

CVII general Technology Stack meeting notes (older)

[Permanent link: [Tech stack overview](#)]

See the new [CVII Technology Stack meeting notes](#) for 2022

Wednesday 2021-12-15

- <https://github.com/slavr/vss-otaku>
- <https://drive.google.com/file/d/1kVXB7bdTarzQdiwtZyNqCK-vHihJeW0w/view?usp=sharing>

Wednesday 2021-12-08 - COVESA wiki

Wednesday 2021-09-29

Project	Person reporting	Updates
• Kuksa.VAL	Sebastian (Bosch)	--
• VISS server implementation in Go	Ulf	--
• VSS & Tools	Daniel Wilms (BMW) Gunnar (Sebastian as backup)	
• VSSo	Daniel W Ted	Formal publication plans continue. Transition to W3C working group. VSSo DTDL translation (still) exists.
• VSC & Tools	Gunnar	
• W3C VISS specification	Ted Ulf	Access control PRs moving forward, and some specification text changes. (more details see last week's minutes on COVESA Wiki)
• CCS-components	Ulf	Updated picture (PR sent)
• AOS	Artem	Publishing started. Hopefully links to source within a week.

- DAPR - evaluation, discussion, plans for VSS integration
- Initial code drops from BMW. Full signal-source (SOME/IP) to GraphQL data server, serving VSS data.
Note: All parts of the end-to-end are not here yet, but these initial 3:
 - https://github.com/COVESA/vss2graphql_schema
 - https://github.com/COVESA/test_franca2vss_mapping_layer
 - <https://github.com/COVESA/test-someip-service>
- VSS serialization reusable C++ library? (not discussed today in particular - but note that serialization/messaging format remains a need for connecting to the frameworks such as DAPR and other transparent "transports" that do not define a format yet.)













Wednesday 2021-10-13

From now on, refer to [COVESA Wiki](#)

Wednesday 2021-10-06

No regular meeting due to [ongoing AMM](#)

Wednesday 2021-09-29

Project	Person reporting	Updates
<ul style="list-style-type: none">ioTEA/Vehicle Edge	Mike Haller (Bosch)  Thomas Spreckley 	Automated package/docker container image deployment. Gunnar prefers to delay upgrade of account types (GitHub, Docker Hub etc) until after next week.
<ul style="list-style-type: none">Kuksa.VAL	Sebastian (Bosch) 	
<ul style="list-style-type: none">VISS server implementation in Go	Ulf 	Access control and curve logging planned demo for AMM so those features have been tested and some fixes recently.
<ul style="list-style-type: none">VSS & Tools	Daniel Wilms (BMW)  Gunnar  (Sebastian as backup)	Implementation proposal for unit file. Close to ready but some details (e.g. where to store config) are pending. VSS-Layer discussion planned 2 weeks from now
<ul style="list-style-type: none">VSSo	Daniel W  Ted	(Preparing presentation for AMM)
<ul style="list-style-type: none">VSC & Tools	Gunnar 	Parser/generator working with updated service-description file (which includes some changes to the IDL language).
<ul style="list-style-type: none">W3C VISS specification	Ted  Ulf 	Discussion/finalizing updates on access control: <ul style="list-style-type: none">- bandwidth savings and server-caching of tokens- alternative (simplified) access-control model proposal
<ul style="list-style-type: none">CCS-client repository	Ulf 	
<ul style="list-style-type: none">AOS	<u>Artem</u> 	












Apologies

Minutes

- AASIG code gen, some progress. Working on adding type-conversion into generated code. Code still in Manu's fork. PR not sent yet.
 - Stephen: Started looking into time-series databases. Plan to connect VSS data server (using Go-implementation VISS?) to the database APIs. InfluxDB, IoTDB, ...
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Wednesday 2021-09-22

Project	Person reporting	Updates
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<ul style="list-style-type: none"> ioTEA/Vehicle Edge 	Mike Haller (Bosch)  Thomas Spreckley 	CI/CD integration mostly finished. Extended reports (JUnit) Unit testing working. SDK bug fix, was not reading config files. Vehicle Edge - phase 2, seat-adjuster demo. (Discussions on VSC started, driven from this). Focus on internal stakeholders but open-sourcing pending.
<ul style="list-style-type: none"> Kuksa.VAL 	Sebastian (Bosch) 	Pending PR allowing Kuksa.VAL to load several VSS files at start up (supporting layer idea)
<ul style="list-style-type: none"> VISS server implementation in Go 	Ulf 	Minor bug fixes
<ul style="list-style-type: none"> VSS & Tools 	Daniel Wilms (BMW)  Gunnar  (Sebastian as backup)	Accessory setting for ignition switch was missing, proposed to be added in a PR Dynamic unit list: implementation needs rework, new proposal next week
<ul style="list-style-type: none"> VSSo 	Daniel W  Ted	
<ul style="list-style-type: none"> VSC & Tools 	Gunnar 	No VSC meeting this week (biweekly)
<ul style="list-style-type: none"> W3C VISS specification 	Ted  Ulf	Major discussion on caching of access-tokens, mandatory or optional, behavior of server and client if token is used but not found in cache, etc. Multi-set values (actuators) in a single call still open.
<ul style="list-style-type: none"> CCS-client repository 	Ulf 	Minor fixes.
<ul style="list-style-type: none"> AOS 	Artem 	Discussions about how to design edge-computing, with one Tier1 and one IAS provider, with relationship to CVII topics.

Apologies

- Florian (DENSO)

Minutes

- VSS-tools, A bit of *additional* progress in Android Automotive Vehicle Properties (VHAL code-generation) (Follow along in code_generation branch in vss-tools (and Manu's fork))
- Discuss possible automatic unit/scaling
- Time-series database implementation, see [CVII Tech Stack](#)
 - Discussion with Stephen/Renesas about this point.
- Stephen: There is a dataset that exists from previous demos. (Values and timestamps) that could be used as data (after aligning it to VSS standards)
- Stephen (sharing screen): Many values look like Snapshots (according to [this definition](#)), i.e. several signals measured the same time.
 - Gunnar: Yeah, the snapshot format suggests to only store the timestamp once, if it is measured at the same time.
 - Gunnar: Note "same time"/simultaneous might include a short time interval since the meaning of simultaneous is a bit sketchy in a discrete system.
- Tom: You can also reduce size of time stamps by transferring a delta-time compared to some reference.
- Gunnar: Good point, worthy of adding a note to [Data serialization / value formats](#) page.
- Reminder: [Register for AMM](#) if you haven't.

