



Welcome & Opening Keynote

Technical Summit – Troy, Michigan

Michael Ziganeck, GENIVI President | 12 November 2019



Agenda

- GENIVI History and Accomplishments
- GENIVI Current Activities
- Tech Summit Overview and Goals

GENIVI History and Accomplishments



CHARTER MEMBERS

BMW GROUP



BOSCH
Invented for life

Mentor[®]
A Siemens Business

Advanced Driver
Information Technology

ALPINE.
Mobile Media Solutions

DENSO

HARMAN
A SAMSUNG COMPANY

HYUNDAI MOBIS



Luxoft
A DXC Technology Company



RENAULT

RENESAS



上汽集团
SAIC MOTOR

ASSOCIATE MEMBERS



APTIV



ARGUS
CYBER SECURITY

ARKAMYS

ARM



clarion



DESAY SV
AUTOMOTIVE



EnGIS
EnGIS Technologies, Inc.

FLEXERA
SOFTWARE



HONDA



HYUNDAI
MOTOR GROUP



irdeto

itemis

KASPERSKY

KPIT



MBITION
Mercedes-Benz Innovation Lab

MEDIATEK



MXNAVI

NAVIS-AMS
Navis Automotive Systems

Neusoft



NXP

O3IGO

OPENSYNERGY

preh
car connect

PSA
GROUPE

QUALCOMM



SoundHound Inc.



Teletchips
Intelligent Automotive Semiconductor



TOMTOM

TUXERA



WIND
AN INTEL COMPANY

ACERTA AVE AUTO MEDIA BLOCK HARBOR CYBERSECURITY DERQ INC DRIVETIME METRICS, INC. HAAS ALERT HUMANISING AUTONOMY INSIGNIARY MYCROFT AI
OPCONNECT PERSEUS CO., LTD SECURETHINGS U.S. INC. THENEXTCO INC. TOME SOFTWARE URBAN.SYSTEMS VUGO XAPIX INC.

GENIVI Accomplishments (2009-2017)

- ✓ Introduced open source software and Linux operating system into the automotive industry
 - Brought OEMs together to align requirements for IVI systems
 - Facilitated collaboration between suppliers to deliver reusable IVI software components and a reference platform based on open source software
- ✓ Built a global, collaborative community where standards and software could be jointly developed, demonstrated, and adopted in commercial products
 - GENIVI software in many brands worldwide
- ✓ Established a global, buyers/sellers network and facilitated high-visibility events where business relationships could develop and grow
 - Highly attended showcases & receptions at CES, TU-Automotive, and GENIVI annual events

So GENIVI declared victory and expanded scope



- Vehicle Software Domain Interaction Strategy (2018-2019)
 - Consolidation of infotainment, safety and connected device software “domains”
 - Example projects: Display sharing, Hypervisor deployment, cross-domain communication protocols, cybersecurity
- Multi-OS Integration (2019)
 - Next logical step to interaction → *integration of operating environments running infotainment, safety and connected devices*
 - Example projects: Android Automotive SIG, Interoperability with Adaptive AUTOSAR, System Health/Debugging/Analysis in a Multi-OS context, evolution of domain interaction projects

And revised our Mission



The GENIVI Alliance develops standard approaches for integrating operating systems and middleware present in the centralized and connected vehicle cockpit.

The alliance links adopters of Android™ Automotive, AUTOSAR, Linux, and other in-vehicle software with solution suppliers resulting in a productive and collaborative community of 100+ members worldwide.

