SAE's perspective on Connected Vehicle

The Fully Networked Car Workshop
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Chief Executive Officer
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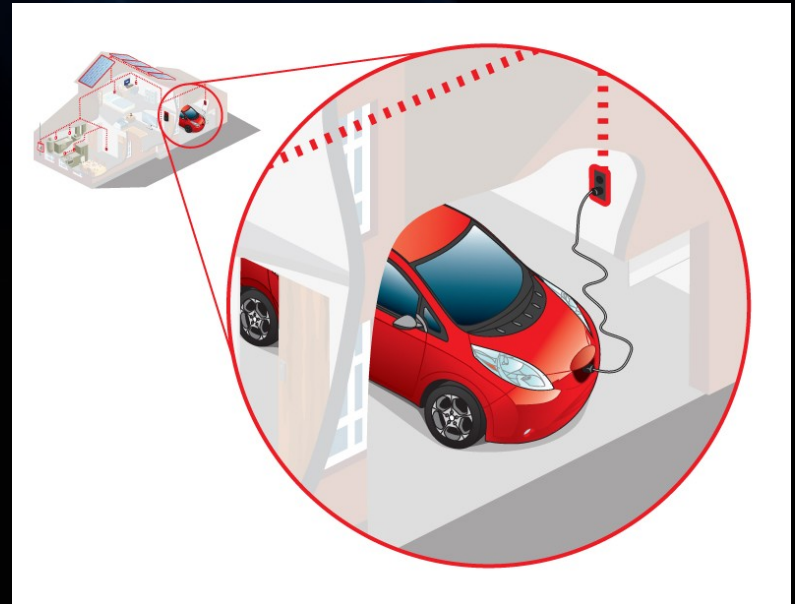# Vehicle is now connected

and a part of cooperative systems

V2V, V2I

V2G

Key standards V2V, V2I space

SAE J2735 – DSRC Message Set Dictionary

▪Supports interoperability among DSRC applications

▪Defines standardized message sets, data frames and data elements

▪Defines formats for basic safety message, emergency vehicle alert message, generic transfer message, probe vehicle data message and a common safety request message.

▪Intended for application developers, equipment manufacturers and system integrators

SAE J2945 – DSRC Minimum Performance

▪Specifies the minimum communication performance requirements of the DSRC message sets, the associated data frames and data elements defined in SAE J2735 DSRC Message Set Dictionary.

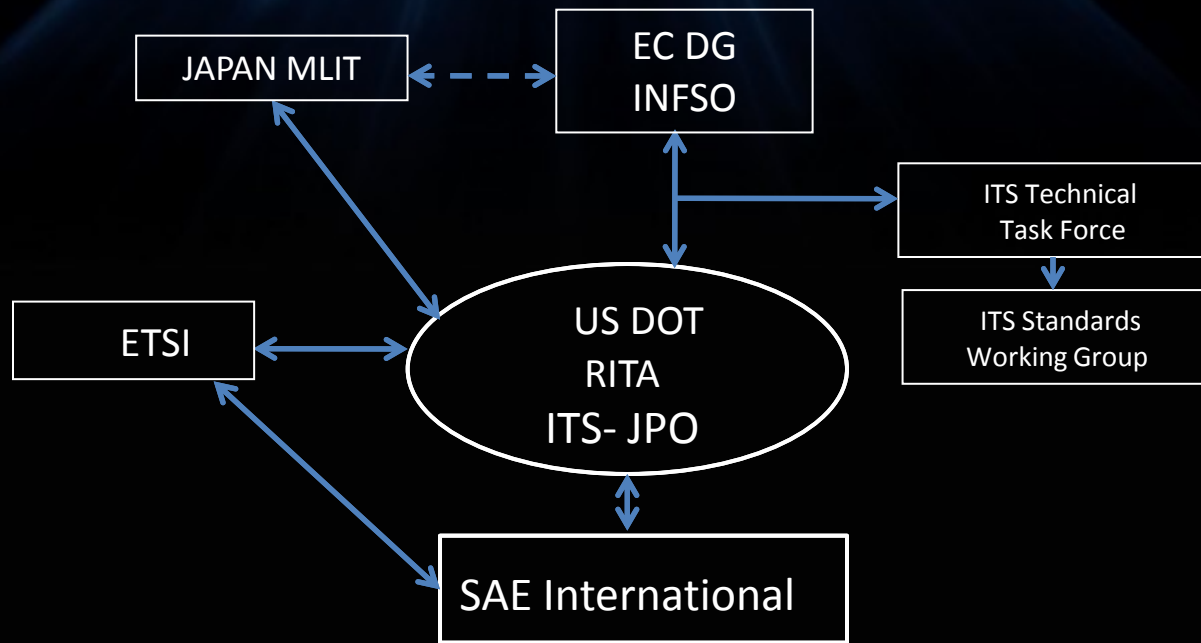▪Defines message transmission rate, channel usage, optional data usage in various situations

