ANDROID™ AUTOMOTIVE SIG

All-Hands – 26 May 2020

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Android Automotive SIG – Topics for today

- Virtual Technical Summit

- VHAL / Vehicle Data APIs

- Audio HAL

- New project opportunities

- Reminder
  - AASIG "All-hands" calls : monthly report delivered on last Tuesday of each month at 5pm CET
    - Minutes: https://at.projects.genivi.org/wiki/x/SIFoAg
  - Vehicle HAL project calls: every week on Tuesday at 5pm CET
    - Minutes: https://at.projects.genivi.org/wiki/x/HYVoAg
  - Audio HAL project calls: every other week on Thursday at 11:30am CET
    - Minutes: https://at.projects.genivi.org/wiki/x/ugDYAg

GENIVI Virtual Technical Summit

Registered Attendees

- 434 registered for the virtual technical summit
  - Members - 252
  - Non-members – 182

- Geographical Stats
  - Germany - 108
  - India - 66
  - USA - 93

Australia, Austria, Brazil, Bulgaria, Canada, Egypt, Israel, Japan, Malaysia, Poland, Portugal, Romania, Russia, Taiwan, Turkey, Ukraine

GENIVI Virtual Technical Summit

Day 1 (YouTube live streaming)

There were 198 unique viewers with 387 total views.

Page views refer to the number of times visitors look at our pages. Unique views are the number of the unique users that clicked on a tracking link of our live stream.

Session Name - Day 2	Participants
Connected Vehicle Software Development	60
Android Automotive SIG #1 - Vehicle Data APIs / Vehicle (HAL)	75
Cybersecurity #1- ISO-21434 in practice	40
Session Name - Day 3	
Android Automotive SIG #2 - Audio (HAL)	60
Cybersecurity #1- ISO-21434 in practice	30
Cloud & Connected Services	50

GENIVI Virtual Technical Summit - Survey Responses

How would you rate this event overall?   -   83% (excellent and really good)

If you attended either of the forward-looking sessions, did you find them relevant to the industry and something GENIVI should act on?

>Yes, I believe the Common Vehicle Interface Initiative is relevant and GENIVI should act on it - 75%
>Yes, I believe the Domain Consolidation topic is relevant and GENIVI should act on it - 42%

Day 2&3 sessions rated Excellent to Good
>AASIG Workshops – 67%
>Cloud & Connected Services – 58%
>Cybersecurity – 50%

Showcase Demo Videos
>42% were very interested
>42% Somewhat interested
>16% did not have time to watch the videos

Easy to access ?
>83% said it was very easy

Survey - What input could you give us to make our next Summit better for you?

- Even surprisingly positive experience. Active discussion and questions from audience visible. In some sense, this worked even better than f2f sessions!

- Thanks, It was the great session

- The topics for the event was relevant.

Summit Debrief:

We reached out through the noise and informed people about the on-going GENIVI work

- **Common Vehicle Interface Initiative**
  - Panel-like discussion thanks to Bosch, McKinsey and Renault
  - Follow-up needs to be undertaken very soon with Microsoft, OEMs, other cloud providers
- **Readouts**
  - Cybersecurity
  - Automated Testing
- **Workshops**
  - AASIG Vehicle Data/VHAL , AASIG Audio HAL , Cloud & Connection Services
  - Very good preparation and leadership provided by GENIVI project team participants
    - Demos delivered by TietoEVRY, High-Mobility, Geotab and Samsung (and shown live)
    - Discussion topics identified and prepared, next milestone content identified
  - Very good participation of a few workshop attendees, many good questions, e.g. AASIG: MBtion, Microsoft, Huawei, GHS, KPIT, Alpine, P3
  - Minutes (and slides) are available in the wiki (thanks to minutes taker), link:
    https://at.projects.genivi.org/wiki/x/QgJUAw

