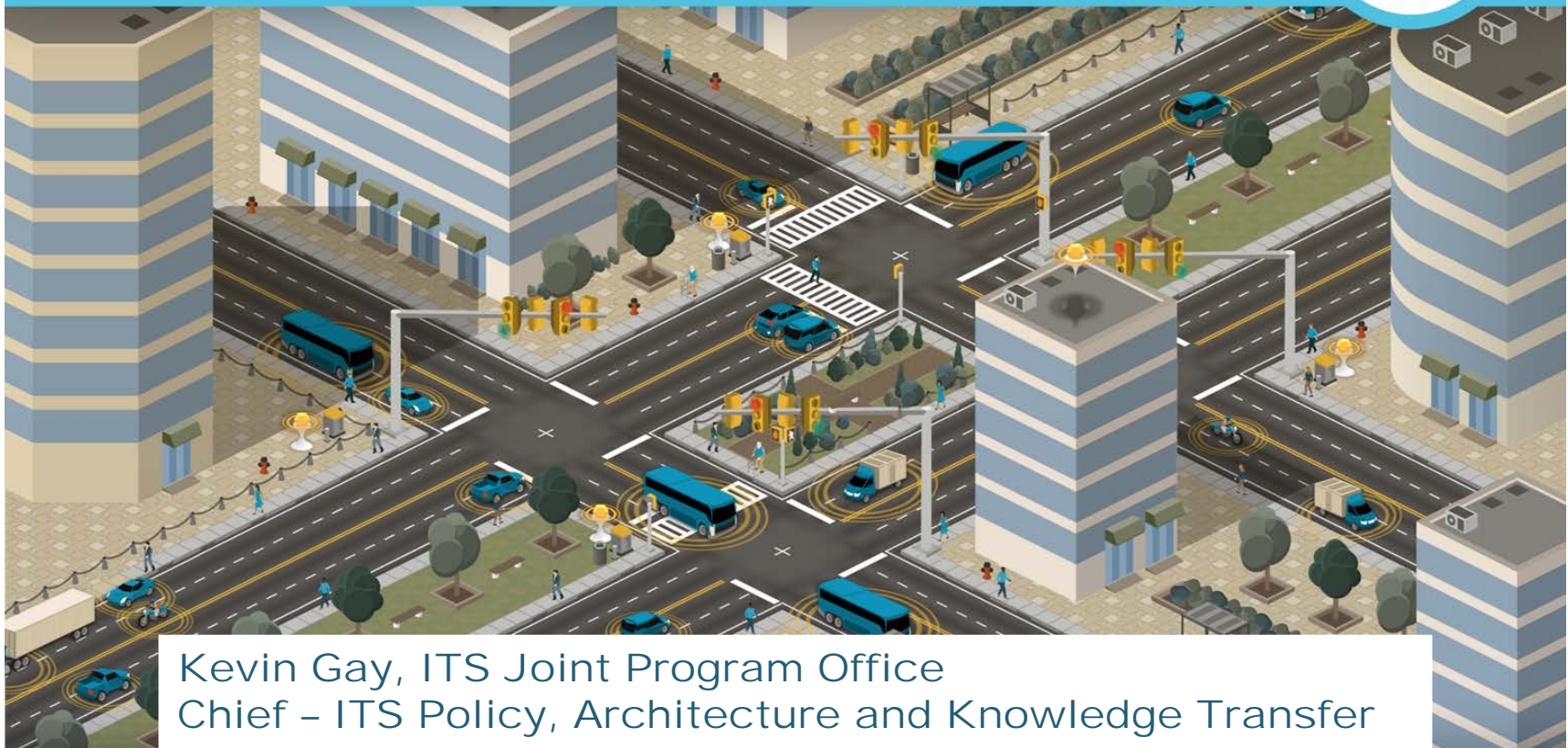# CERTIFICATION PROGRAM – UPDATE

Kevin Gay, ITS Joint Program Office
Chief – ITS Policy, Architecture and Knowledge Transfer

ITS Joint Program Office

U.S. Department of Transportation

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Project Background

- USDOT competitively selected three certification service providers – Danlaw, 7Layers and OCS
- All three work through the Certification Operating Council (COC) to develop certification services
- Certification services will be available during CV Pilots Build and Operation phases on a fee-for-service basis
- Vision is to help the industry to organize and run self-sustaining certification program supporting deployment of DSRC-based services

Certification Service Providers

DANLAW

Danlaw provides connected vehicle telematics solutions and embedded electronics to OEMs and their Tier-1 supply chain.

