ALL MEMBER MEETING '21

# Common Vehicle Interface Initiative Session 1

Overview and specifications

October 06 2021

# Common Vehicle Interface Initiative
# Today's Agendas

- **CVII Session 1 - Overview and Specification topics**
- **CVII Session 2 – Technology Stack (implementation)**
- **CVII Session 3 - Alignment and Adoption**

*Each 45 minute slot today carries a main theme*

*Each slot has multiple presentations on related topics, and some limited time for Q&A*

# CVII Session 1

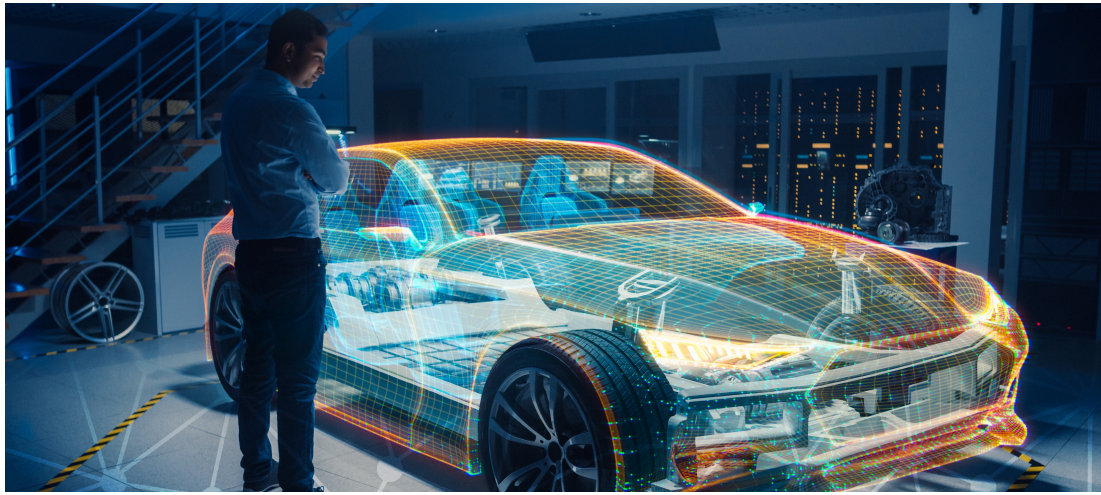
## Overview and Specification

- **State of the initiative, overview and some introduction**
  Gunnar Andersson, GENIVI
- **Latest development in VSS**
  Erik Jägervall, Bosch
- **VSSo (ontology model) intro - when to use VSS and VSSo**
  Daniel Wilms, BMW

# CVII Session 2

## Technology Stack (implementation)

- **Overview** of ongoing and planned tech-stack components
  Gunnar Andersson, GENIVI
- **VSC: The potential for a common services language and the vehicle-service-catalog**
  Gunnar Andersson, GENIVI
  Magnus Feuer, Feuerworks
- **Why vehicles need an event-driven platform**
  Thomas Spreckley, Bosch



# CVII Session 3

## Alignment and Adoption

- **Introduction and update – alignment track**
- **eSync Alliance**:
  Applying VSS formats to gathering OTA metrics
  Mark Singer, Excelfore
- **Open Insurance (OPIN):**
  VSS supports the Decentralisation of Insurance
  Neil Walker, Covea

**Please put your questions into chat box *at any time***
**– we may get to them when there is some free time available**

CVII has continuous activities within several subprojects, and not every aspect will be covered today.  There will be *limited* introductions.
If you are new to the initiative, feel free to ask questions,
refer to references and reach out for a more in-depth introduction.

# References

- **Common Vehicle Interface Initiative Home Page**
  - Easily found from the front page of the COVESA Wiki
  - Latest documents, presentations for review
  - List of related meetings and links to other organizations activities

- For more information and time to ask questions, join the weekly meetings of CVII-Tech-Stack, VSS, VSC, CCS, AASIG, W3C automotive working group, and many others according to your particular interest

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# CVII – Introduction and overview

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# CVII State of activities – Highlights
*(Data model specification)*

- **VSS project active and healthy**
  - Minor-release (v2.2) ready to go including latest changes
  - Flexibility in datatype and units definition discussed and resolved
  - Some fundamental improvements/changes, possibly a “v3” of the VSS model?
- Higher-level discussions about reaching the CVII goal are not closed!
  - Not only is “VSS” an open project, the initiative is open for input on what *“the industry-common data model”* should look like or even how it ought to be named.
  - Alignment outreach still there and progressing

