

Welcome

OmniAir Consortium

April 30, 2024



SUSTAINING MEMBERS



EXECUTIVE MEMBERS



ASSOCIATE MEMBERS



OMNIAIR ECOSYSTEM:

- Automotive OEMs
- Tier One Suppliers
- Chipset & Technology Component Providers
- Cybersecurity
- Tolling Devices
- Systems Integrators
- Deploying Agencies
- Test Tools
- Test Labs
- V2X Devices
- Research Institutes

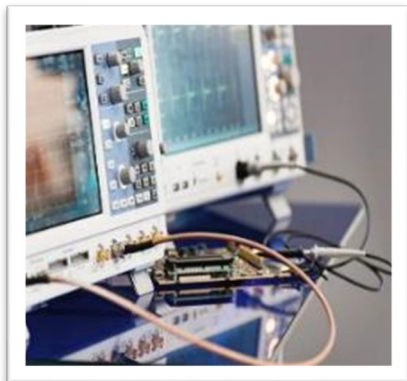
OmniAir Certification Services

Standards ↔ Requirements ↔ Regulatory

Working Groups ↔ Test Cases / Scopes ↔ Validation

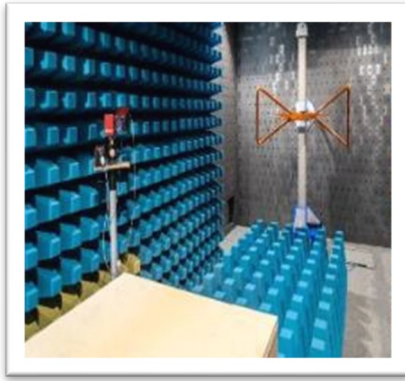


Qualified Test Equipment (OQTE)



Bench & Mobile

Authorized Test Laboratory (OATL)



- Qualified Bench & Field Equipment
- Test Reports

Authorized Field Test Site (OAFTS)



- Open Road Overhead Gantry
- Plaza (Low Speed / Gated)
- Qualified Field Equipment
- Reference Device (ORD)

Device Certification



- Module (Global)
- LTE-V2X (C-V2X PC5)
- DSRC
- RFID SPD & MPD Tolling

In-works: 1) V2X Applications, 2) RSU Interface (1202v3 & 1218), 3) V2X Tolling (Road Usage Charging)



PUBLICLY AVAILABLE DOCUMENTS FOR REFERENCE

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753-OA-CERTSCOPE-MATRIXES

OmniAir Connected Vehicle & Tolling Certification Scope



755A-OA-TCCLIST-LTEV2X

OmniAir Connected Vehicle LTE-V2X Available Test Cases Listing of Test Specifications derived from Standards & Requirements)

LTE-V2X (CV2X PC5) RELEASE 1 CONFORMANCE & INTEROPERABILITY - ONBOARD UNIT (OBU)



TEST SPECIFICATION - 761

3GPP 36-521 LTE Radio Release 14, PC5 Physical Layer (PHY) and MAC (Transmit and Receive Power and Sensitivity)



TEST SPECIFICATION - 762

SAE J3161:2022 and J3161/1:2020 LTE-V2X V2V Protocol Radio Behavior



TEST SPECIFICATION - 763

IEEE 1609.2:2022 Security Services (WSMs/BSMs and WSAs, Certificate Changes/Authentication)



TEST SPECIFICATION - 764A

CAMP Requirements for Security Credentials Management Services (SCMS) Certificates Procurement



TEST SPECIFICATION 765

IEEE 1609.3:2020 Network Services (PSIDs, WSMs, and WSAs)



TEST SPECIFICATION 767

SAE J3161/1:2022 & J3161/1A:2022 LTE-V2X V2V Minimum Performance Test Procedure (Applied for Device-Level) in reference to SAE J2945/1:2022 V2V Minimum Performance (Bench - BSM contents, and Simulated Drive Test Attributes).



TEST SPECIFICATIONS - 768 & 769 CHECKLIST

SAE J3161/1A:2022 V2V Minimum Performance Test Procedure (Applied for Device-Levels, Field Drive Test and Location Accuracy)

LTE-V2X (CV2X PC5) RELEASE 1 CONFORMANCE & INTEROPERABILITY - ROADSIDE UNIT (RSU)

CERTIFICATION PROCESS



TEST SPECIFICATION - 761

3GPP 36-521 LTE Radio Release 14, PC5 Physical Layer (PHY) and MAC (Transmit and Receive, Power and Sensitivity)



TEST SPECIFICATION - 762

SAE J3161:2022 LTE-V2X Radio Behavior



TEST SPECIFICATION - 763

IEEE 1609.2:2022 Security Services (WSMs/BSMs and WSAs, Certificate Changes/Authentication)



TEST SPECIFICATIONS - 764A

CAMP Requirements for Security Credentials Management Services (SCMS) Certificates Procurement



