



Governance of the Software-Defined Vehicle of the Future (SDVoF) Initiative

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The SDVoF initiative, a collaborative effort between the European Commission, public authorities from participating states (such as Chips-JU), and industry stakeholders, aims to address challenges in the global software defined vehicle market. Let's delve into the key aspects of its governance: The SDV Sherpa governance group acts as the "steering board" for the initiative. It provides direction, vision, and validates roadmaps. C-level (CTO, EVO, SDV area manager, ...) representatives from industrial stakeholders guide the group's decisions.

The Sherpa governance group develops guiding principles (such as for open source, code-first or collaboration in the non-differentiating SW platform for SDV) for the SDVoF vision and roadmaps. It oversees the coordination and support project FEDERATE.

The close and aligned collaboration with the industry initiatives on SDV as ECLIPSE-SDV, Autosar, COVESA, SOAFEE and relevant research programs as CCAM and 2Zero is essential to the Sherpa governance group (SGG). Most of the members of the SGG are also very active in these important industry initiatives. This is essential for the fast and agile creation of the building blocks for

the open SDV SW platform.

The Sherpa governance group meets around four times a year and ensures acceptance and support for the SDVoF initiative at the executive management level within companies.

During the recent virtual Sherpa Governance group meeting the different SDV initiatives reported their status, progress and planned next steps. As part of these reviews, the initiatives and projects received important feedback in order to work together towards the vision described in the SDVoF vision and roadmap. Furthermore, the Automotive industry association presented the manifesto signed by twelve representatives of the European industry at CEO/CTO/SVP level, announcing their cooperation in the creation of the open SD-VoF SW platform. The manifesto will soon be handed over to the Commissioner of the European Commission.

In summary, the SDVoF initiative, headed by the SDV-SGG, aims to foster collaboration, innovation, and competitiveness in the European SDV landscape.



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What's new?

FEDERATE GitHub Repository!

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One of the main objectives of FEDERATE is to prepare and maintain a roadmap for non-differentiating software Building Blocks for the SDV of the future. This requires three things:

- ✓ a terminology to describe Building Blocks in a neutral yet effective way,
- ✓ a structure to categorize and order this information, and
- ✓ tools to support the continuous and effective collection, refinement and discussion of the Building Blocks

The following is a brief introduction to FEDERATE's solution for satisfying the above needs, how to access it and how to use it for work in the SDVoF initiative.

❖ Terminology

The SDVoF initiative focusses on three main areas of software:

(i) in the car (often called in-vehicle stack), (ii) in the cloud (referring to software off-board, interacting with the car's software), and (iii) software in the engineering tool chains used to develop, validate and

maintain vehicles (typically on OEM and tier level). To support the development of software for SDV, one of the main tasks of FEDERATE'S work-package 2 is the creation and maintenance of a glossary, that describes the technical terms used in the SDV context, and their relationship to synonyms. The glossary serves also as entry point for collecting Building Blocks (BBs), Enablers and Definitions which are relevant to SDV.

BBs, Enablers and Definitions are used to/ help to develop, verify or validate, to operate, support and maintain Software Components, Tools, or Processes during the whole vehicle life cycle and afterwards.

BBs are defined as executable code, or a usable library in the vehicle itself or in the cloud or in the development environment. Additionally, interfaces and application programming interfaces (APIs), which need to be implemented by specific components, as well as certain digital contents being part of an SDV, and even standards being implemented in the SDV can be seen as BB's. To provide flexibility, a BB itself might be built from other BB's.

❖ Structure and categorization

Next, structure and categorization is needed that allow delineation of BBs, but also to signpost relations to other BBs.

It also helps to develop a better understanding of the individual BBs and to obtain interfaces and external requirements. The structure consists of 4 levels.

Level 1 (topmost): Is the BB part of the in-vehicle stack, off-vehicle, or toolchain? Based on these three main areas, and extended by a few sub-areas, the following Tags were defined:

Tag	Description
BB-SC	Building Block Stack Component (In-Vehicle / On-Board)
BB-CSC	Building Block Cloud Stack Component (Cloud / Off-Board)
BB-MU	Building Block Mock-up Unit (In-Vehicle / On-Board Component)
BB-CMU	Block Cloud Mock-up Unit (Cloud / Off-Board Component)
BB-EST	Building Block Engineering & Support Tools (for In-Vehicle / On-Board Components)
BB-CEST	Building Block Cloud Engineering & Support Tools (for Cloud / Off-Board Components)
S-BB	Supporting Building Blocks (Standards, API & Interface Definitions, standardized Data Model)
FC	Functional Cluster – Logical group of technically similar BBs
BB-SC-TC	Building Block Stack Component tool chain (contains compatible set of Engineering & Support Tools and Mock-up Units for In-Vehicle dev)
BB-CSC-TC	Building Block Cloud Stack Component tool chain (contains compatible set of Engineering & Support Tools and Mock-up Units for Cloud dev)
BB-WE	Whatever Tag / White card (needed for future extension)