Wednesday 2021-09-15

Project	Person reporting	Updates
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<ul style="list-style-type: none"> • ioTEA/Vehicle Edge 	Mike Haller (Bosch) ✓	Preparing to publish docker images (using GitHub package releases) Gunnar to support with Docker Hub or GitHub package support for GENIVI organization. Idea brewing: Educational (University) involvement - build curriculum / community of students?
<ul style="list-style-type: none"> • Kuksa.VAL 	Sebastian (Bosch) ✓	
<ul style="list-style-type: none"> • VISS server implementation in Go 	Ulf ✓	
<ul style="list-style-type: none"> • VSS & Tools 	Daniel Wilms (BMW) ? Gunnar ✓ (Sebastian as backup)	First presentation of a set of new VSS signals proposed by ExcelFore and eSync Alliance in the areas of SOTA-metrics, Battery Mgmt, ... Proposal for defining allowable units in a config file is almost done. Just a rename remaining. v2.2 release is being prepared. No breaking changes, but additions and fixes to the catalog. Also some new contrib tools and such of course included there. vspec2yaml finally merged.
<ul style="list-style-type: none"> • VSSo 	Daniel W ? Ted	
<ul style="list-style-type: none"> • VSC & Tools 	Gunnar ✓	Bosch joined this week's meeting. Discussion about current state and opportunities.
<ul style="list-style-type: none"> • W3C VISS specification 	Ted ✓ Ulf	Continued improvement issues. Lots of discussion on multi-set values (actuators) in a single call
<ul style="list-style-type: none"> • CCS-client repository 	Ulf ✓	-
<ul style="list-style-type: none"> • AOS 	Artem ✗	-

Apologies

- Ted, Piotr, Artem

Minutes

- Discussion about how to integrated (tagged) version of VSS into IOTea out of the box. Generated files are automatically inserted into Hugo documentation and can be downloaded from there, but otherwise using the git tag.
- (Bosch) Idea brewing: Educational (University) involvement - build curriculum / community of students?
- Android Automotive Vehicle Properties (VHAL code-generation) is now making progress (Follow along in code_generation branch in vss-tools (and Manu's fork))

Wednesday 2021-09-08

Wiki was down so these minutes were taken offline, and later added:

1. Standard project updates

Kuksa

- Unit tests for gRPC code
- Investigating switching from Jenkins to GitHub actions
- ioT-event-analytics / vehicle-edge
- Working on npm packaging (npmjs organization account now exists)
- Quality checks/
- Suitcase demonstrator including hardware, includes gRPC to communicate with Vehicle

- API. RPi ARM 64 bit.

VSSo

- Refine first version
- A bit more structure to the process
- Discussions continued with Microsoft, conversion to DTDL

VSS

- Continued discussions on units and datatypes

AOS

- Additional discussions with various stakeholders in industry. Want to get the code and the container (definition) specification into the open. Registration framework.
- Some inputs drive toward constrained environments. Small efficient implementations required for data-servers The full Go-lang VISS server might not fit, k3s and others might also not "fit".
- Higher modularity is preferred

VSC

- PR + examples added to master branch in the VSC repository.
- vss-tools (Android)
- A document provided to outline plan, and basic file structure
- Looking for strengthening the implementation team










VISS



- Improvements being done from feedback (pull requests) based on the first public working draft

2. Other minutes

- Mike Haller (Bosch) introduces himself. New product owner for IoT EA.
- Artem EPAM might have developers free in 2-3 weeks
- AMM update, reminder to register

Wednesday 2021-09-01










Project	Person reporting	Updates
<ul style="list-style-type: none"> • ioTEA/Vehicle Edge 	Thomas Spreckley (Bosch) 	Integration test pull-request, renamed test APIs. More friendly integration in CI pipeline npmjs.org now has a package for ioTEA , with information PyPi will get a package as well Prepare release process, 0.6.0 release is imminent
<ul style="list-style-type: none"> • Kuksa.VAL 	Sebastian (Bosch) 	
<ul style="list-style-type: none"> • VISS server implementation in Go 	Ulf 	
<ul style="list-style-type: none"> • VSS & Tools 	Daniel Wilms (BMW)  Gunnar  (Sebastian as backup)	Discussing some new topics related to possibly new strategy for instantiation of branches ...
<ul style="list-style-type: none"> • VSSo 	Daniel W  Ted 	
<ul style="list-style-type: none"> • VSC & Tools 	Gunnar 	Magnus F taking some open issues. Inclusions of nested namespaces still to be merged/decided.
<ul style="list-style-type: none"> • W3C VISS specification 	Ted  Ulf	



• CCS-client repository	Ulf 	-
• AOS	Artem 	-

Minutes

- Sebastian and Daniel W, Ulf, sent apologies
- Thomas working on AMM presentation
- eSync Alliance, upcoming
- OPIN, upcoming
- A bit of progress on AVRO encoding.
- (Repeated info), ongoing work on Android VSS-to-Android properties
 - The goal is to create something like this: [aasig-vhal-demo/tree/main/src repository](#) this should already compile in AOSP (HAL implementation), but that example has a fixed set of signals. Instead it shall be possible to code-generation from an arbitrary list of VSS signals
 - Here is a planning/background page named [VSS to AOSP translation - WBS](#)
 - The code generator implementation will be a kind of combination of VSS-tools (to read VSS) and vsc-tools (that shows how to use Jinja2 templates for generation). The tools will need to consume also a "VSS layer" (deployment model) that describes how VSS signals are mapped to their respective Android counterparts.
Example of such mapping is on [VSS to AOSP translation - WBS](#)