Vehicle Data APIs / VHAL Report

Android Automotive SIG - Vehicle Data APIs - VHAL – External Data Server Concept

Design choices made by the group
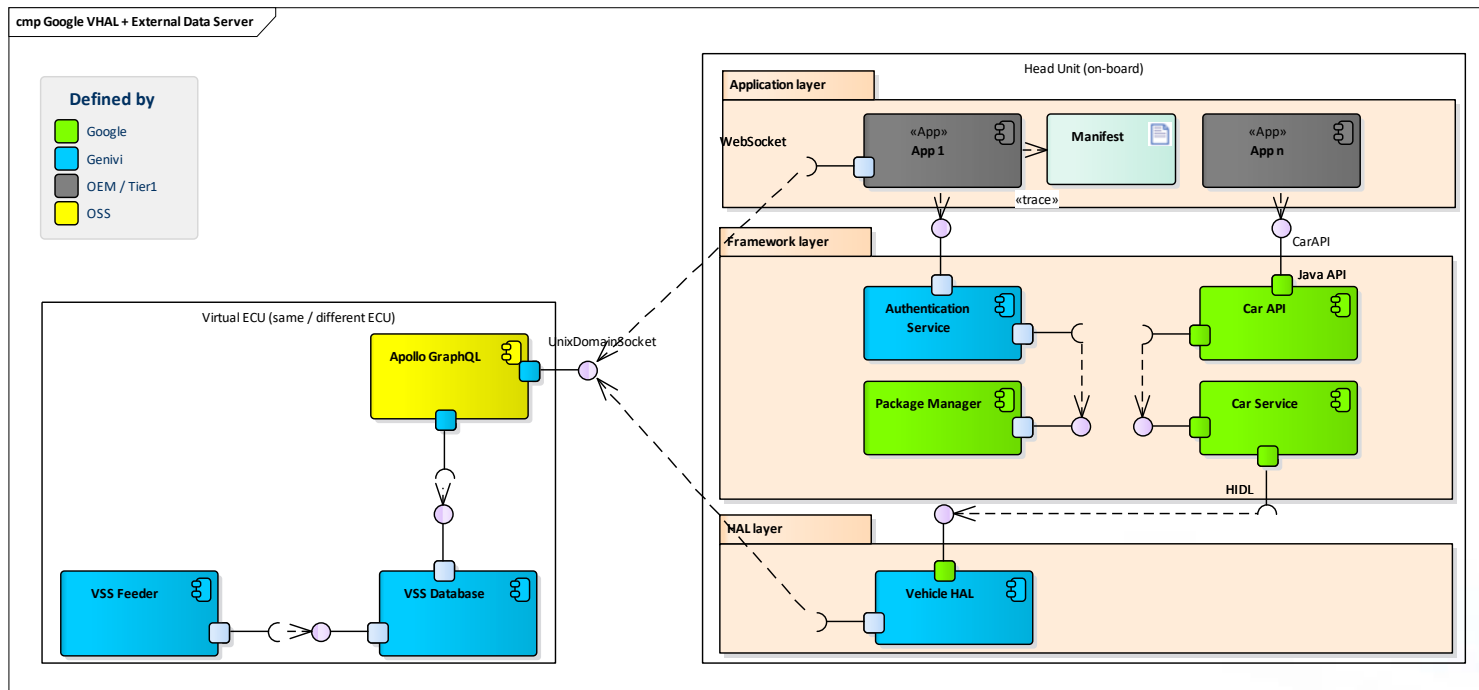
- VSS adoption (Vehicle Signal Specification) – will be introduced in the CCS project report

- Coexistence of Google VHAL and Data Server

- Application authentication

- Interface with the « rest » of the vehicle, e.g. via Some/IP

Android Automotive SIG - Vehicle Data APIs - VHAL – Report

External Data Server Proof-of-Concept

- Implementation in-progress

- Demo was shown in the workshop

  - Authentication Service implementation

    - Sources: https://github.com/stefanwysocki/aasig_dev_platform/tree/develop/vendor/genivi/modules/VssAuthenticationService