Cooperative Systems Standards Organizations

SAE Harmonization Roadmap

Key standards in V2G space

J2836™	General info (use cases)		J2847	Detailed info (messages)
-1	Utility programs *		-1	Utility programs *
-2	Off-board charger communications **		-2	Off-board charger communications *
-3	Reverse Energy Flow		-3	Reverse Energy Flow
-4	Diagnostics		-4	Diagnostics
-5	Customer and HAN		-5	Customer and HAN

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J2931	Protocol (Requirements)		J2953	J2953– Interoperability
-1	General Requirements *		-1	General Requirements
-2	In-Band Signaling (control Pilot) *		-2	Testing and Certification
-3	PLC over mains *			
-4	Wireless (TBD)			

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Harmonization in V2G space
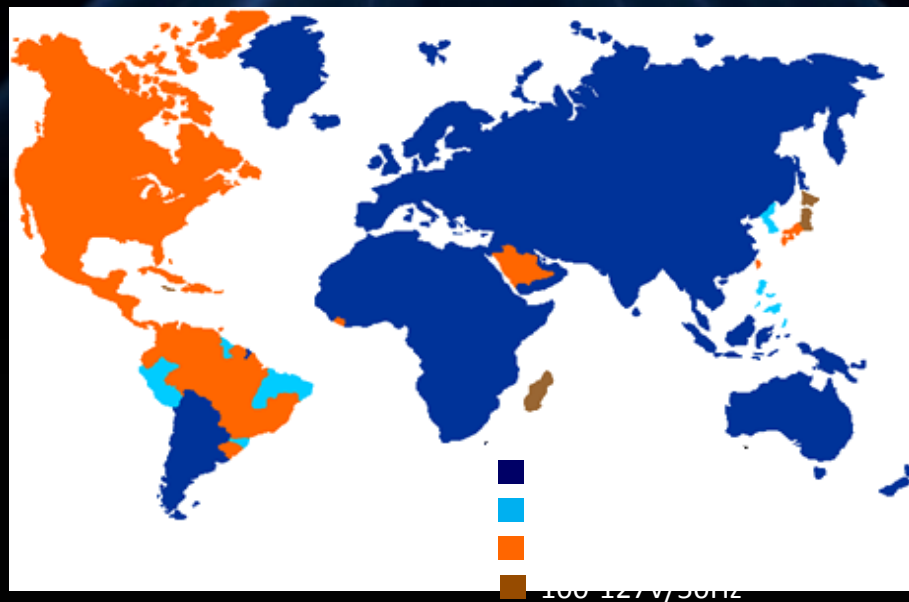
- Not every country has the same electrical system

- Charging needs differ for vehicle type (PEV/PHEV)

- Charging needs differ for charging locations

Summary

- SAE's position on harmonization:
  - Reduces cost
  - Improves products' quality
  - Increases consumer confidence
- Automotive industry is involved in SAE International standardization process
- SAE is focusing on updating of critical standards
- SAE activities aligned with US Department of Transportation's strategy in V2V and V2I
- SAE International identified as a leading standards organization identified in NIST Framework and Roadmap for Smart Grid Interoperability Standards
- SAE activities in V2G are harmonized with ISO and IEC work

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