Wednesday 2021-08-25




Project	Person reporting	Updates
• ioTEA /Vehicle Edge	Thomas Spreckley 	Node.js and python for containerized integration tests. DAPR integration demo Bugfix Seat adjuster demo. Developed, not pushed public though.
• Kuksa. VAL	Sebastian 	Merged first gRPC, no docs yet and don't ask... :) First logging feature impl. Useful for debug/development.
• VISS server implementation in Go	Ulf 	Working on TLS implementation
• VSS & Tools	Daniel Wilms  Gunnar  (Sebastian as backup)	For values that are defined in model (default, or min/max limits), shall "0" be valid if the signal datatype is float, or shall we require it to be "0.0"? Discussion on Structured datatypes support? Major discussion opened, it is a fairly major change if included. And of course discuss syntax in that case. Extensible (new) datatypes and units, no progress yet. vss-tools: "vspec2yaml" proposal. vspec is already yaml, but this expands all instances and flattens into a single output file, and includes uuid values. Not yet accepted, maybe rename tool since vspec is basically yaml already.
• VSSo	Daniel W  Ted 	Rudimentary automated mapping VSSo<->DTD
• VSC & Tools	Gunnar 	Fix needed to use python 3.8 (currently works only on 3.9) GitHub actions now run unit tests README updates to document gen() function changes
• W3C VISS specification	Ted  Ulf	Feedback on first public working draft: <ul style="list-style-type: none"> • Minor bug - all messages to provide timestamp uniformly • Bandwidth usage due to access token sent with every request. Discussing if the token could be used like a session, for example by sending only the signature as a reference to a token that had already been authenticated. Traditional session-cookie possibly going out of style in the future?









<ul style="list-style-type: none"> CCS-client repository 	Ulf 	-
<ul style="list-style-type: none"> AOS 	Artem 	-

Minutes/Agenda

- New participant: Francisco Uribe. Quick roll-call/introduction.
- Project updates, see table.
- (VSS input)
 - Alexander: Is OBD branch really required? Is it useful to model the data according to the channel where it is distributed. (For example vehicle speed could be fetched on OBD, but also in other contexts)
 - Gunnar: Understood and it is a known issue, but this is not only about the channel of distribution but also of the signal definition. Sometimes an existing defacto list of data already exists, and occasionally it might be useful to reproduce it without changing it so that people recognize the signals they are used to. We are aware there are certain cases where this would lead to the same signal value being in more than one place, so it's a continuous discussion. If the majority thinks the OBD branch should not be there, then it can be changed. For every case, bring the discussion to the specific VSS call on Tuesdays.
- Update/plans on upcoming open source code for tools, from BMW:
- Alexander D (BMW): We have for a while explored how to distribute VSS data in our platforms. MQTT looked at before but we saw benefits with GraphQL. Flexible queries! GraphQL "invented" shortly after VISS v1? Good community. Implementations exist. Possibility to tie signal sources in the system (SOME/IP services, REST services, CAN? ... etc.) to a single signal schema. The schema is hierarchical, following VSS model (but possibly including more signals?) Created python tools that generate the GraphQL schema from VSS. There are some local extensions we have made (coming in second wave of tool release).
 - Mapping using a VSS-layer type (deployment model) which explains how to fetch the values from the system via an interface that is described using Franca IDL.
 - With this as input the tools generate code (e.g. resolvers for the GraphQL server)
 - Plan: Define a "ugly" Franca IDL interface and show examples of VSS-signal mappings on it. The purpose is to include some "misuse" of Franca, or put another way, challenges in mapping VSS to "difficult" existing services.
 - First (partial) release of code fairly soon.
- Gunnar: First tests on serialization using AVRO. See [branch](#). Will investigate python and C++ implementations first.
- Work started on VSSAndroid property C++ binding code. Just investigating VSS-generators and VSC/Jinja2 generation methods so far.
- AMM planning CVII topics

Wednesday 2021-08-18

Project	Person reporting	Updates
<ul style="list-style-type: none"> ioTEA /Vehicle Edge 	Thomas Spreckley 	
<ul style="list-style-type: none"> Kuksa.VAL 	Sebastian 	gRPC, Visual Studio dev containers for easier development
<ul style="list-style-type: none"> VISS server implementation in Go 	Ulf 	No updates.

<ul style="list-style-type: none"> • VSS & Tools 	Daniel Wilms  Gunnar  (Sebastian as backup)	<ul style="list-style-type: none"> • Dropped travis file because GitHub actions cover all now • Seat signals were sensors, now actuators • VSS meeting group continues discussion of extensible datatypes and units (each separately). At the moment it's basically a fixed list. <ul style="list-style-type: none"> - Which datatypes and units are predefined as part of the standard VSS model? - Are these also used in the current standard catalog? Are there "standard" types that are not used at all? - Shall the model allow extension with new datatypes? ... and/or with new units? - If it shall, what is the method of extension? Shall the datatypes and units be defined in the program source code or read in from a configuration file. Progress is being made on these questions but all (many) stakeholders need to have time to weigh in. • Early hints on upcoming issues: Supporting struct data types (or not, as now), and possibly revisiting the definition of the enum type.
<ul style="list-style-type: none"> • VSSo 	Daniel W  Ted 	
<ul style="list-style-type: none"> • VSC & Tools 	Gunnar 	<ul style="list-style-type: none"> • vsc-tools: Generator function now uses type introspection on nodes, so there is no need to specify the node type in the template any longer. (Issue #16) • vsc-tools: Unit test framework in place (pytest) with a first test example (#13) • VSC/RPC meeting this week discussed way forward, and outreach to companies for one-on-one input regarding preferences • gRPC, OpenAPI, and other standards are important to get into the mix, as well as Franca usage or migration path as described before. A new Franca input parser may need to be programmed from scratch, but this should be straight forward.
<ul style="list-style-type: none"> • W3C VISS specification 	Ted  Ulf	
<ul style="list-style-type: none"> • CCS-client repository 	Ulf 	
<ul style="list-style-type: none"> • AOS 	Artem 	Trying to find common ground around authorization etc. Need a proposal for community to react. Service representation spec. also of interest (VSC (and VSS) related discussion).

Minutes/Agenda

- Several vacation/apologies this week from Bosch, BMW, ...
- Project updates above, for those that are available
- Catch up with Artem regarding AOS issues
 - See above
 - Also working on modularity - identifying components for reuse.
- VSC and tools
 - synergy opportunities with gRPC support in KUKSA.VAL?
 - Let's discuss "decisions" taken during this development how to find consistency with the VSC-related work (which intends to integrate gRPC and other technologies as needed).
- Awareness: [CVII-TS: Binary encoding for VSS-based data transfer](#)
 - synergy opportunities with gRPC impl. also here?
 - Artem: We have seen some problems with binary encodings, so JSON mostly for now, which is adequate for a lot of the needs at the moment. We see potential need (for binary efficient encoding) however.
 - Sebastian: For gRPC we replace some of the JSON protocol parts of course, but data encoding is often still using strings for simplicity at the moment.
 - Gunnar: OK, I conclude this is still important and interesting to together define one or two canonical binary encodings for VSS.
- Updates/discussion on other priority-list projects:
 - [VISS v2 server Planning / Work Breakdown page](#)
 - Needs a proper "need"/request for resource allocation. Discussion on if current development frameworks (using python, NodeJS and other) are acceptable in in-vehicle embedded space or if this need actually *does* exist already.
- Android AAASIG update
 - Plan to start implementing [VSS to AOSP translation - WBS](#) using a combination of [VSS-tools](#) examples for reading VSS and [VSC-tools](#) examples for code generation using jinja2. Bittium is leading.

