Is it time to discuss a common language to describe data and function interaction between all automotive technology companies?

Is it time to commit to selected technologies, including open W3C protocols, to build interoperable solutions for vehicle data and service invocation?

Is it finally time to define the industry-wide standard vehicle data model ... and then do the same for service APIs?

OEMs, automotive tier suppliers, data-oriented companies and large technology/cloud providers tell us, “Yes”
The Common Vehicle Interface Initiative

The initiative was started in 2020 by GENIVI and W3C to unify trends, interests, and several ongoing projects. Common intentions among such projects are:

- Develop an effective foundation for the future vehicle-data driven architectures
- Increase definition of industry-shared interfaces in the shape of service APIs and common data definitions
- Set technology standards to reduce fragmentation and system complexity
- Reduce development efforts that result purely from technology and requirements fragmentation across automotive OEMs and large parts of the automotive industry

Before CVII there was no real concerted effort to achieve communication between organizations and consortia, each building conflicting pieces of this vision!
Required steps to reach the vision

- **Compare and unify** any and all activities that define **data models** and **service/interface description models**
- Compare and root out **duplication** and **overlap** in catalogs of data
- Create an **organized approach** to defining **standard service interfaces** for Service Oriented Architecture (SOA)
- Plan for **innovation** and **extension of functionality**, while still defending **against fragmentation** of fundamental technologies.
- Establish projects to develop a **robust Technology Stack**, which carries the agreed upon data and service/interface invocations (on **multiple** platforms)
- Promote full scale adoption of **open standards**
- Use the **same formats & technology** in a wide part of the entire system (i.e in-vehicle systems, vehicle-edge, and backend cloud systems)
- Influence regulation/legislation --> must be based on **industry-led practical standards**
CVII : Coordination across standards bodies

ASAM/ODX
a data model for the description of diagnostics capabilities of ECUs needed throughout the lifecycle of a vehicle

ISO(SAE) 20078 20077
Extended Vehicle Standard & DIS.

AUTOSAR
Classic AUTOSAR
Adaptive AUTOSAR

SENSORIS
towards a standardized interface specification to be used broadly across the automotive industry

eSync
Software-over-the-air

JASPAR
Dynamic Vehicle Information Sharing API Specifications
Common Vehicle Information and Data Set Specifications

CATENA-X
a uniform standard for data exchange along the entire automotive value chain.

W3C
GENIVI
CVII
CVII - Common Vehicle Interface Initiative

Alignment Outreach

ISO/IEC JTC1 SC41
Internet of things and digital twins

DTC
Digital Twin Consortium Missing Automotive WG

ISO/IEC JTC1 WG11
Smart Cities

ISO TC 204
Intelligent Transport Systems

OPIN
Open insurance network

GAIA-X
next generation of a European data infrastructure

EATA
European Automotive & Telecom Alliance

ITU
Focus Group Vehicular Multimedia

CATENA-X
a uniform standard for data exchange along the entire automotive value chain.

JASPAR
Dynamic Vehicle Information Sharing API Specifications
Common Vehicle Information and Data Set Specifications

INTERNATIONAL & VEHICLE

INTERNATIONAL & TELECOM

INTERNATIONAL & INDUSTRY
CVII – Organization of current activities

**Initiative**

**Tracks**

**Technology Stack**
- Communication
  - VISS v2 Protocol Development WG (W3C)
- Architecture/Communication
  - Cloud & Connected Services (CCS) Project End-to-End Communication Framework WG (GENIVI)
- Android AASIG VHAL Project (GENIVI)

**Activities & Projects**
- Scoping and Planning
  - CVII General Tech Stack WG (GENIVI/W3C)
- Communication
  - RPC Protocol Development (W3C)
- Model/Catalog
  - Vehicle Signal Specification (VSS) WG (GENIVI)
  - Vehicle Service Catalog (VSC) (GENIVI)
- Model/Catalog
  - VSS Ontology (VSSo) WG (W3C)
- Model/Catalog
  - (preparation 2019) Cloud & Connected Services / Vehicle Data Model WG

**Alignment-Track**: Industry Outreach
- Sensoris
- ISO ExVe
- AUTOSAR
- Open Insurance Initiative
- GAIA-X

**Data**
- (meta-)model and standard catalogs

**Services**
- (meta-)model and standard catalogs
- \[\text{details TBD}\] subprojects. Full or partial-stack development

**Full or partial-stack development**

**Guiding best practices**
- Vehicle applications
- Best Practices (W3C)
- → Guiding best practices
- ← Influencing

**Best Practices**
- Guiding best practices

**Services & Projects**
- Streamlining and best practices:
  - Industry Outreach initiatives:
    - Sensoris
    - ISO ExVe
    - AUTOSAR
    - Open Insurance Initiative
    - GAIA-X
  - Data (meta-)model and standard catalogs
  - Services (meta-)model and standard catalogs
  - Full or partial-stack development
  - Architecture/Communication
  - Cloud & Connected Services (CCS) Project End-to-End Communication Framework WG (GENIVI)
  - Android AASIG VHAL Project (GENIVI)
Deliverables from agreed-upon standards
Common Vehicle Interface Initiative
- How to Contribute

- Persuade Alliances, Consortia and SDOs your company is involved with to coordinate with CVII
- Contribute to data and service definitions in Vehicle Signals and Service Catalogs (VSS and VSC)
- Provide inputs for VSSo (ontology) and multi-domain integration (smart cities, IoT, digital twins, insurance, etc.)
- Evaluate and contribute to software architecture & Technology Stack components
- Contribute use cases and accompanying tests
- Join GENIVI and W3C organizations and contribute your perspective and expertise
- Join other automotive manufacturers and stakeholders in starting to adopt VSS now where appropriate and based on your current priorities
- You can start today to join the open discussions
Thank you!

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