Andrew Donaldson
+1 (248) 957-9829
andrewd@danlawinc.com

OmniAir™ Certification Services

OmniAir Cerfication Services (OCS) is a non-profit organization founded by OmniAir to execute independent certification for the intelligent transportation industry.

Mike Brown
+1 (210) 323-3651
mabrown@swri.org

7layers testing for a smarter world

7Layers is an international group of engineering & test centers having a core competence in wireless technologies.

Dimitri Khijniak
+1 (949) 732-8022
dmitri.knijniak@7layers.com

CERTIFICATION OPERATING COUNCIL INFORMATION

Project Objectives

- Create/update existing test specifications
- Develop test methods and test tools supporting test automation
- Conduct device testing
- Develop process for issuance certificates of compliance
- Develop a business plan for certification

Scope of Certification Program

- Device interoperability regarding selected message flows
- Conformance to the message protocol
  - Ability to transmit & receive messages according to specific protocols
  - Use message security and security credentials
- Conformance to minimum performance requirements
  - Use position and timing information
  - Minimum RF performance

Focus on Key Interfaces for CV Pilots
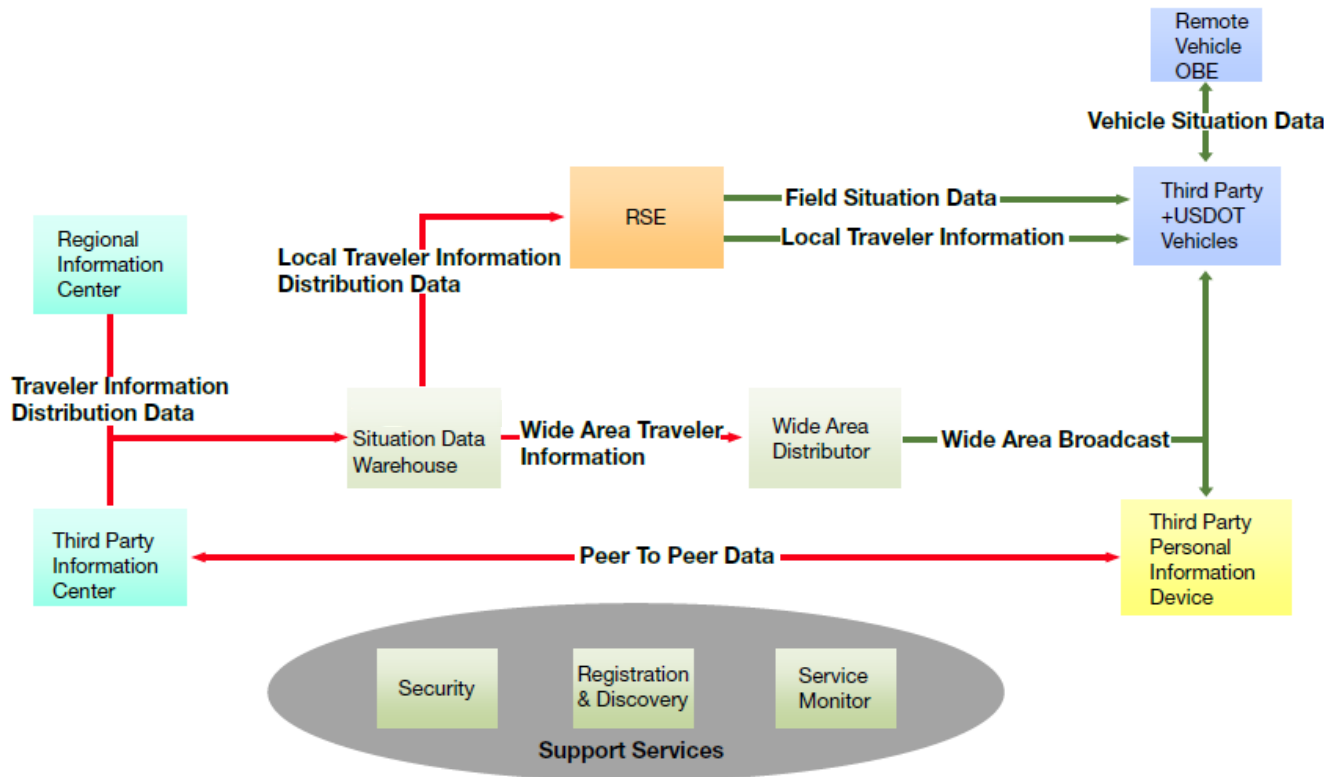
Information flows for basic system interoperability