Wednesday 2021-08-11

- No meeting this week.

Wednesday 2021-08-04

- Kuksa: Sebastian reports that students are working on the GRPC binding, no new feature in the pipe for the time being
- Eclipse: Philippe indicates that the contact is established with the Eclipse Foundation, a new call is scheduled at the end of the month
- AMM: Philippe indicates that the upcoming AMM will be virtual due to the delta variant
- Kubernetes: Stephen Lawrence reports that there is an on-going experiment for running kubernetes on R-Car, please look at [https://elinux.org/R-Car/k8s\(J\)](https://elinux.org/R-Car/k8s(J)), this is in Japanese but can be translated using the usual tools
- there will be NO CALL NEXT WEEK due to Summer low activity period, meeting schedule is the following
 - 11 August -- No meeting
 - 18 August -- meeting as usual (and back to weekly schedule).

Wednesday 2021-07-21

Project	Person reporting	Updates
• ioTEA/Vehicle Edge	Thomas Spreckley	(Bootable image): Working on encoding the documentation of licenses and other needs for binary image release. Planned docker support in Apertis for (next) binary release based on Apertis
• Kuksa.VAL	Sebastian	New release https://github.com/eclipse/kuksa.val/releases/tag/0.1.11 <ul style="list-style-type: none">• extra transformations (mapping/math) in DBC feeder• last release before switching to more VissV2 like responses for get Work on GRPC on-going
• VISS server implementation in Go	Ulf	
• VSS & Tools	Sebastian Daniel W Gunnar (Sebastian as backup)	vss-tools: (python-fu...) Optimization of reverse-lookup of types among available types vss-tools: bugfix: include dirs now searched in given order instead of undefined behavior tools: bugfix: include dirs now searched in given order instead of undefined behavior VSSo tools update merged Made progress on discussion on "custom" Data-types (leaning towards not supporting, and showing how to get to a solution in other ways). Similar discussion on Units, pushed to later.
• VSSo	Daniel W Ted	VSSo tools update merged, see above.
• VSC & Tools	Gunnar	
• W3C VISS specification	Ted	(Finalizing details to push first public working draft). Vacation pause in meetings.
• CCS-client repository	Ulf	
• AOS	Artem	

Minutes/Agenda

- Project updates, see above
- AMM, discuss candidates for sessions / presentations
- Follow-up and further planning on [3 prioritized development topics](#)
- Vacation/attendance planning for upcoming weeks

Wednesday 2021-07-14

Project	Person reporting	Updates	Comments
• ioTEA/Vehicle Edge	Thomas Spreckley	- Hoping to make Vehicle Edge repo more capable / updated - Raspberry pi image (as noted last week) is done, and (so far) used internally	
• Kuksa.VAL	Sebastian	VSS v2 support?	
• VISS server implementation in Go	Ulf		
• VSS & Tools	Gunnar Sebastian Daniel W	Fundamental discussions on flexibility / growth of data types and units. vss-tools, some bugfix (standard catalog did not make use of this feature)	
• VSSo	Ted	(Breakout call with Microsoft). Design choices still discussed, comparison to DTDL, trying out automated conversions and evaluating the result.	
• VSC & Tools	Gunnar	No news. Still establishing individual outreach and necessary questions to establish the "choice" of the established IDL.	
• W3C VISS specification	Ted	First public working draft is almost ready to go.	
• CCS-client repository	Ulf		
• AOS	Artem	Still working on documentation and internal agreements for possibility to open-source.	

Minutes:

- Project updates according to above.
- Thomas: How/where to host the "ready-to-go" RaspberryPi images mentioned previously? Let's discuss how to make it more visible.
- Gunnar: Reiterating that out-of-the box experience is good, but we also need to "break apart" frameworks into reusable components, to promote and help a collaborative tech-stack development.
- Thomas: Daniel K has some ideas for APIs for cloud-to-device.
- Went through the currently three highlighted development projects at the top of [CVII Tech Stack](#)
 - VISS server (C++)
 - Artem / AOS likely to plan resources
 - VSC-based proof of concept
 - Bosch interest - Thomas to set up initial chat with Daniel Krippner.
 - Binary serialization specification
 - Call for volunteers
- Overall, these three seemed to still be high on interest/priority list.

Wednesday 2021-07-07

Project	Person reporting	Updates	Comments
• ioTEA /Vehicle Edge	Thomas Spreckley	Still working on "ready-to-go" Raspberry images (with Ubuntu and Apertis)	



• Kuksa.VAL	Sebastian	GRPC interface: Work ongoing Eclipse SAAM sldies and talk, also pitching vss available at: https://www.eclipse.org/kuksa/blog/2021/06/24/2021-06-24-eclipsesaam-scr-anti-tampering/ for all SAAM talks check https://events.eclipse.org/2021/saam-mobility/	
• VISS server implementation in Go	Ulf		
• VSS & Tools	Gunnar Sebastian Daniel W	Discussion around units (kph, m, kg,...) and datatypes (int16, string, float,...) : How to "add" new ones, should this really be encouraged, or rather discouraged. Discussion ongoing Fixed a small datatype bug in Wheel specification Small bugfixes in tooling	
• VSSo	Daniel W	No updates. Meeting with MS upcoming (how to map to MS ecosystem)	
• VSC & Tools	Gunnar	Has been discussed during CVII workshop July 1st CVII Workshop July 1, 2021	
• W3C VISS specification	Ulf		
• CCS-client repository	Ulf		
• AOS	Artem	Has been presented during CVII workshop July 1st CVII Workshop July 1, 2021	

Minutes:

- Project updates above.
- Mentioned Backlog heading on main page, and the placeholder page for [User Identification \(CVII\)](#)