  - External Data Server implementation

    - **Data server:** Publishing of GraphQL comprehensive example done

      - Sources: https://github.com/GENIVI/vss-graphql

    - **VSS feeder:** Basic functionality is working

      - Sources: https://github.com/GENIVI/vss-feeder

Several low-hanging fruit activities identified

call for volunteers !! Please contact the team
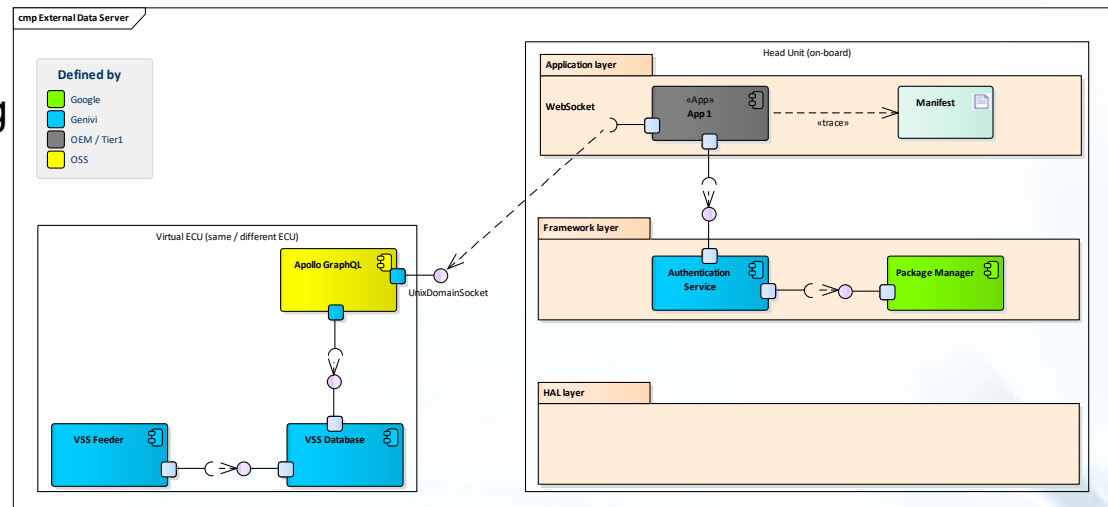
# Android Automotive SIG - Vehicle Data APIs - VHAL – Report

- Team participants: BMW, Daimler, (Jaguar Land Rover), TietoEVRY, Bosch, EPAM

  - Topics discussed at the tech summit

    - Google Vehicle Properties Implementation based on GraphQL Service.

    - Permission groups specification.

    - Translation of permission groups.

    - JWT Token what will be included and how it will be done? And generation process?

  - Next steps towards the next milestone (mid-July)

    - Addition of permission model to GraphQL

    - GraphQL resolver update

    - Sync with CCS project for using the same vehicle data (database)

  - Technical readiness level assessment and discussion on how and when to reaching out to Google

