

ITS PCB Community College Workshop

Session 7: Wednesday, August 5, 2020 | 1:00 p.m. - 2:30 p.m. ET

Key Points (as shown in the webroom)

- Vehicle-to-everything (V2X) Hub is an integral component of intelligent transportation systems.
- V2X Hub is a central core inter-protocol message translator.
- V2X Hub enables plugins that cater to the needs of connected and automated vehicle applications.
- Instructors and educators can include the V2X Hub component in the existing or future course related to Intelligent Transportation Systems (ITS), or include it in the higher-level laboratory courses for more practical experience.
- Using V2X Hub in academic curriculum allows students to understand and become acquainted with:
 - How future transportation systems supporting connected and automated vehicle applications are going to look like.
 - How messages flow in the intelligent transportation system.
 - How a Transportation Management Center and signal controllers interact with Roadside Units.
 - How vehicles enable Basic Safety Message broadcast.
 - How Roadside Units broadcast infrastructure messages like signal phase and timing wirelessly.
- Allowing V2X Hub as part of the classroom allows students to see how connected and automated vehicle applications can be deployed in real infrastructures.

Additional Notes

Part I: V2X Hub

- Is V2X Hub being used in any U.S. Department of Transportation (DOT) pilots?
 - In some ways, yes, but not the same version developed by Saxton Lab.

Part II: V2X Hub

- Using the admin portal to access V2X Hub
 - Does V2X Hub offer message storage for a specific timeframe for an application? If so, are the messages/logs stored locally?
 - We don't currently, but I don't see why we couldn't include that in the future.
 - Where should I input a virtual intersection ID or a virtual signal controller ID (for example, from PTV Vissim) in the plugin? Is it in the same fields for real intersections?
 - It will look for a source IP address. As long as there's an IP address available, it should be able to receive the messages and forward it out.
 - You mentioned that it displays error messages on the display. What kind of errors? Are these errors in not meeting a standard?
 - V2X Hub supports different levels of error reporting. We opened up all the error reporting. If you want to get deeper into the code, you can set different debug levels that lead to different error messages.
 - How much traffic can the V2X Hub handle currently? Is there a maximum limit on throughput?
 - Because V2X does a lot on the backside, we haven't done an actual test. We haven't seen issues where V2X hub can't handle scales.
- We're available for one-on-one sessions to help you better understand the things Saxton Lab is working on.

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Session summary:

- V2X Hub connects various components of the ITS network. It can be very valuable to the classroom. In the lab, it allows students to test various scenarios and run simulations.