Wednesday 2021-06-30

Project	Person reporting	Updates	Comments
• ioTEA/Vehicle Edge	Thomas Spreckley	Bugfixes in VSCode extension, and a NodeJS spawning fix. RPi4 image. A full Apertis image will be created. Added required dependencies for ioTEA /VehicleEdge.	
• Kuksa.VAL	Sebastian		
• VISS server implementation in Go	awaiting Ulf's return		
• VSS & Tools	Gunnar Daniel W	PRs for documentation improvement, some merged Progressing tickets and major discussions (still open tickets)	
• VSSo	Daniel W	Break-out discussion, with Microsoft, still working with some postponement (vacations etc.) VSS2TTL small tweaks.	
• VSC & Tools	Gunnar	<i>Preparation for the workshop discussion tomorrow.</i>	
• W3C VISS specification	awaiting Ulf's return		

• CCS-client repository	 awaiting Ulf's return		
• AOS	Artem 	Some licensing discussions. Updating to VISS v2.	











Minutes:

- Introduction (for Marc mostly) on various topics, organization etc.
- Artem: There are fundamental topics I would like to have workshop on. How to identify services. Authorization....
- Blackberry+AWS **IVY project** was mentioned. Bosch working on setting up a first discussion / onboarding.

Wednesday 2021-06-23

Fixed Agenda:

Project updates (<= 2-4 min each)

Project	Person reporting	Updates	Comments
• ioTEA/Vehicle Edge	Thomas Spreckley 	Improved unit-tests (especially on protocol gateway) Vehicle Edge repo improvements, hardware support (RPi4)	
• Kuksa.VAL	Sebastian 	Perfect.	
• VISS server implementation in Go			
• VSS & Tools	Gunnar  Daniel W 	GitHub actions VSS catalog now not using list-format, better consistency UUID no longer using an input file. Improved package dependency handling	
• VSSo	Daniel W 	Short meeting Plan deep-dive this week on format of TTL file (Turtle - Terse RDF Triple Language), and checking if conversion tools work, etc.	
• VSC & Tools	Gunnar 		
• W3C VISS specification			
• CCS-client repository		Future: possibly split up parts into repos, prepare for proper "microservices" usage.	
• AOS	Artem  Stephen	Ongoing discussion about existing code becoming open-source, and identify new collaboration areas.	

Project planning, other topics

Participants

- Christian K
- Philippe R
- Dirk
- Stephen
- Thomas
- Piotr
- Ted
- Gunnar

Minutes

Subprojects / tracks updates

- Development projects, in table above

Bosch Framework

- [IoT-event-analytics and Vehicle-Edge projects](#) – Thomas will help out to fill this in
- [deployment.md documentation file](#) is useful new input

General

- Is the (old but actively developed) [JOYNR project](#) of interest in CVII context?
- Eclipse Foundation project [Tractus-X](#) – worth starting an alignment discussion

AUTOSAR

- CVII was presented / discussed with AUTOSAR steering committee today. (Good Q&A and discussions but further details not shared here)
- We want to discuss the ability to use AUTOSAR based systems as signal sources
- Connecting AUTOSAR and "non-AUTOSAR worlds"
- Can there be a gateway doing (any) necessary translation (if needed), and/or mapping between protocols

Wednesday 2021-06-16

Fixed Agenda:

Project updates (<= 2-4 min each)

Project	Person reporting	Updates	Comments
• ioTEA/Vehicle Edge	Thomas Spreckley ✓	Technology transport abstraction (protocol gateway) C++ support Integration test framework + test suites Rust experiments starting (not visible yet)	
• Kuksa.VAL	Sebastian ✓	Paper describing working with Kuksa (gather data from exhaust system and analyze the values)	
• VISS server implementation in Go	Ulf ✓	Support for Curve Logging. Implementation better verified now (connected and compared to Geotab Go-device implementation)	
• VSS & Tools	Gunnar ✓ Daniel W ✓	Travis broken... 😊 Discussion on attributes (constants), how often and if they can change (for example between driving cycles)	
• VSSo	Daniel W ✓	vss2vsso ready to merge.	
• VSC & Tools	Gunnar ✓	PR open tweaks some concepts, nested namespaces, clarifies properties. Properties = VSS signals. Similar setup. Discussion on whether it can be done only "in VSS" instead. NOTE: Planning in parallel a " <i>fundamental</i> " discussion on the creation of the common services/interface language likely on July 1 workshop.	
• W3C VISS specification	Ulf ✓	VISS version 2, process started to send it out as First Public Working Draft (first working group approves to go to this state). Discussion on if some features should be optional. Candidates for optionality are in the areas of filtering and access control.	
• CCS-client repository	Ulf ✓	Some smaller fixes after testing in new environment. Planning to have a tool to transform from Geotab collected data into VSS. The first step was implemented (to interpolate curve logging formatted data).	
• AOS	Artem ✓	<i>Awaiting big-picture plan first (see below)</i>	

Project planning, other topics

Participants

Minutes

- Quick updates done
- AOS:
- Artem: We are working on publishing the appropriate open-source parts. Protocols, authentication, ...
- Authorization service. Defining access rights.
- Gunnar: Definition of access control rights, permissions, etc. are worthwhile to make standard. Different environment have different needs (e.g. VISS spec, Android Automotive permissions model, etc.) but there are opportunities to design this together.
- AUTOSAR connection
- Piotr: TietoEvry has talked with AR community to propose some concepts. VehicleGateway (Cloud-to-vehicle connection), conceptual phase started. Piotr tracking but not part of main design team. Adam can tell us more.
- [Fill out survey](#) (and ask colleagues who are not as connected to CVII already)
- [July 1 Workshop planning](#)
- Ted: Best Practices for automotive applications, is progressing well (recent discussions on accessibility aspects).

Wednesday 2021-06-09

Project planning, other topics

- Student development project (security) – brainstorm implementation topics
- CVII Workshop planning
- AOS presentation by Artem

Participants

- 16 participants
- Florian, Jeff, Johan, Ulf, Stephen, Gunnar, Philippe, Ted, Daniel W, Artem, Christian K, Dirk, Christian H, Ravi
- Apologies: Iyyaz

Minutes

- Development project updates were skipped (missed). Postponed until next week.
- Round-table due to new mix of participants
- Discussed student dev project ideas, link above
- Discussed CVII workshop plan, link above
- Artem presented AOS overview
- Discussions around future plans (overlay architectures from AOS, Bosch-IoTea/Vehicle Edge, CCS and other. Identify work areas).