As it turns out, there might be BBs (for example software libraries) which are designed to run in multiple areas, e.g. handling one flow of information both in the car and in the cloud. Therefore, a BB might have multiple tags attached. The first of these, however, denotes the primary use and therefore its position in the glossary and GitHub repository described below.

Level 2 is determined by the software layer as defined in the vision and roadmap document see Figure 1. For the in-vehicle stack the layers are: AppLayer, MWLayer, OSLayer, and HWLayer

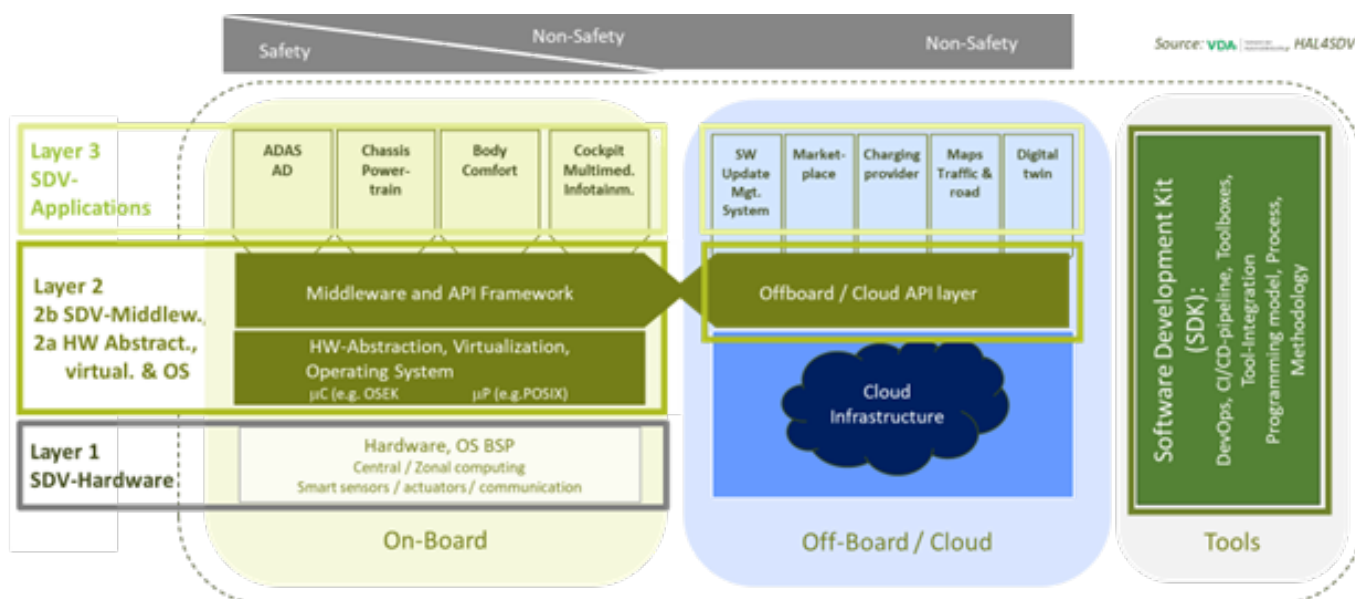


Figure 1: Basic structure of SDVoF HW/SW stack, from the European Software-Defined Vehicle of the Future (SDVoF) Initiative – Vision and Roadmap paper.

Level 3 is determined by the functional cluster to which the BB belongs. The term functional cluster comes from AUTOSAR Adaptive. It is described as combining several functions (F) or function groups (FG) into a logical structure unit. Examples include Communication, Diagnostics, Platform Health Management, Security etc.

Level 4 finally holds the details of the respective BB.

- ❖ Tools to support continuous and effective collection, refinement and discussion

It became quite clear that collecting, refining and describing BB's is an iterative process. FEDERATE wants to foster and engage a

vibrant SDV community in Europe, taking part in this process. A git repository was therefore considered a suitable environment (repository, discussion forums, issue tickets, wiki etc) for hosting processes and information.