TEST SPECIFICATION - 765

IEEE 1609.3:2020 Network Services (PSIDs, WSMs, and WSAs)



TEST SPECIFICATION - 770

RSU 4.1 Functional Requirements adapted for O-V2X to be compliant with ITE DTI 4001:2022 parameters (SPaT/MAP/WSA Messaging, Immediate Forwarding and Store and Repeat)



TEST SPECIFICATION - 779

DTI 4001:2022 Roadside Unit (RSU) Standard regarding General / Hardware Environmental-Electrical / Mounting



TEST SPECIFICATION - 782

SAE 2735:2023 MAP Message



TEST SPECIFICATION - 783

SAE 2735:2023 Signal Phase and Timing (SPaT) Message



TEST SPECIFICATION - 785

NTCIP 1218:2020 v01.38 RSU Object Definitions including Data Logging, SNMPv3

Working Groups



V2X Technical
Frank Perry – WSP



Certification Policy
Mick Conley – OmniAir



Cybersecurity
Brian Romansky - ISS



RFID Tolling
Jake Royer - E-ZPass Group



Road Usage Charge
Stella Joseph - HNTB



Board Chair
PJ Wilkins
E-ZPass Group



Coordinating Council
Mike Brown
Southwest Research Institute



Aftermarket Safety Devices

V2X Applications
Tom Timcho -HNTB



1609.2.1
Woody Kim - SAESOL TECH



Connected Infrastructure
Nick Hegemier - DriveOhio



Plugfest Testing
Aaron Moore - DriveOhio

Plugfest Goals



Device Vendors

- Check their device certification readiness
- Test their device interoperability capabilities
- Familiarize themselves with the test specifications
- Work with Authorized Test Labs



Test Tool Providers

- Gain access to a mix of devices such as OBU, RSU, Modules
- Test out new test case implementations
- Work with Authorized Test Labs



Authorize Test Labs

- Work with vendors, potential customers
- Work with early versions of the Test Tools
- Training on new test specifications



OmniAir

- Help device vendors prepare for certification
- Validate new test cases
- Train Authorized Test Labs

OMNIAIR PLUGFEST AT MCITY ANN ARBOR, MI MAY 13-17, 2024

CONFIRMED



PARTICIPANTS

Hosted by



Bench and Field SCMS – Security



Bench Conformance and Applications



Field Applications and Location



Devices Under Test



OMNIAIR PLUGFEST

AT MCITY ANN ARBOR, MI
MAY 13-17, 2024



What to Expect for the Week

1. Testing

2. Connected Mobility Workshop with UMTRI

3. USDOT Listening Session

- 2nd Report & Order

Hosted by





Applications & Demonstration Areas

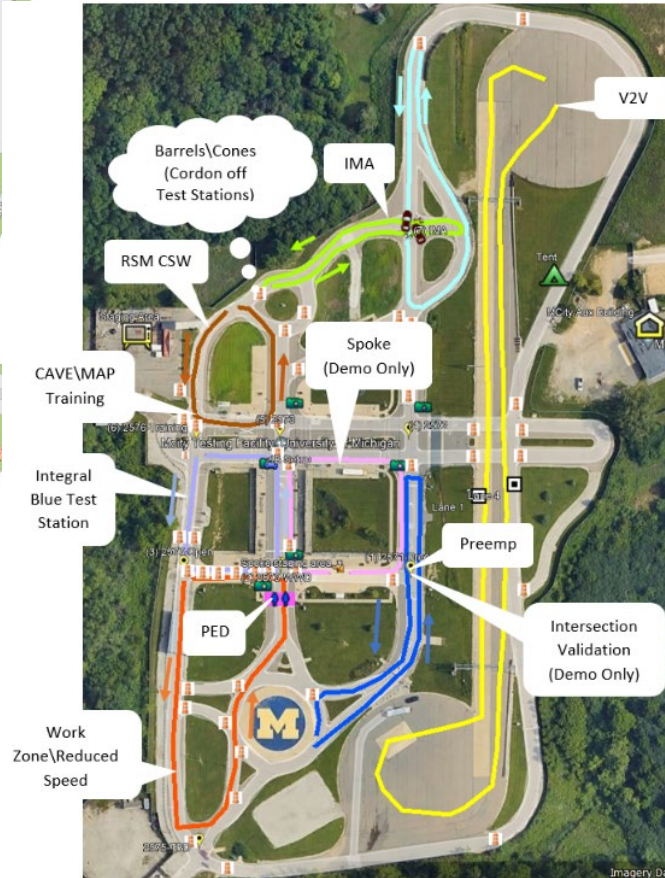
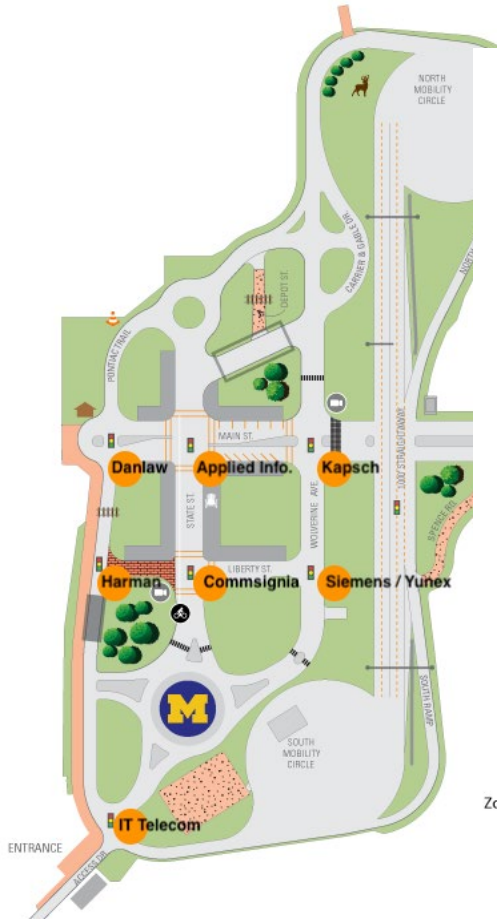
Application Locations

