Connected Vehicle Application and Deployment

- [National Connected Vehicle Field Infrastructure Footprint Analysis](#) (FHWA, June 2014)
 - Pages 24-26 provide a list of applications identified from a greater analysis of potential CV applications. The remainder of this section of the document talks in greater detail about the communications process and assumptions.

Future and Emerging Technology

Other Meeting Highlights

- Wireless Communications Policy
 - Mobile Now Bill – Dave Huft, SDDOT
 - FCC Public Notice on Cellular Tower Siting
- U.S. Government Accountability Office (GAO) input from AASHTO - FirstNet Implementation
 - Created position document – noting how DOT has been involved, opportunities, and concerns
 - Meeting with GAO staff to provide input