FEDERATE has therefore created <https://github.com/CSA-FEDERATE>

Read access is public, write access is given to a group of experts within the FEDERATE consortium who manage the content and moderate the process. The structure described above was implemented as folder hierarchy in GitHub, see Figure 2: Main Structure of the FEDERATE GitHub Repository

```

├── BB-SC # primary tag
│   ├── readme.md
│   └── AppLayer # layer (AppLayer, MWLayer, OSLayer, HWLayer)
│       ├── readme.md
│       └── Communication # functional cluster name
│           ├── BB_AOSP_Push_Notification_Service.md # BB - if it is in >1 FC or tag, put symlink
│           └── BB_OTA_Manager # folder if more than a .md file exists for BB
│               ├── BB_AOSP_Push_Notification_Service.md # BB if it is in >1 FC or tag, put symlink
│               └── BB_AOSP_Push_Notification_Service.xml

```

Figure 2: Main Structure of the FEDERATE GitHub Repository

As expected, descriptions of BB's are found on Level 4, usually in markdown (MD) files allowing smooth formatting of simple text files. These text files follow a standard template with fields like

- ID (unique name)
- Description
- Rationale
- Governance Applicable S-BB(s) (standardized by)
- Compose BB(s)
- What is needed to Design and Implement etc.

GitHub provides established ways to discuss and refine content generally accepted in the developer community, which include collaborative reviews, issue tracking, and pull requests. These features facilitate communication, quality improvement, and community-driven development.

Please visit

<https://github.com/CSA-FEDERATE/Proposed-BuildingBlocks>

Engage in the European SDV of the future initiative!

FEDERATE activities on the upcoming EARPA autumn meeting in Brussels

Authors: Ole Großmann (VDI/VDE Innovation + Technik GmbH),
Horst Pflügl (AVL List GmbH)

The FEDERATE project will actively contribute to the next EARPA autumn meeting, which will take place from 30th September till 1st October 2024 in Brussels.

EARPA (European Automotive Research Partners Association) brings together the most prominent independent European R&D providers in the automotive sector. The association enables organisations to actively contribute to the European Research Area and the future EU research and technological development funding programmes. Its mission is to promote awareness and understanding of the specific role and contribution of R&D providers in the automotive sector and reinforce the high-tech character of the automotive industry as well as its potential for future innovation and new opportunities. EARPA currently has 61 members ranging from large and small commercial organisations to national institutes and universities.

The FEDERATE project and its role in the Software Defined Vehicle of the Future (SDVoF) initiative has been introduced at the last EARPA spring meeting on 5th and 6th March 2024. **The upcoming EARPA autumn meeting will cover the focus topic “Adoption of AI and Software Defined Vehicles” among others on the 30th September.**

FEDERATE will present the Vision & Roadmap of the SDVoF initiative (you can find it here: [European SDVoF Initiative - Vision and Roadmap](#)), which has been worked out within the project. In addition, the meaning of the open-source approach and the importance of future business models will be discussed with experts from the automotive industry, the open-source community and research institutes. Addressing these topics, the discussion should help to identify promising ways to keep the European industry competitive.

Interested stakeholders can register for the event under the following link: <https://earpa.idloom.events/EARPA-Autumn-Meeting-2024>

Automotive Open-Source Summit at Starnberg in May 2024 - bringing Open-Source step by step forward!

Author: Gunther Bauer, ZF Group, Software Defined Vehicle (DISDS),
Corporate Research and Development

The Eclipse SDV Automotive Open-Source Summit took place on 14th of May in Starnberg, Germany. It was a premier event that focused on the adoption of open-source methodologies in the auto-motive industry. It emphasized a code-first and community-driven approach to foster innovation. The summit brought together industry experts and professionals to engage in meaningful discussions about the latest advancements in automotive-grade open-source software. The event provided a platform for participants to gain valuable insights into the evolving landscape of technologies and challenges in the automotive software development. It also offered excellent networking opportunities. The summit aimed to drive the automotive industry into a new era of software-defined excellence through collaboration and innovation.

