



Vision of the SDV of the future

The open European software-defined vehicle of the future (SDVoF) ecosystem is a strategic initiative driven by EU automotive manufacturers and suppliers and supported by the European Commission. It builds on recent European digital and industrial policy initiatives like the Chips Act, the Data Act, or the Cyber Resilience Act. The pre-competitive SDVoF collaboration on non-differentiating elements of the vehicle software stack aims at reinforcing the industry's competitiveness and innovation leadership, preserve its sovereignty, and help use financial and human resources more efficiently.

The joint effort supports the development of standardised software building blocks and interfaces inside and outside the vehicle, addressing hardware abstraction and APIs, accompanied by software and validation toolsets. With open-source software as a key enabler, the collaboration should lead to a change of mindset and build a thriving ecosystem. It will build on existing alliances and initiatives and is closely coordinated with European efforts on a RISC-V automotive hardware platform for the Vehicle of the Future.

The SDVoF ecosystem is led by a Sherpa Governance Group defining its direction and key decisions. FEDERATE plays a key role, supporting the initiative's governance, preparing draft roadmaps, helping coordinate activities across initiatives and partnerships like the Chips JU, CCAM and 2ZERO Partnerships, orchestrating building blocks from projects and supporting the development of a vibrant ecosystem.

The technical design and implementation of SDVoF is done through collaborative R&I projects or open-source software initiatives. In 2023-2024, the investment in the vehicle of the future ecosystem under EU Partnerships, largely the Chips JU, represents a total of €250 million by the EU, Member States and industry.

In addition to the launch of FEDERATE, recent milestones include the start of the contracting phase for a first R&I project focusing on hardware abstraction and the preparation of new topics for 2024. The latest meetings of the Sherpa Governance Group in July, October and December 2023 led to significant progress in defining the initiative's scope and principles and use cases showing its value. Key next steps include defining a technology and investment roadmap which goes beyond the steps taken in 2023 and 2024.

*This text has been contributed by Max Lemke and Kristof Almasy,
European Commission - DG CONNECT*

Software Defined Vehicle – a future technology trend for highly automated and connected vehicles

One of such strategic initiative besides the FEDERATE project is the HAL4SDV KDT-JU proposal, which entered Grant Agreement Preparation (GAP) phase.

The automotive industry is a jewel of the European economy. For decades, the industry has been an important contributor to Europe's economic growth, innovation, and prosperity, accounting for more than €1 trillion or almost 7 percent of the region's GDP. The industry is directly or indirectly responsible for employing 13.8 million people accounting to 6.1 percent of total EU employment.

Supporting various technology initiatives for research and development activities already conducted on national and corporate levels, the European Commission has launched a dedicated call based on the 2023 KDT-Joint Undertaking Work Program "Call-2023-2-RIA- Topic 2: Focus on Hardware abstraction layer for a European Vehicle Operating System". Worldwide trends in the automotive industry point towards defining new vehicles by extending functionality of future cars by "over the air software uploads and updates", a technology currently known as "software defined vehicle". The aim of the complex research and development activities is to result in a software platform and system enabling such a novel approach, bringing about a paradigm shift in business models by moving the added value from the sale of complete vehicles to software upgrades for vehicles in the field.

The TTTech Computertechnik AG coordinated proposal "HAL4SDV" (Hardware Abstraction Layer for Software Defined Vehicles) in reply to this KDT-JU call has been selected for allocation of funding and is now in the status of Grant Agreement Preparation (GAP). The project endeavors forming a dedicated European ecosystem of 50 partners consisting of leading OEMs, Tiers, SMEs research institutions and universities replying to the challenge of novel vehicle software architectures and building blocks enabling "software defined vehicle" applications for future cars.

The FEDERATE Newsletter will regularly inform the European automotive community about progress of these European initiatives.

This text has been contributed by Andreas Eckel, TTTech Computertechnik AG

What is FEDERATE ?

To address challenges in decarbonization through electrification and in developing future solutions for inclusive, safe and affordable mobility - the EU, together with industry, governments, and research institutions, have launched the European Software-Defined Vehicle (SDV) Ecosystem. To turn this into reality, the Coordination and Support Action - FEDERATE (Software-Defined Vehicle Support and Coordination Project) was launched in 2023. The project aims to bring together all relevant stakeholders to accelerate the development of an SDV Ecosystem, to foster a vibrant European community and to orchestrate the SDV R&D&I activities. Joining the SDV Ecosystem means joining a strong European SDV community and contributing to the findings of common pre-competitive solutions, clarifying ambiguities, actively collaborating, and focusing on research, development, and innovation activities, etc. In order to help the new stakeholders join the community and overcome the barriers for participation, FEDERATE shall set a jointly elaborated vision document, which will summarize high-level requirements for an open software-defined vehicle software. It will also arrange SDV Conferences in synergy with the Eclipse Foundation to enable a collaborative and active SDV community. Furthermore, it will create a common understanding (glossary) and wording which will be forwarded to the SDV community, creating a jointly elaborated understanding. In addition to all of the above, an active and contributing community will ensure the further development of the created self-sustaining SDV Ecosystem program.