# CVII State of activities – Highlights
## *(Tech Stack Development)*

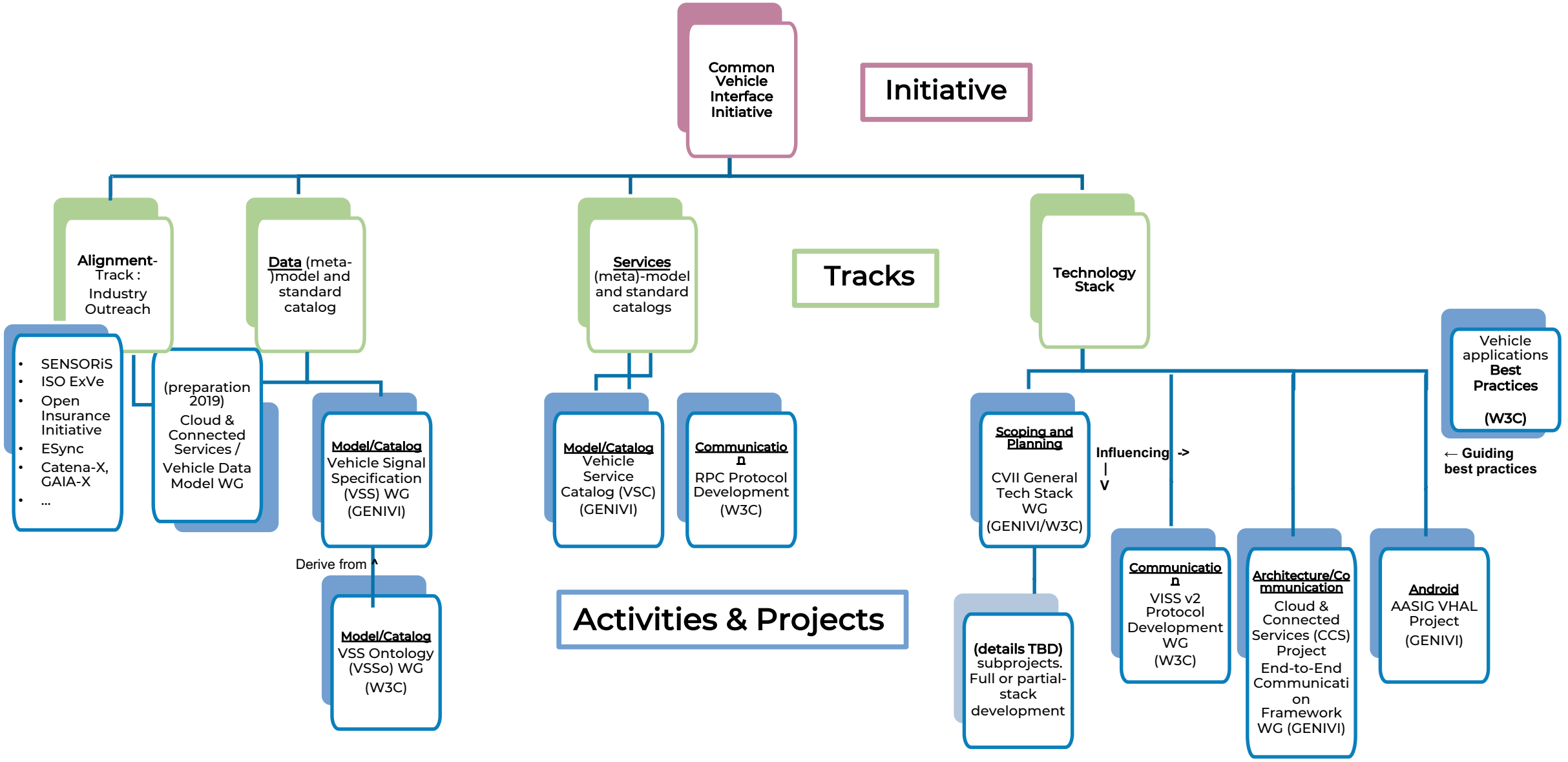
- Ongoing: Efficient **binary serialization**, reusing well-known technologies (Protobuf, AVRO)
- **W3C VISS v2** specification entered public working draft status
- Concept ready to connect (any) VSS-based in-vehicle data sources to the vehicle properties defined in **Android Automotive:**
  - **Template-driven code-generator** to automate this translation is under development. *(See more in this week's AASIG-Vehicle HAL workshop)*
- **Vehicle software frameworks** that chose VSS as the default way to communicate data are being developed and expanded.
  - E.g. Bosch IoT-event-analytics and related projects.
  - E.g. Renesas-EPAM AOS