Current GENIVI Activities

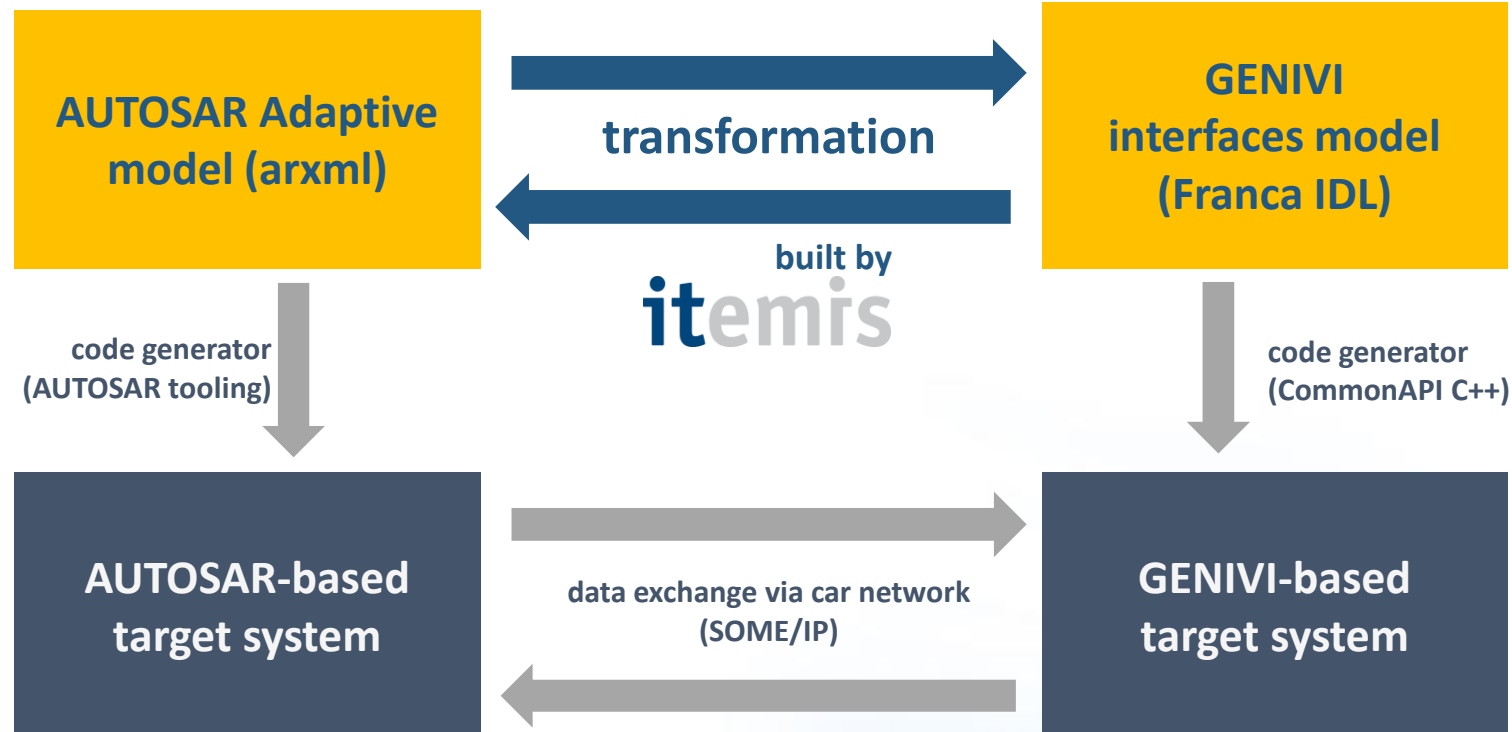


Driving Purpose Behind GENIVI Projects

- Delivering openly developed and shared solutions to the industry for adoption and enhancement to ease integration and save time and money
- In the forms of:
 - Technical Education in Tech Briefs and White Papers
 - API and Component definition in Specifications
 - Functioning Proofs of Concept in Reference code
 - Reusable software components in Project repositories
 - Developer efficiencies through Tooling
 - Eased integration through Shared Architectural Models.