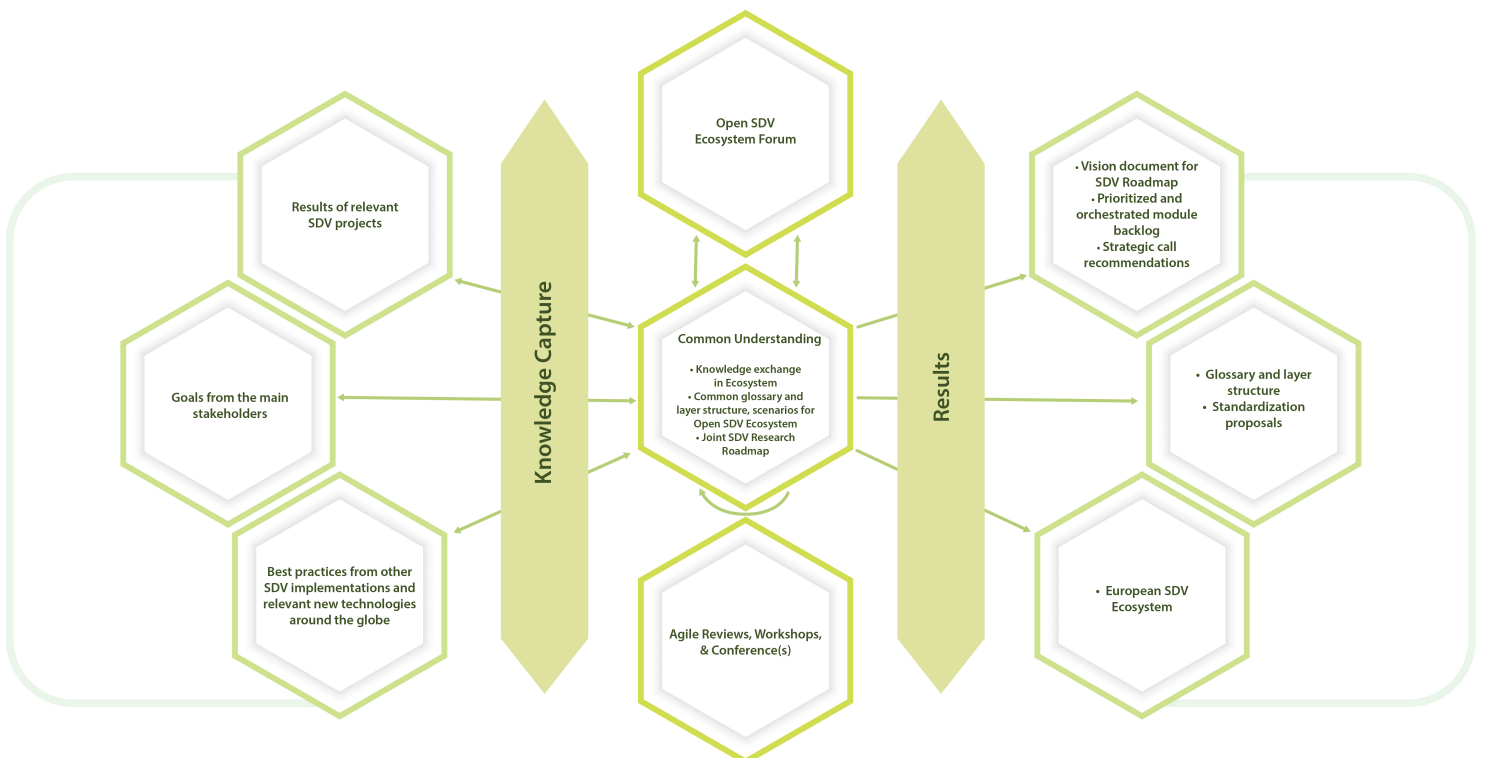
Vision & Mission

- ❖ **Vision** - The collaborative Open European SDV Ecosystem will help to solve burning societal issues with respect to providing clean, affordable and safe mobility.
- ❖ **Mission** - to bring together all relevant stakeholders of the mobility industry, the open-source software community, the semiconductor industry, and public authorities to accelerate the development of an SDV Ecosystem, to foster a vibrant European community and to orchestrate the SDV Research, Development and Innovation activities.