# CVII State of activities – Highlights
(Outreach, Adoption and Alignment)

- Fruitful discussions with ISO TC22/SC31/WG6 (Extended Vehicle), and OEM-specific data groups
- Liaisons create input to core definitions,
  e.g. eSync Alliance -> new VSS signal proposals (EV / batteries, SOTA)
- ACM conference research paper suggests hierarchical Named Data Networking for in-vehicle networks – shows how to use VSS for direct signal addressing on the network [1]
- We hear of various VSS-supporting company projects for demonstration, investigation/research, or production purposes that are not publicly stated

[1] https://dl.acm.org/doi/pdf/10.1145/3460417.3483374

# CVII – Organization of current activities



# CVII = Coordination across standards bodies!

**International & Vehicle**

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

Liaison established

Liaison to establish

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

**International & Telecom**

- **EATA** — European Automotive & Telecom Alliance
- **ITU** — Focus Group Vehicular Multimedia

- **CVII** — **CVII - Common Vehicle Interface Initiative**

*Alignment Outreach*

**National & Vehicle**

- **JASPAR** — Dynamic Vehicle Information Sharing API Specifications, Common Vehicle Information and Data Set Specifications
- **W3C**
- **COVESA**
- **ECLIPSE** — Foundation

**International & Industry**

- **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

# “CVII is different”

- Overarching goal above all individual projects:
  - Achieve the industry-common alignment around how to transfer data (and services) through a common data (and service) model.
- Explicit alignment outreach to all related parties and stakeholders

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# VSS – Latest development

Erik Jägervall, Bosch

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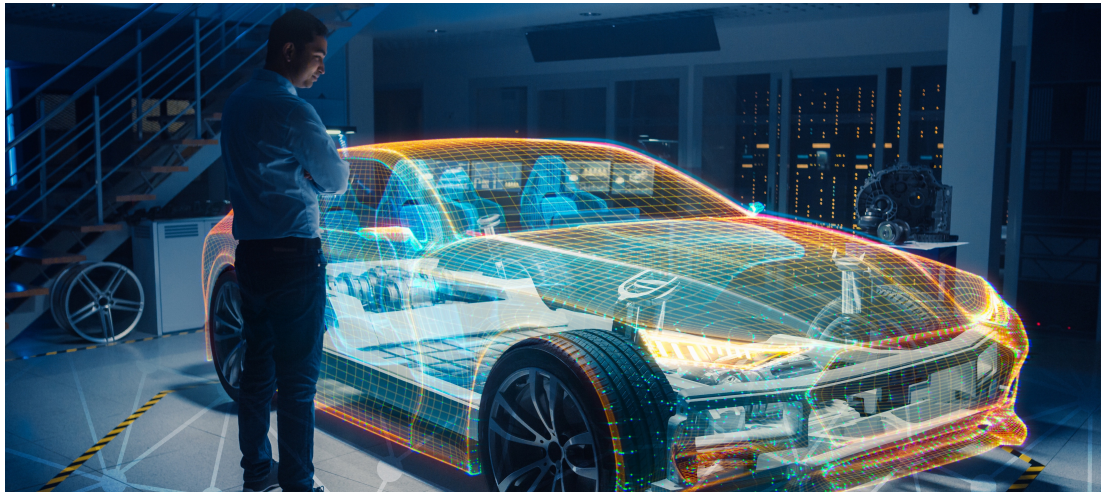
# Vehicle Signal Specification Status Update

**Signal Catalog relatively mature, only minor changes**

- A few signals added, e.g. EngineOilLevel and DistanceToService
- Change of datatypes for some signals from int to float
- Some signals changed from ”sensors” to ”actuators”
- V2.2 to be released

**Continued development of VSS-Tooling**

- New tools generate GraphQL schema & Protobuf
- Ongoing discussions on how to support user-defined datatypes and units in VSS and VSS-Tools
- Improved CI automation, unit-tests, some quality improvements and code refactoring



# Vehicle Signal Specification – outlook

- Finalizing the flexible usage of units opens up for more guidelines on how to use the VSS standard catalog, and potential proprietary additional catalogs
- Better documentation/clarification of VSS-layers expected
  - Already used in practice -> better documentation is needed
- Some fundamental future change questions have been opened,
  e.g. possibly redesign and improve ability to model structured data.
  - … if it becomes a major change, a version 3 of model/rules is expected
  - … significantly impacted by discussion of VSC services description language (since it likely needs to refer to VSS signals, and is already expected to support a full data-modelling language)

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## NEXT: VSSo and VSS development

When to use which, etc.

Daniel Wilms, BMW

(separate powerpoint file)