    - VSS as an alternative or complement to Google Vehicle Properties

    - Access to vehicle data via GraphQL instead of Key Value pairs

  - Backlog update in-progress

Audio HAL Report
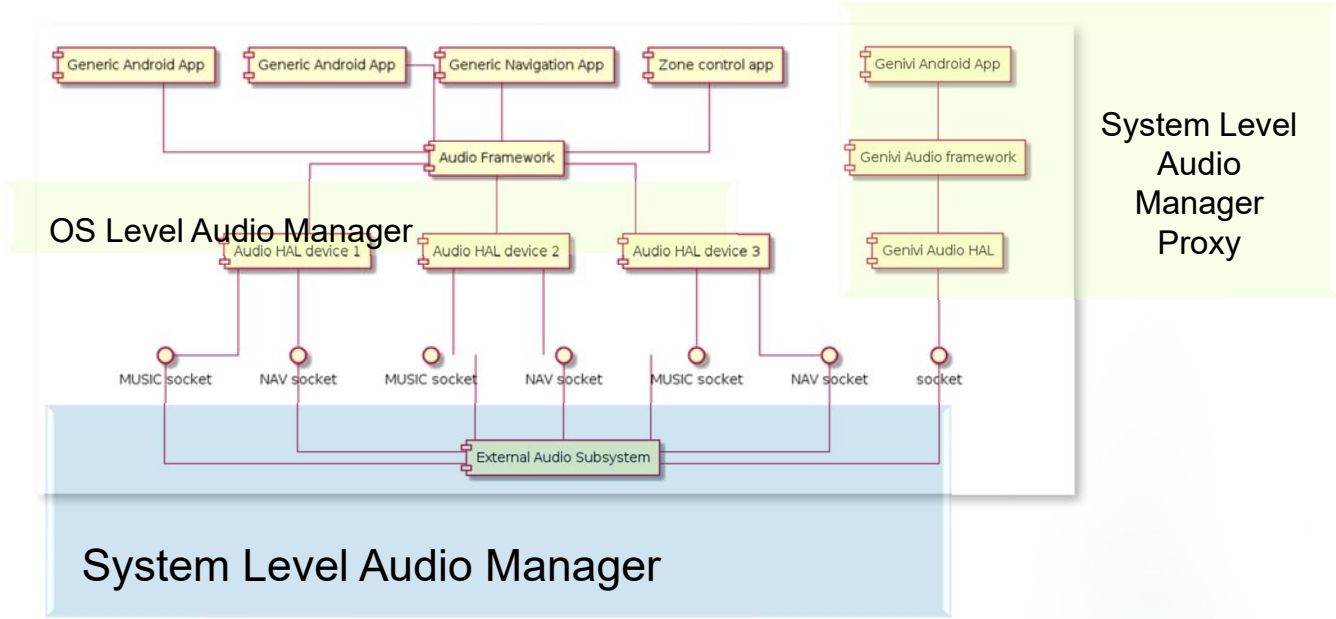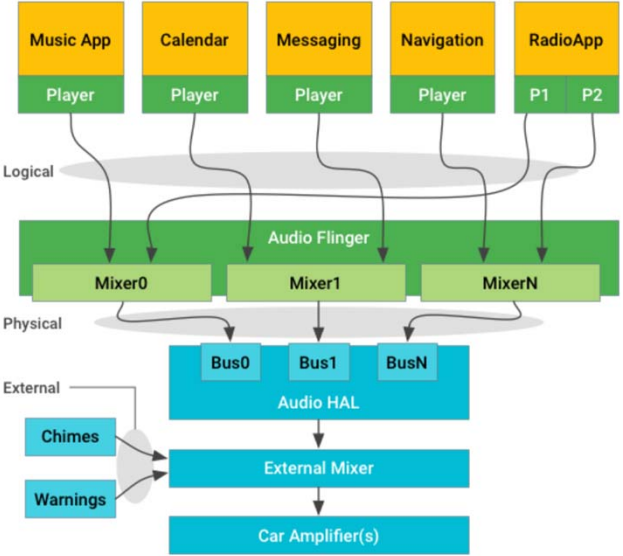
Android Automotive SIG – Audio HAL – Report