Freeway: OBU vendors will work together as Hosts and Remote devices

- **EEBL:** Based on previous Plugfest
- **FCW:** Based on previous Plugfest
- **Blind Spot:** Based on previous Plugfest

Intersections

- **1) Red Light Violation Warning and Vehicle Preemption:** (Intersection 2571)
- **2) Pedestrian Conflict Warning/Wrong Way Driver:** (Intersection 2570)
- **3) Lane Closure Warning** (from 2022 Plugfest): (Intersection 2577)
- **4) Open:** (Intersection 2572)
- **5) Open** (Intersection 2573)
- **6) CAV/USDOT MAP Training/RSM CSW:** (Intersection 2576)
- **7) LTA/IMA:** (North of Intersection 2572)





Preview of Plugfest Testing Thursday, May 2nd. 1 pm ET





Connected Mobility Workshop

Wednesday, May 15

North Campus Research Complex





Welcome

Opening Remarks



Jason Costley
OmniAir Consortium*



Dr. Jim Sayer
University of Michigan



P.J. Wilkins
E*Cross Group

Evolving Connectivity and Digital Infrastructure

Guest Speakers



Bill McKinley
KeySight Technologies



Nick Hegemier
DriveOhio



Arpan Kusari
UMTRI



Justin Anderson
U.S. Dept. of Transportation



Reid Sigety
SPOKE



Mcity Tour & Demonstrations



Morning Keynote



Dr. Bogdan Eparneau
University of Michigan

[Learn More omniair.org/morning_keynote](https://www.omniair.org/morning_keynote)



Afternoon Keynote



Gregg D. Brunner, PE
Chief Operating Officer, Michigan
Department of Transportation

[Learn More omniair.org/mcity_plugfest/](https://www.omniair.org/mcity_plugfest/)



Accelerating V2X Deployments

Guest Speakers



Dan Toohy
Kapsch Trafficcom



John Harding
U.S. Department of Transportation



John Kwiat
SAE Automotive Association



Brian Romansky
INTEGRITY Security Services



Debra Bezzina
UMTRI



Advancing Safety, Security, and Compliance

Guest Speakers



Mike Brown
Southwest Research Institute



Dr. Henry Liu
Mcity



Frank Perry
WSP



Monica Kim
Saesol Tech



Suzanne Sloan
USDOT/Voipe

OMNIAIR PLUGFEST

AT MCITY ANN ARBOR, MI MAY 13-17, 2024



Hosted by



OMNIAIR PLUGFEST AT MCITY MAY 13-17

V2X Device & Test Station
Registration

Welcome

The OmniAir Plugfest at [Mcity](#) is hosted in partnership with the [University of Michigan Transportation Research Institute \(UMTRI\)](#) the week of May 13-17, 2024. Mcity is the world's first purpose-built proving ground for testing the performance and safety of connected and automated vehicles and technologies under controlled and realistic conditions.

OmniAir Plugfests are the premiere testing event for connected vehicles.

This readiness event will include conformance, interoperability and security, testing for LTE-V2X radios and modules in laboratory and field environments. This year, we will also offer both simulation and field testing for V2X safety applications and use cases.

Enter discount code "Lastchance" by Friday, March 31, to receive \$1,000 off! Must Purchase online!

V2X Testing Overview - In-person Only

Bench and Field Testing at Mcity

Mcity Test Facility

Security Certificates

Testing Elements/Test Cases

OmniAir TCI Instructions

Hotel Accommodations

Shipping Instructions



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www.omniair.org



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