Vehicle Situation Data: All basic safety messages (BSMs) meet performance requirements

Field Situation Data:
All MAPs and signal phase and timing (SPaT) created using same interpretation

Application Protocol Data Units

Traveler Situation Data:
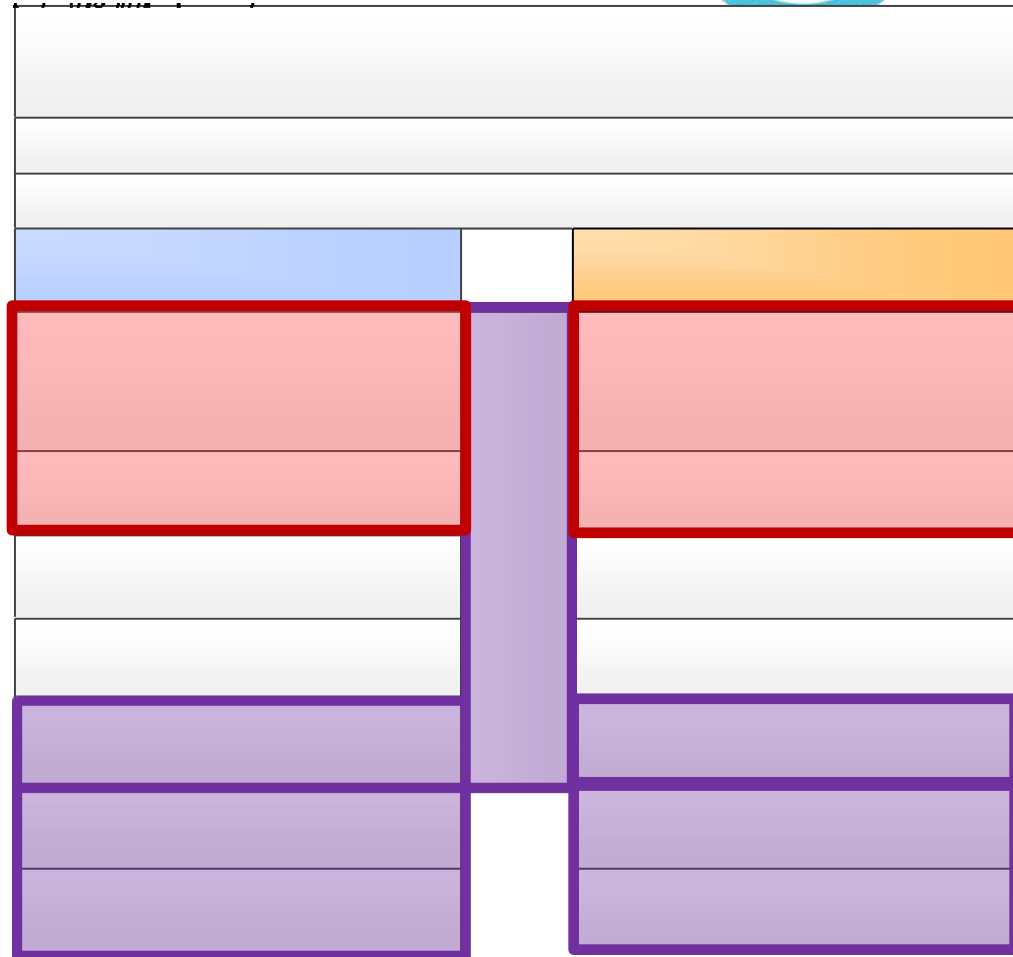- Use common distribution