- Main thread of work - How to Control a Car Audio System with Android

green and blue boxes can be partitions / virtual machines or different HW
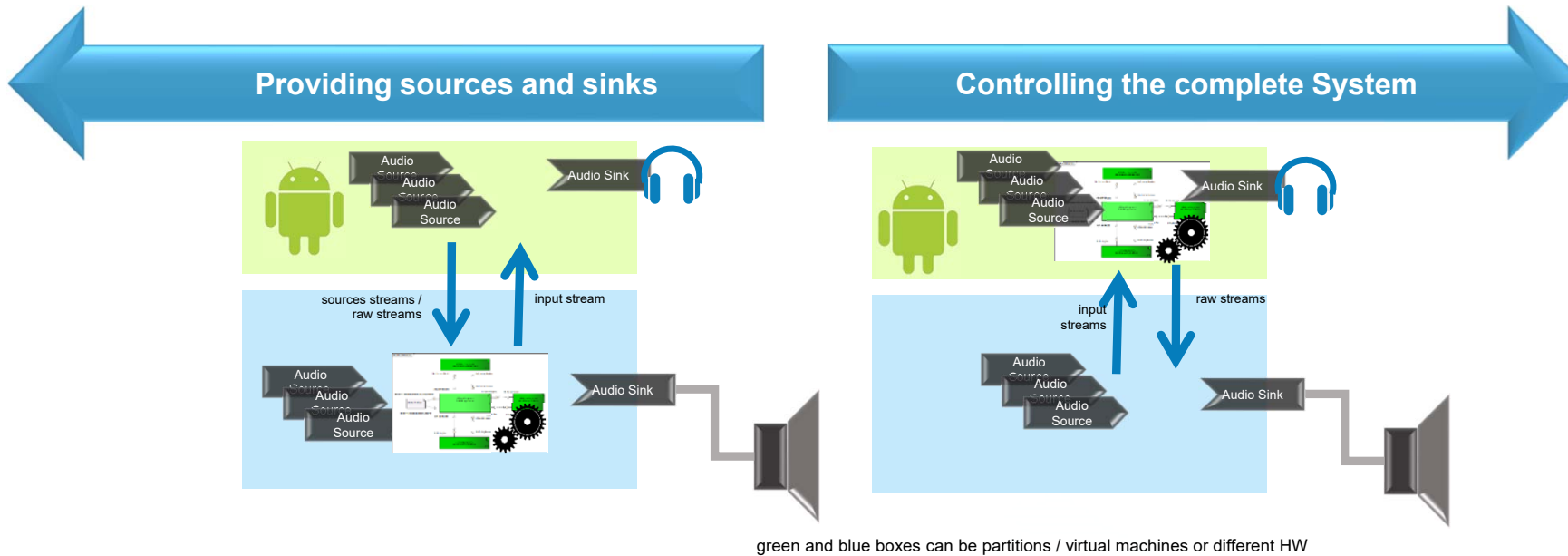
- Both strategies have advantages and disadvantages

  - Relying on Android only does not fulfill some safety requirements

  - Considering Android as sources and sinks only does not take enough advantage of it

- Therefore each topic has to be analyzed and assigned : inside or outside Android

Android Automotive SIG – Audio HAL
Proof Of Concept - Getting Raw Streams

- Reference design from Google side by side to the GENIVI Proof Of Concept proposal
  - Android design relies on an External System (Mixer, Amplifier, Safety signals,…)
  - GENIVI Proof Of Concept tries to provide an concrete instantiation of the Audio Control Split

Android Automotive SIG – Audio HAL – Report

- Team participants: BMW, Mobis, TietoEVRY, EPAM, Bosch, Analog Devices

- Main thread of work - How to Control a Car Audio System with Android
  - proof-of-concept implementation in-progress - Getting raw streams out of Android
    - Demo was shown in the workshop
    - Source code repository https://github.com/GENIVI/android-external-audio-mixing
- Topics discussed at the tech summit
  - Audio Manager integration (Android audio manager & GENIVI Audio Manager co-existence)
  - Proof-of-concept architecture & "prerequisites" : extracting raw streams, injecting input streams
  - Feature content definition for next milestone :
    - Utilization of actual hardware instead of Android emulator
    - Going through the list of prioritized topics for and refining the priorities with participants
- Backlog update in progress

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New project opportunities

- Broadcast radio and Android

- Location-based services and Android
    - How to plug alternate navigation engines

Thank you!

Visit GENIVI:

http://www.genivi.org

http://projects.genivi.org

Contact us:

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