Wednesday 2021-06-02

Fixed Agenda:

Project updates (<= 5 min each)

Project	Person reporting	Updates	Comments
<ul style="list-style-type: none">• ioTEA/Vehicle Edge	Lars-Erich?, Jochen? ✗	Waiting for the right people next week.	
<ul style="list-style-type: none">• Kuksa.VAL	Sebastian ✓	<ul style="list-style-type: none">▪ Bugfix on test / validation of VSS▪ DBC feeder improvements▪ Old experiment on permissions removed (newer approach to JWT based access remains)▪ stress test (new student developer)	
<ul style="list-style-type: none">• VISS server implementation in Go	Ulf ✗	Curve Logging implemented (Ulf can explain more later)	
<ul style="list-style-type: none">• VSS & Tools	Gunnar Daniel W ✓	VSS: default should be only for attributes, fixed in tools and removed from non-attributes in VSS itself Documentation generation fixes vss-tools new graphql schema generator vss to vssio converter still under review (PR)	

• VSSo	Daniel W	vss to vss converter still under review (PR)	
• VSC & Tools	Gunnar	A VSC generation tool/framework exists. Templates still todo. Reconsidering the language definition (maybe use standard Franca IDL?)	
• W3C VISS specification	Ulf		
• CCS-client repository	Ulf		
AOS?			

Updates on liaisons, alignment track, etc.

Project planning, other topics

- Starting conversations with/about AOS today
- CVII Workshop date set for 1 July (1600 CEST, 3h duration)

Minutes

- Introductions (Artem's first meeting)
- Brief discussion on AOS (principles, not the technology). Embedded parts are planned to be open-source. Process ongoing (outlook - a few months).
- Artem to give AOS architecture/tech overview next week
- Artem mentioned Android HAL using a VISS-protocol external server was implemented and shown by EPAM a few years ago.
 - Gunnar: So this was before AASIG was started... It is good input, although current work has considered GraphQL as the protocol for the internal VSS-data server.
 - => Artem to provide a link to the published code.
- New table-based tracking of wanted/expected/missing tech stack components was added to the [CVII Tech Stack](#) overview page Feedback /changes welcome!
 - This could drive priority discussions also
- Sub-topics moved to separate pages for deeper analysis, e.g. [protobuf](#) (already existed), [mqtt](#) (new), etc.
- Eclipse: short discussion on the liaison with Eclipse, to be followed up with the Bosch team

Wednesday 2021-05-25

Project updates (<= 5 min each)

Project	Person reporting	Updates	Comments
• ioTEA/Vehicle Edge	Lars-Erich?, Jochen?		
• Kuksa.VAL	Sebastian	VISS server - PR 190 - now apply default values if given in input catalog.	
• VISS server implementation in Go	Ulf	Full implementation of Curve Logging (see Tech Brief page) included now.	
• VSS & Tools	Gunnar Daniel	vss-tools: Array size support (caused warnings before) Bug in instantiation code fixed.	
• VSSo	Daniel		
• VSC & Tools	Gunnar		
• W3C VISS specification	Ulf		

<ul style="list-style-type: none"> • CCS-client repository 	Ulf		
AOS?			

Updates on liaisons, alignment track, etc.

- Main topic right now is liaison with ISO group W6 for Extended Vehicle to discuss (potentially) introduction of data model definition in ExVe work.
- Plan for a small-scale meeting with some engineers involved in the activity.
- A deeper technical alignment work is required for SENSORiS. It could be done by a volunteer or a small working group meeting (doing the work, not talking about what *could* be done).

Project planning, other topics

- Upcoming - overlay architectures and plans from VehicleEdge, CCS, AOS, plus the VSS-tools, VSC-tools and various [plans discussed in this meeting](#). The purpose is to combine these into a view of the full tech stack.
- Gunnar reached out to EPAM for participation

Minutes

- Many vacations in Germany this week affects today's attendance.
- Gunnar: Some things might need to be repeated next week, but let's run a dress-rehearsal of the fixed agenda today. Starting with updates.
- Sebastian: Note the upcoming [Eclipse Conference](#). There will be a presentation on KUKSA.VAL, but also other interesting things.
- Gunnar: (Tip from Stephen). Note also this [Embedded virtual conference](#) starting June 3rd (several strong embedded Linux talks in the agenda).
- AOS, first look for related code:
 - [aos-sdk](#)
 - [Yocto meta layer](#)

Wednesday 2021-05-19

- Sebastian suggests every meeting should start with a project-update from each component development project, including IOT-event-analytics, and others.
 - Start this next week.
- Gunnar notes that we should have clearer indication of who is attending/not every week. Better structure and discipline for attendance, (and for agenda of course). Time-boxing can be used if people only want to be on part of the meeting.
- Not much progress on VS* to AUTOSAR tooling this week. Piotr had to leave meeting.
- Basic **VSC** generation framework now on GENIVI github [vsc-tools](#)
- More **VSS**-to-bindings tools might come out open-source licensed, from another OEM's development
- A look at [aoscloud.io](#) - Renesas and EPAM. Some open-source components. Renesas has used VSS and VISSv1 in previous demos. We are hopeful for setting up collaborative work on overlapping areas.
- Collecting up some more related SW project (some older, some newer):
 - <https://github.com/aShinjiroUrata/vehicle-information-service-spec>
 - <https://github.com/aos-sdk/>

Wednesday 2021-04-21

Agenda

- Development related to integrating with AUTOSAR
- "Plan B" on VSC tooling development - discuss options
- Bosch I-O-Tea and Vehicle Edge evaluation

Notes

- Integrations to AUTOSAR
 - Tieto platform running, ready to use for investigations
 - Gunnar: For "Any"2Autosar tooling, first step is usually a definition of the mapping (spread-sheet showing language features that map to each other, where is it simple, where are challenges, etc.)
- VSS2ara would be basically solving the "autosar side" of the system, similar to how Franca AUTOSAR XML converter was used with AUTOSAR.
- Alternative is to first focus on the "non-AUTOSAR" side of systems, e.g. generate a SOME/IP binding directly, or DDS, or other. (VSS/VSC to SOME/IP binding directly).
- ASAM service oriented diagnostics seems interesting.
- "Plan B"
 - The VSC-related tooling is taking even longer time to go through company legal reviews and final approvals for releasing it with an open source license, although there is a clear desire to get it done.
 - A discussion started on how to develop a first set of tools in parallel with waiting for the other.