SCMS:
- Use one system

Certification Scope by Modules

- DSRC Messaging
  - SAE J2945/1 Requirements for BSM
  - Encoding (ISO ASN.1 UPER)
  - Process Information (SAEJ2735)

- DSRC Communications
  - Physical (IEEE 802.11)
  - Link (IEEE1609.4)
  - Transport (IEEE1609.3 WSMP and WSA)
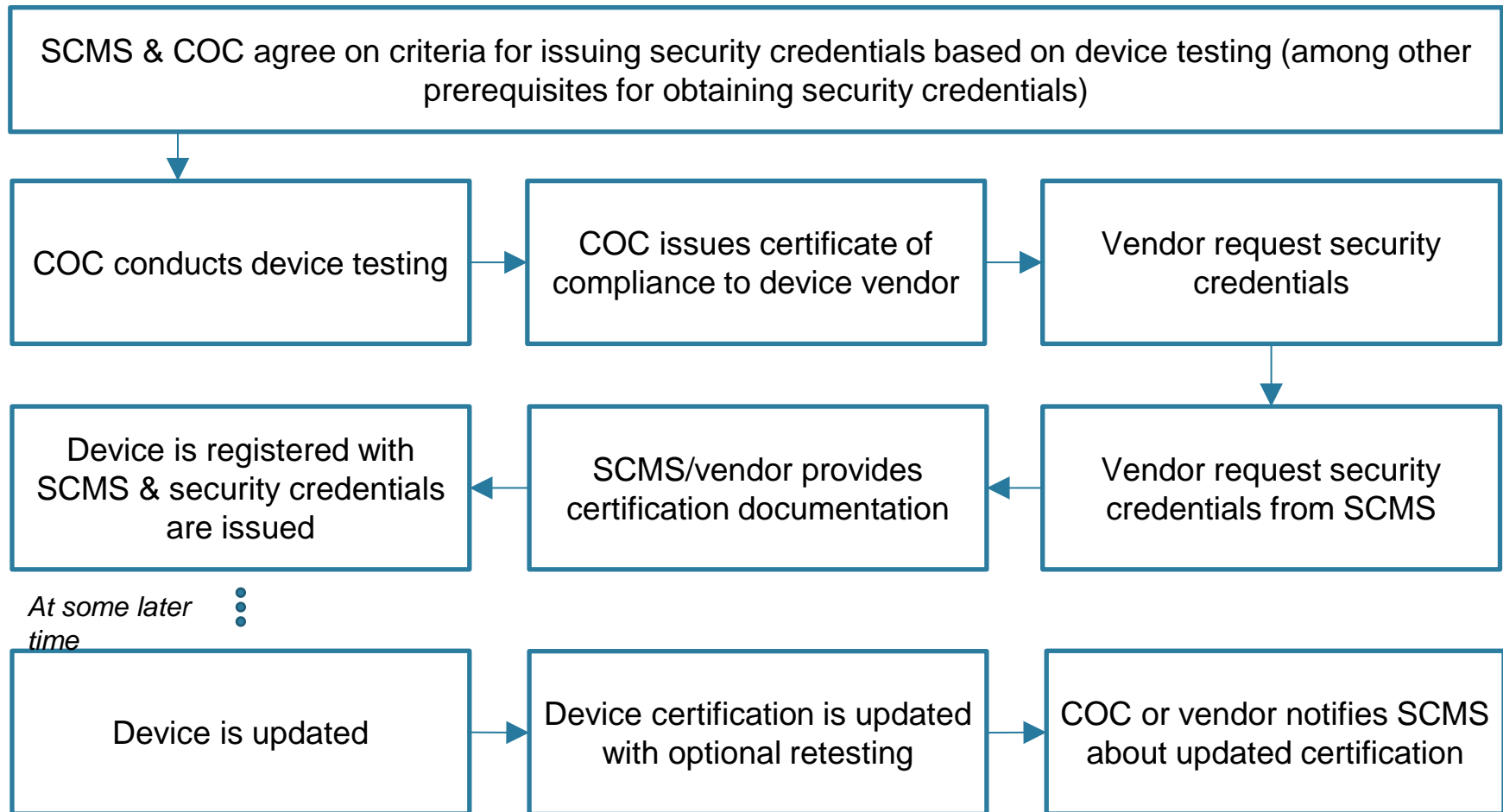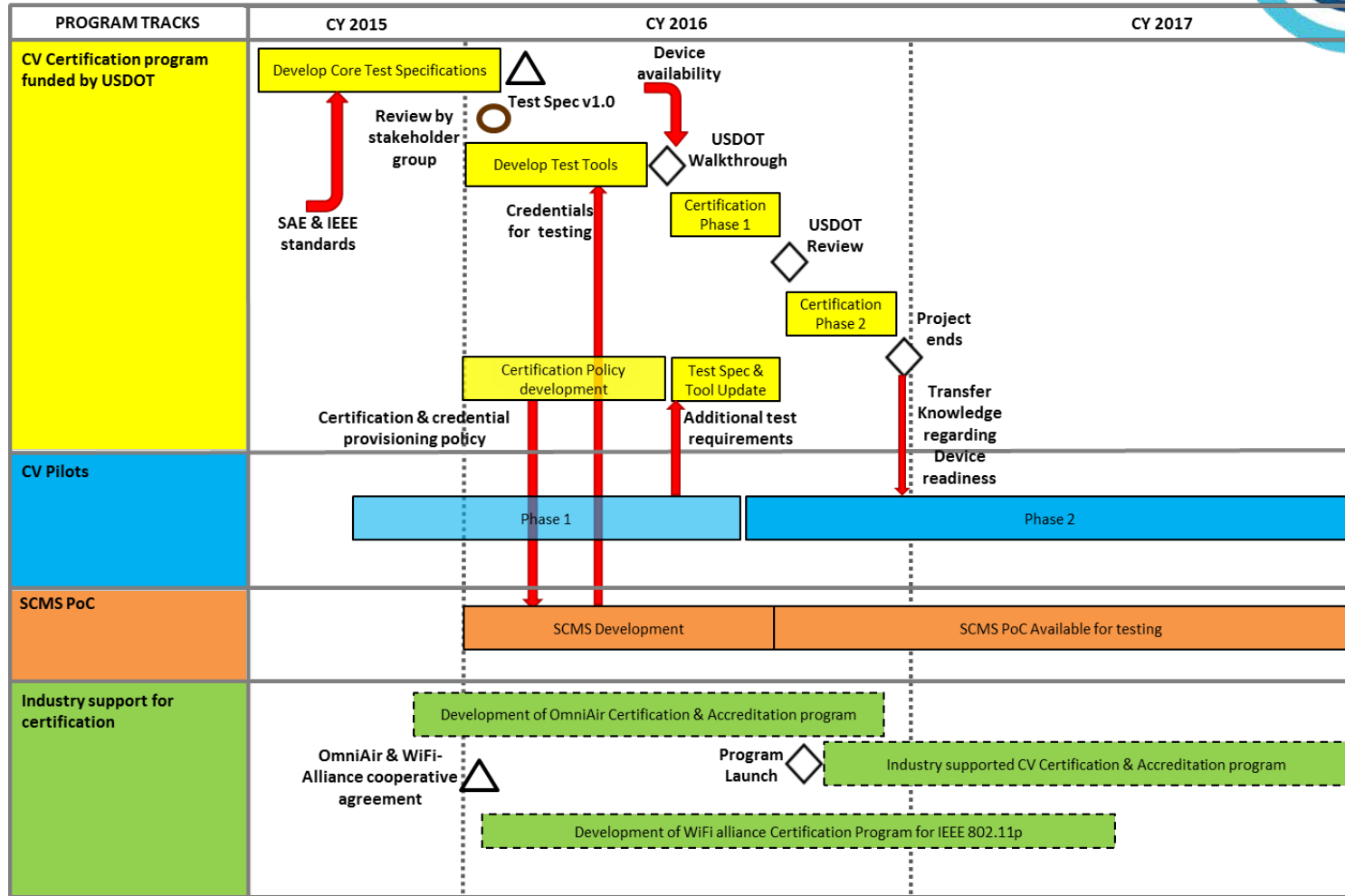 - Security (IEEE1609.2)