Facts & figures

- ❖ Commenced on 1 October 2023 with a total funding of €1.9 million.
- ❖ A three-year coordination and support project.
- ❖ Funding based on Grant Agreement No. 101139749.
- ❖ Grant Agreement concluded between Chips Joint Undertaking (CHIPS JU) ('granting authority') and 29 partners from seven countries.
- ❖ 5 Work Packages with agile workflow set.
- ❖ 29 Partners
- ❖ 7 Countries

Approach



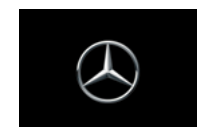
Consortium



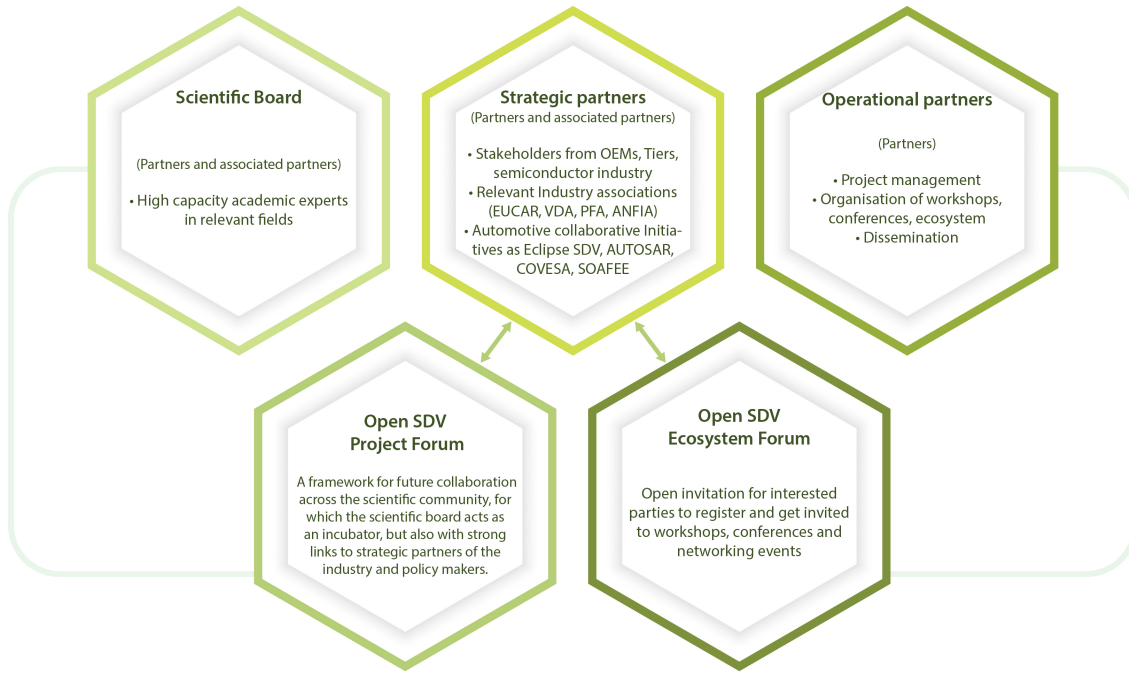
The consortium of FEDERATE includes:

- major OEMs
- automotive tiers
- semiconductor companies
- relevant industry associations, and
- industrial SDV initiatives, including the ECLIPSE SDV WG.

The consortium is led by **AVL List GmbH**, which is a global technology provider. AVL supports the automotive world into the area of SDV with simulation, virtualization, instrumentation, and test automation. The company combines state-of-the-art and highly scalable IT, software, and technology solutions with its application know-how, thereby offering customers extensive tools for development, application and verification of automotive systems.



Structure of the Consortium



Dissemination & Communication

Launch of EU-funded coordination project FEDERATE Kick-off meeting on 5th October 2023

[FEDERATE Kick-off to read more](#)

[FEDERATE Kick-off photo gallery](#)



CHIPS JU Undertaking Launch Event on 30th November 2023 – 1st December 2023

[Chips JU launch event to read more](#)

[Chips JU launch event photo gallery](#)



SAVE THE DATE

for two main SDV conferences, where FEDERATE will play a main role

Conference on 22-24 October 2024 in Mainz in collaboration with Eclipse Foundation

#OCX24

Open Code Experience 2024 | Oct 22-24 | OCX 24 | The Eclipse Foundation (opencode-x.org)

Find out more about Federate and subscribe for

FEDERATE-related news!

The Autonomous Main Event 2024 on 24 September 2024 in Vienna

<https://www.the-autonomous.com/main-event/>

<https://www.linkedin.com/posts/the-autonomous>

Don't miss a co-event with workshops for the SDV community, accompanying the Autonomous Main Event 2024 preliminary planned on **23 September 2024!**