Wednesday 2021-04-14

Notes

- Tieto: AUTOSAR analysis ongoing. Need tooling soon.
- VSC tooling seems held up by something. End of this week consider if we should launch plan B. Talk to Magnus about it.
- VSC:
 - Piotr: Has ASN.1 been considered as a definition language? (it could be an alternative to protobuf?)
 - ... the compilers are often able to generate a compact binary format
 - ... likely less availability of open-source tools. There should be some however.
 - Gunnar: For VSS I think it's "overkill" since VSS has very simple datatypes but for VSC and arbitrarily complex data definitions, maybe
 - Gunnar: FYI: [OpenAPI](#) and [AsyncAPI](#) have however come up as potential reuse or inspiration for VSC definition. Franca IDL is still a strong basis however. OpenAPI is only REST-focused and AsyncAPI seems to describe primarily a pub/sub direction.
- VSS
 - Stephen: I was recently reading about GraphQL Federation that allows separation of concerns and for domain teams to create parts of the data graph that are then federated into a whole. The separation of concerns resonated with in-vehicle engineering where you have for example services with very different safety and security requirements. Could this help us?
 - Background reading:
 - [video: Apollo GraphQL Federation introduction](#)
 - Netflix uses it to scale their APIs and have some good blogs and a video on its use that have some nice practical illustrations:
 - [blog: How Netflix Scales its API with GraphQL Federation \(Part 1\)](#)
 - [blog: How Netflix Scales its API with GraphQL Federation \(Part 2\)](#)
 - [blog: Beyond REST](#)
 - [video: How Netflix Scales Its API with GraphQL Federation](#)
 - [blog: Open Sourcing the Netflix Domain Graph Service Framework: GraphQL for Spring Boot](#) (added after meeting)

Cloud

- Iyyaz: Regarding demo (AMM). Docker-based stack and Terraform is being developed.

Wednesday 2021-04-07

Notes

- Reviewing and amending [IoT-event-analytics and Vehicle-Edge projects](#) page. UML diagram overview. Dennis supporting.
 - Tieto setting up internal meetings to figure out what to do next with the plans on AUTOSAR interoperability.
- ... planning to build on VSC tooling
- ... Gunnar: Plan translation mapping and templates can start early
- Iyyaz has prepared some notes. E.g. what is "the edge" by definition?

Wednesday 2021-03-31

Notes

- Review of wiki page [IoT-event-analytics and Vehicle-Edge projects](#)
- content of the wiki page is considered very useful by the participants

Wednesday 2021-03-24

- pipeline and configmanager come from IoT-event-analytics repository = Northbound
- kuksa val, hal interface+adapter, vss2iotea part of vehicle-edge = Southbound
- Dirk: There should be some useful UML diagrams.
- Christian to find the presentations/pictures that are useful here and attach to [CVII Tech Stack](#) page.
- Tieto still working on setting up AUTOSAR environment and planning.
- Discussed the need to coordinate development plans (e.g. bindings to DDS, SOME/IP, and-or code generators) to avoid overlap.
- Gunnar create a home page for Vehicle-Edge stack analysis and information.

Wednesday 2021-03-17

Notes

- Update on protobuf tool ([merged](#))
- Bosch code released for [IoT-event-analytics](#) framework, and the [vehicle-edge](#) project to bring together all parts of the stack.
- Discussion on AUTOSAR tooling
 - TietoEVERY to continue to seek out relevant people, bring into a design discussion meeting.

- Franca / FARACON vs VSC development
- VSC code generation framework coming soon. Discussing what to expect.
- Planning the CVII related sessions at GENIVI AMM, May 4-7.

Wednesday 2021-03-10

Agenda

- Updates on topics below
- [Protobuf](#) continued.
- Bosch

Notes

- Bosch: Code related to the demo on the CVII workshop will be on an open repository within 1-2 weeks.
- Discussion about organization of the different parts of CVII. **TODO** link for "org.chart" and [Common Vehicle Interface Initiative - Activity Matrix](#).
- confirming Signal2Service not a likely input to our work (no demonstrator, no plans at the moment)
- ZOOM 😊 KEEPS KICKING ME OUT...
- Waiting....
- Can someone take over leadership?

Wednesday 2021-03-03

- Adam K / Piotr: AUTOSAR - Signal2Service is not really implemented yet.
 - Some VSS to AUTOSAR tooling seems to make sense therefore
 - Tieto want to start working on this. First steps is getting runtime platform setup working. Then the design of VSSAUTOSAR can start (and be discussed).
- Quick look at [CVII Tech Stack technologies - Protobuf](#) again.
- Need for full software architecture focus in this project.
 - Separation of safety-critical technologies and info/entertainment/other. What is being targeted exactly?
 - Where in a typical architecture are we working?
 - VSS itself is orthogonal to safety/other question. However, the chosen technologies and implementations may need to be classified from safety perspective.
 - Clarify where different proposals belong. E.g. "MQTT is unlikely in safety domain, right?"
 - Agreement on which technology to use where.
- Images to show architecture.
- Big software release announcement next week...
- Virtualization important aspect to consider.
 - Gunnar informed about [Automotive Virtual Platform Specification](#) work ongoing in GENIVI.
 - Let's discuss in the future if there are particular aspects to consider in this area.