Test Specifications

Test Specifications	Title / Scope	Current status
WAVE802.11-TSS&TP	Test Suite Structure and Test Purposes for IEEE 802.11 (scope of DSRC)	Updated based on USDOT and selected Industry participant review
WAVEMCO-TSS&TP	Test Suite Structure and Test Purposes for Multi Channel Operation (IEEE 1609.4)	Updated based on USDOT and selected Industry participant review
WAVENS-TSS&TP	Test Suite Structure and Test Purposes for Network Services (IEEE 1609.3)	Updated based on USDOT and selected Industry participant review
WAVESEC-TSS&TP	Test Suite Structure and Test Purposes for Security Services (IEEE 1609.2)	Updated based on USDOT and selected Industry participant review
J2945.1-TSS&TP	Test Suite Structure and Test Purposes for J2945.1	Updated based on USDOT and selected Industry participant review
Test System Interface	Test Command Interface protocol specification	Released for review and comment by test specification reviewers.

- Additional test specifications are being added in order to support SCMS and V2I applications

Interface between Certification Operating Council and SCMS

SCMS & COC agree on criteria for issuing security credentials based on device testing (among other prerequisites for obtaining security credentials)

COC conducts device testing	COC issues certificate of compliance to device vendor	Vendor request security credentials

Device is registered with SCMS & security credentials are issued	SCMS/vendor provides certification documentation	Vendor request security credentials from SCMS

At some later time

Device is updated	Device certification is updated with optional retesting	COC or vendor notifies SCMS about updated certification

Connected Vehicle - Next Stage Certification Environment

PROGRAM TRACKS	CY 2015	CY 2016	CY 2017
CV Certification program funded by USDOT	Develop Core Test Specifications — Test Spec v1.0 — Review by stakeholder group — SAE & IEEE standards	Device availability — Develop Test Tools — USDOT Walkthrough — Credentials for testing — Certification Phase 1 — USDOT Review — Certification Phase 2 — Project ends — Certification Policy development — Certification & credential provisioning policy — Test Spec & Tool Update — Additional test requirements — Transfer Knowledge regarding Device readiness	
CV Pilots		Phase 1	Phase 2
SCMS PoC		SCMS Development	SCMS PoC Available for testing
Industry support for certification	Development of OmniAir Certification & Accreditation program — OmniAir & WiFi-Alliance cooperative agreement — Development of WiFi alliance Certification Program for IEEE 802.11p	Program Launch	Industry supported CV Certification & Accreditation program

4/6/2016 **LEGEND:** Solid – Program Funded / Dash – Outside Funded

Draft 1
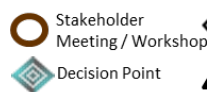
Stakeholder Meeting / Workshop — Milestone — Decision Point — Major Deliverable

COC Near Term Activities

- Understand planned capabilities to SCMS test interface
- Security credentials for COC test systems in order to test devices
- Bootstrapping process for test systems (i.e. file format for certificates, etc)
- Clarity about supported security profiles for various message types:
  - BSM (per 2945/1)
  - WSA (per 1609.3)
  - SPAT/MAP
  - TIM
  - SRM/SSM
  - Data Clearing House data exchanges
- Identification of testing capabilities necessary to support V2I applications

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Kevin Gay, PMP
Chief – ITS Policy, Architecture and Knowledge Transfer
Kevin.Gay@dot.gov