

Connected Vehicle Standards and the Impact to Roadside Infrastructure

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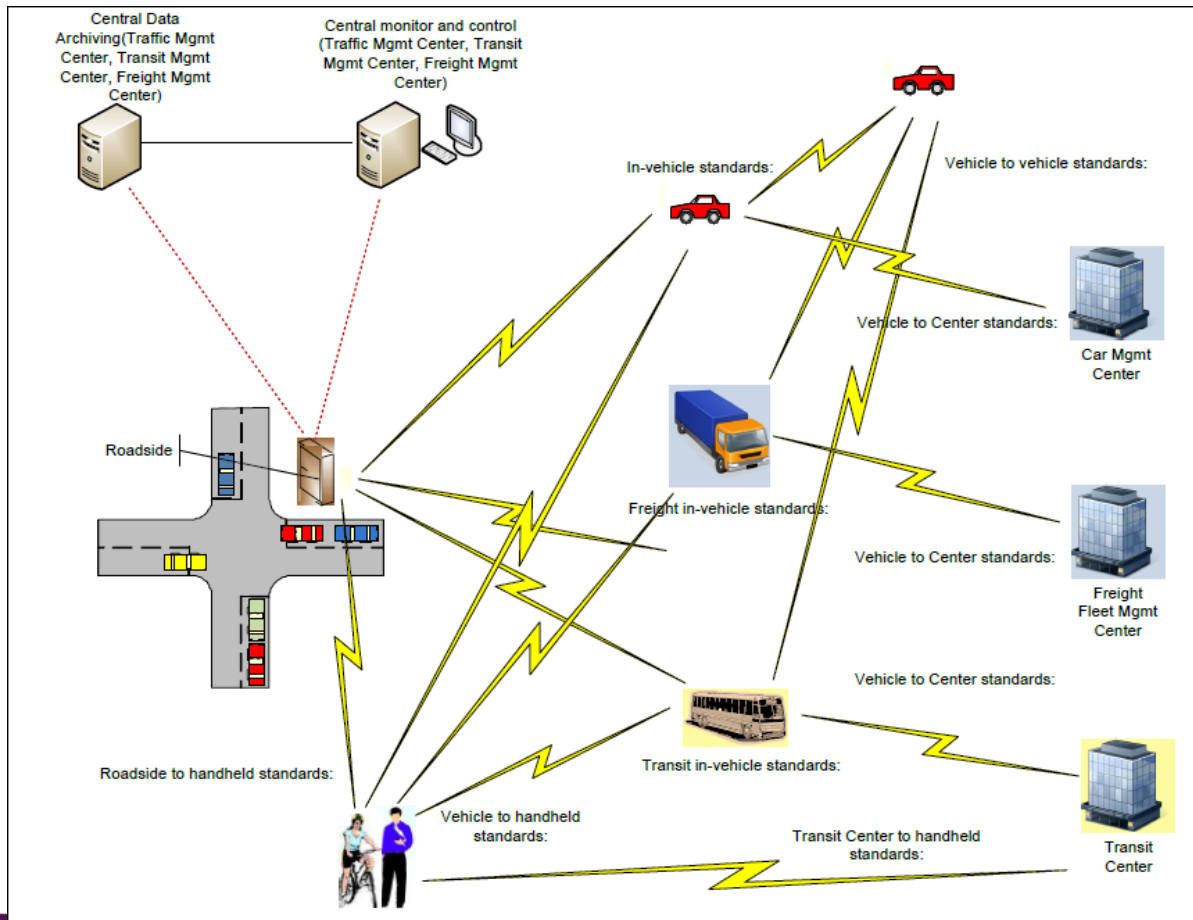
Bryan Mulligan credentials...

- **President, Intelligent Devices**
- **Chair, NEMA 3 TS**
- **NTCIP JC Member, and NEMA Head of Delegation. Test and conformity Assessment WG.**
- **ISO TC 204, US Delegate, joint author of ISI 15784-2**
- **Active in ITS Standards for 10 years**

Connected Vehicle Program...