The Automotive Open-Source Summit 2024 began with opening remarks by *Michael Plagge* (VP, Ecosystem development, Eclipse Foundation). *Sarah Novotny* (Executive leader in Open Source, Cloud Computing, Infrastructure automation, data) covered building successful business cases on Open Source on the example of Kubernetes, providing practical advice for organizations looking to leverage open source for business growth. The following presentation featured the EU initiative “Vehicle of the Future” by *Max Lemke* (Head of IoT, European Commission), exploring the potential transformations in the automotive industry and the support by the EU funded SDV projects, highlighting the role of open source in the European Union’s software-defined vehicle initiatives. This was followed by a presentation on the Software Defined Vehicle by *Johan Linaker* (Senior Researcher, RISE Research Institutes of Sweden and Lund University), which provided insights into the future of vehicle

technology from the research perspective. *Michael Plagge* also presented a status update on the Eclipse SDV working group showing achievements and challenges and latest discussions around the SDV ecosystem. Furthermore, *Ansgar Lindwedel* (Software Defined Vehicle Ecosystem Development, ETAS) presented the commitment of OEM’s and Tier-1 to develop the SDV core stack for automotive grade usage within Eclipse SDV and *Martin Schleicher* shared the Automotive OSS Vision Paper, outlining the strategic direction for open-source software in the automotive industry and explained the planned collaboration on automotive grade open-source standards. Finally, *Sara Galian* (SDV Program Manager, Eclipse Foundation) presented on Eclipse SDV: Eclipse Blueprints, showcasing the work of the Eclipse Foundation in the field of software-defined vehicles. Besides all the inspiring presentations, there were three interesting panel discussions on different aspects of open source starting with the drivers to use open source, roles and responsibilities in an open-source supply chain and on the non-differentiating parts of the software stack.

The event concluded with closing remarks from the Eclipse Foundation, wrapping up a day of insightful discussions and presentations. Participants were able to collect in meaningful discussions the latest advancements in automotive-grade open-source software, established connections with like-minded professionals and gained valuable insights into the evolving technologies and challenges in automotive software development.

All in all, it was a great event bringing together decision makers of the automotive industry showing that automotive industry is pushing collaboration in open-source ecosystems to gain more efficiency, speed up development and reduce development costs!

FEDERATE presented at 15th AUTOSAR Open Conference on 11th June in Tokyo, Japan



“Global Software Solutions for Future Mobility Challenges” was the main theme of the 15th AOC, which took place in Tokyo in mid-June 2024. The record number of participants underlined its global significance. The core question was: How will the automotive industry face the future of SDV? At the invitation of AUTOSAR, FEDERATE presented the European SDVoF initiative and took part in an interesting panel discussion in front of a full auditorium together with representatives of software initiatives such as Eclipse, COVESA, SOAFEE, as well as representatives of the global markets in China

and USA. The perfect organisation and the beautifully situated event location created a pleasant atmosphere for several interesting discussions and further presentations” – says Peter Priller from AVL List GmbH, who has presented FEDERATE at the event.



REGISTRATION for the FEDERATE Networking Event on 23rd September is ACTIVE now!

Click below to go to the registration form

[REGISTRATION FORM](#)

Preliminary Agenda

Introduction of the European Software-Defined Vehicle of the Future initiative, FEDERATE, HAL4SDV Presentations of SDV projects and SDV initiative Motivation of the European Commission Interactive sessions (topics: stack, cloud, toolchain)

Networking

The final agenda will be shared with you closer to the event date.

Speakers from:

FEDERATE, HAL4SDV, SOAFEE, COVESA, AUTOSAR, ECLIPSE SDV, CCAM,2ZERO

This event will take place in conjunction with the “The Autonomous 2024 Main Event” which will be held on the 24th September 2024 in Vienna, Austria.

Participants of the FEDERATE Networking Event will get a discount code for the tickets of “The Autonomous 2024 Main Event” along with the registration confirmation.

Registration for “**The Autonomous 2024 Main Event**” on the 24th September 2024 needs to be done separately ([Get tickets here](#)).

We are happy to invite you to register for the upcoming

FEDERATE Networking Event on 23rd September 2024!

Don't miss to register!
It is free of charge!
Last Registration Day
August 30th, 2024

SAVE THE DATE for the OCX24 in October 2024



OPEN COMMUNITY
FOR AUTOMOTIVE

OCX 2024

AGENDA is already available!

22 - 24 October 2024
Mainz, Germany

OCA – Open Community for Automotive in collaboration with Eclipse Foundation @OCX24
22nd – 24th October 2024 in Mainz, Germany **Registration is open!**

Driving innovation - just as it's in our code,
it's at the core of Open Community for Automotive.

Witness the future of automotive software fuelled by open source's transformative power, we'll push boundaries, explore beyond limitations, and redefine the connected car landscape. Collaborate with fellow innovators, thought leaders, and developers actively shaping the future of open source automotive software and redefining the connected vehicle landscape.

OTHER Upcoming Events with FEDERATE participation

ELIV – VDI Kongress, Bonn, Germany (16-17 Oct 2024) ELIV Programm
SIA CESA, Versailles, France (12-13 Feb 2025)