Wednesday 2021-02-24

- AUTOSAR - Tieto/EVERY still interested but other priorities came up so the time plan not clear at this point.
- Signal2Service - [check if spec released and if applicable](#)
- Look at [defining the representation of data in AUTOSAR-XML](#) (to prepare VSS to ARXML conversion)
 - FARACON tool would be one approach. Create a Franca IDL file with some observable data ("Attributes" in FIDL) and run the conversion, study the result. There is a comprehensive mapping between Franca ARXML that should be correct.
- MQTT
 - VISS over MQTT (Ulf) has been described in W3C Automotive working group.
 - It is embedding VISS in MQTT with a small control protocol defined (over MQTT).
 - Access control strategy is identical to standard VISS.
 - Topic needs to be "protected" somehow or anyone could listen/inject to traffic.
 - Give some time to let this idea mature before it becomes part of any official specifications. New ideas and improvements may come up.
 - A more direct VSS-to-MQTT topic mapping is a different and complementary alternative
 - Sebastian: Publishing to MQTT is easy. For writing more work required (because access control details not done yet).
 - **Steps: Define the payload message format**
 - **Steps: Describe the access control strategy (clients have access to a subset of topics)**
 - **Steps: Deciding implementation language and reuse libraries**
- Protobuf – think about how to represent messages - [this page](#)

Wednesday 2021-02-17

Workshop preparation

Shortlist of working items:

- General efficient message format (JSON and Binary). For use in many contexts, e.g. MQTT, and SOME/IP and other.
 - For JSON, consider VISS spec
 - VISS spec also has a "compressed" format (unique to VISS)

- Discussion about having a more "standard" format for binary/efficient encoding. MsgPack is somewhere in between (like compressed /binary JSON) whereas describing a schema in Protobuf or AVRO or similar will generate an efficient encoding from the schema.
- Define mapping to AUTOSAR technologies, ARA:COM (AUTOSAR XML) and/or SOME/IP or DDS specifically. In other words how is a signal definition converted to a 'Service'? Or should it simply be observable properties (Fields in SOME/IP).
- The AUTOSAR spec Signal2Service seems still unclear to many. Perhaps further investigation required.
- Can we define the actual purpose of the specification? If so, there is opportunity for any one here to propose potential solutions or to 'unstuck' this activity somehow.

Wednesday 2021-02-10

MQTT (and general design) discussion

- SSL/TLS setup between MQTT server and MQTT client could have bi-directional authentication (checking also client certificate)
- Authentication method for the initial CONNECT can be any one that client+server both support.
- One approach is to allow any client to get any MQTT topic, but the data itself is encrypted and then only those who can decrypt have access to the data in practice.
- Another (VISS and other) consider applying filters on the signals (MQTT:topics) that you can actually request. E.g. Vehicle/Cabin /Temperature. E.g. Mosquitto plugins can be used for this.
- VSS Layer (<link) a possibility to define permissions groups (for any of the technology choices or approaches above).
- Bosch proposes the use of the SSI approach: https://en.wikipedia.org/wiki/Self-sovereign_identity
 - ... but SSL/TLS is also required in some environments e.g. across internet

Open areas for getting started on implementation

- Mapping VSS to popular cloud/infrastructure technologies Apache Kafka/Spark/NiFi etc.
- What about VSSo?
- Which existing technologies do VSSo fit into?
 - VSSo maps well to GraphQL (or SPARQL of course). Web-of-things is there an obvious implementation/framework to use in implementing?
 - For GraphQL there is Apollo, Neo4j, maybe others.
 - Protege / Webprotege development/analysis of ontology/data?

Action: Collect more information from more companies about preferred technologies/implementations.

Wednesday 2021-02-03

US friendly time 17:00 CET

Agenda

- project scoping
- upcoming CVII workshop

Participants

- Christian H, Christian K, Dirk, Sebastian (Bosch)
- Niclas (Volvo Cars)
- Kevin (High Mobility), Ulf (Geotab), Iyyaz (Cobrasphere) (GENIVI CCS project participants)
- Piotr, Michal, Dariuz, Adam, Stefan, (TietoEVRY)
- Ted (W3C), Gunnar, Stephen, Philippe (GENIVI)

Notes

project scoping

- review of [CVII Tech Stack](#), updated on line
- Dirk shows latest status of Bosch VAPP project implementation, slide deck can be shared once the code is published in the open

upcoming CVII workshop

- please have a look at [Common Vehicle Interface Initiative \(CVII\) Working Session Details](#)

Wednesday 2021-01-27

US friendly time 17:00 CET

Agenda

- project scoping
- AOB

Participants

- Sebastian, Christian K, Dirk, Gerald (Bosch)

- Niclas (Volvo Cars)
- Kevin (High Mobility), Ulf (Geotab), Iyyaz (Cobrasphere) (GENIVI CCS project participants)
- Rex (Saferide)
- Piotr, Michal, Dariuz, Adam, Stefan, (TietoEVRY)
- Ted (W3C), Gunnar, Stephen, Philippe (GENIVI)

Notes

Project scoping

- discussion starts with MQT, discussion is based on the content of [CVII Tech Stack](#)
- Sebastian: this is a preferred techno, but what should be the reference implementation for the mapping of VSS to MQTT ?
- discussion on code vs specs
- Christian K: code does not lie
- Ted: but it can have bugs (as can specs)
- Ted: a server in cloud could return VSS JSON or VSSo RDF (or other formats) through content negotiation from the same end points based on client preferences
- Christian K: I am convinced there will other standards than CVII in the air, Sensoris for instance, we have already vehicles in development that use Sensoris and I would like to give an opportunity to sync with CVII in the future
- TODO Christian K to contact Sensoris and make the liaison happen with them
- discussion on the interface to AUTOSAR
- Sebastian: we do not need to dig deeply into Adaptive Autosar, our interface point is rather someip for instance
- Dirk: I would assume both data & service mapping with Autosar
- Rex: signal-to-service mapping
- Ted: back to SENSORiS, a mapping may be sufficient for this activity and translators can be created by those who need them. likely would be welcome in GENIVI repo if created, HERE previously showed me some mappings they maintain
- Christian K: TSN, ARA::COM are deeply embedded when we go so deep, we will lose the opportunity to do any abstraction
- TODO all to define what are the high level objectives of constructing an AUTOSAR connection
- Christian K: AUTOSAR is so much in the safety world that it will be difficult to build cool things with them
- Sebastian: we want the data from below, i.e. from the safety world, do we want to write safety critical applications on top of VSC ?
- Gunnar: IMHO VSC can describe a safety critical application but will not implement it
- Dirk: what is the targeted runtime environment ? is the vehicle computer or a deeply embedded ECU ?
- short discussion between Christian K, Dirk and Gunnar
- Gunnar: IMHO the model could apply to any system whatever it safe or not
- Christian: we will take this offline
- Michal: VSS to MQTT , what is the preferred language to implement the translation ?
- Dariuz: I have some experience with MQTT and I am interesting in this translator but not familiar with C++ for instance
- SebastianLet's all use RUST :)
- Gunnar: we could start with python first and see where it goes, but if Tieto says we use Rust, please do it, you know the industry better
- Michal and Dariuz: volunteer for the translator
- Adam: we can bring some feedback on AUTOSAR for the next call