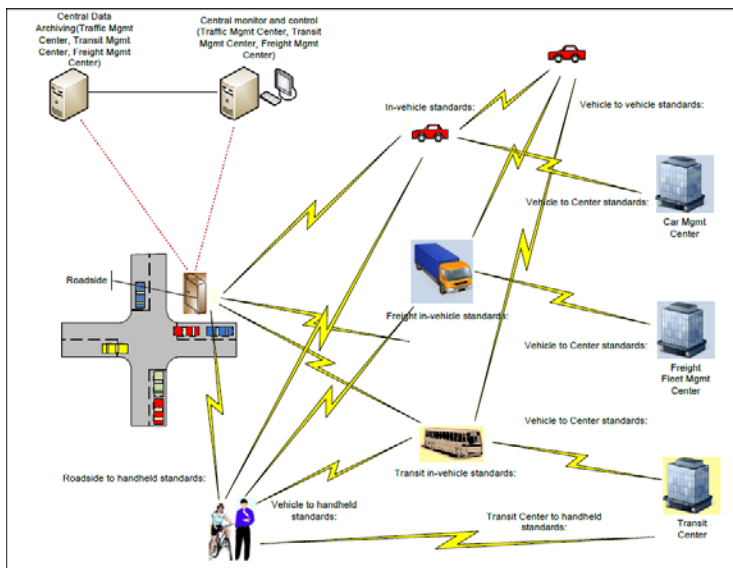
- **Vehicles talking to Vehicles - V2V - Safety, crash avoidance, information sharing... applications**
- **Vehicles talking to Infrastructure – V2I – Safety, intersection collision avoidance, optimization of traffic signals.... applications**
- **Currently in research/pilot phase – USDOT. Workshops, security, core system, etc...**
- **How are we going to build it? Roll out, funding, vehicle mandate, design, etc...**

Standards Framework... the elements



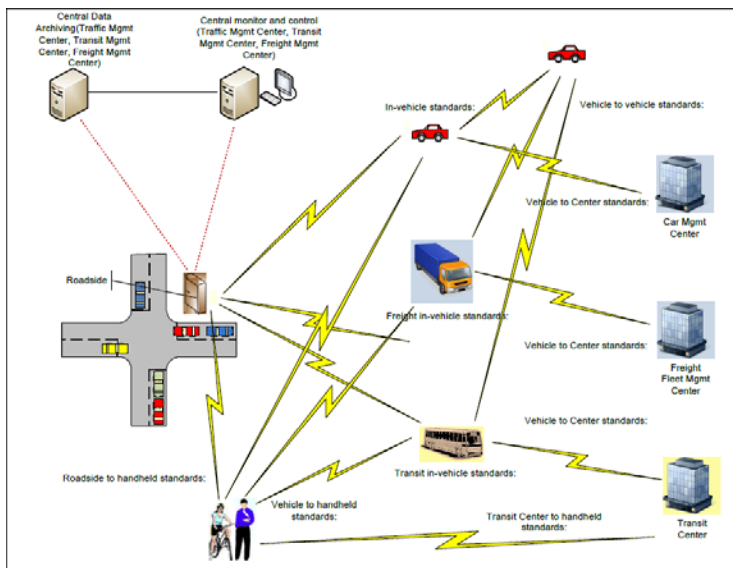
- Functions?
- Connections?
- Protocols?
- Dialogs?
- How to make sense of it all?
- Apply lessons learned from the deployment of the Internet

Lessons from Internet Deployment...



- Interface standards...
- Transmission standards...
- Payload standards...
- Standards came first, and the applications followed...
- Plausible designs needed to define the required standards, but actual designs will probably be different

Roadside Infrastructure...



- Learn about the standards as they evolve.... Participate!
- Apply standards that already exist
- ATC Standards for controllers and roadside equipment.
- NTCIP Standards
- Create institutional knowledge of how to build standards based systems.
- Avoid closed single use systems
- Apply right now.. e.g. ramp meters, HOT lanes

Thank You! (and Questions)

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