Connecting GENIVI® and AUTOSAR

Automatic model transformation tool for integration of GENIVI models (Franca IDL) and AUTOSAR Adaptive services



Cloud/Connected Services Project Goals



- Primary Goal: To align, combine and integrate technical standards and solutions to achieve a seamless coupling of in-vehicle and back-end architectures resulting in an end-to-end, vehicle computing platform
- The platform shall leverage existing standards but also identify gaps and work collaboratively to fill them
- To achieve this, GENIVI will investigate:
 - Reference software and system architectures for data exchange
 - Data models and their representations
 - Data protocols for requesting data (low to medium speeds)
 - Data protocols and software architecture for big data (high-bandwidth data streams, high-volume processing)
 - Nomenclature, terms, names, definitions and contracts so that we understand each other in both technology and business terms
 - Use cases and requirements to drive the other work areas in the right direction.

Automotive Cybersecurity



- Expanded through June 2018 acquisition of FASTR (Future of Automotive Security Technology Research) and their deliverables in secure SOTA
- Also expanded by recent new member joins with strong cybersecurity portfolio
- Established active liaison relationship with AUTO-ISAC
- Current activities related to threat analysis tooling and relationship to ISO and SAE standards activities
- GENIVI has history of training developers on writing more secure code
- GENIVI is currently viewed as a viable community to develop security approaches for making in-vehicle software more resilient to attack

Tech Summit Overview & Goals





<http://www.thecomicstrips.com/subject/The-Collaboration-Comic-Strips.php>

What is collaboration?

“Collaboration is a way of working that attracts and involves people outside of one’s formal control, organization and expertise to accomplish common goals. Many of today’s most important challenges are so complex and multifaceted that they can only be tackled by teams of experts from disparate domains. To solve them, professionals must be able to harness ideas, people, and resources from across disciplinary and organizational boundaries.”

Source: Heidi K. Gardner and Herminia Ibarra, Harvard Business Review article entitled, “How to Capture Value from Collaboration, Especially If You Are Skeptical About It”, May 2, 2017

Summit Goals

- Establish new relationships and mutually-beneficial dialogs
- Raise the level of active collaboration in the industry
- Put forth GENIVI as one (of many) organizations in which this collaboration can occur
- End with specific work to do in each of the three topics, not a feeling of just having talked

Program Overview



Tuesday Agenda

- 0900-1015 Introductions to Active GENIVI Projects
- 1015-1045 Networking Break
- 1045-1215 Cloud & Connected Services Session 1
- 1215-1345 Networking Lunch
- 1345-1615 Cloud & Connected Services Session 2
Android Automotive SIG Session 1
(1500-1530 Networking Break)
- 1630-1900 Welcome Reception

Wednesday Agenda

- 0830-1000 Cloud & Connected Services Session 3
Android Automotive SIG Session 2
- 1000-1030 Networking Break
- 1030-1200 Automotive Cybersecurity Session 1
- 1200-1330 Networking Lunch
- 1330-1600 Automotive Cybersecurity Session 2
Breakouts on other topics as needed
(1430-1445 Networking Break)

Thank You for Attending!

- All sessions are open
- GENIVI leaders welcome interaction
- Enjoy the Summit!

Thank you!

Visit GENIVI:

<http://www.genivi.org>

<http://projects.genivi.org>

Contact us:

help@genivi.org



BACKUP

Results of Vehicle Domain Interaction Work (2017-2019)



- Developing or Extending Hypervisor APIs
 - Convened strong group of commercial and open source HV providers
 - Publishing a single specification (Automotive Virtualization Platform) delivered openly and with multi-OS support
- Graphics Sharing and Distributed Compositing
 - Comprehensive categorization of how graphics can be shared in cross-domain contexts
 - Tech Briefs published for each category & Ramses code published
- Determining Preferred Generic Communication Protocols
 - Results published from broad survey of protocol usage and preferences
 - Delivered a prototype tool for enabling Adaptive AUTOSAR interop with non-AUTOSAR system (GENIVI IVI) through IDL transformation (Tech Brief published and demo shown at CES) (see next slide)
- Vehicle Data / Cloud Service Models
 - Supported W3C publication of Candidate Recommendation for Vehicle Interface Service Specification (VISS)
 - Developing reference implementations of W3C VISS and Sensoris specs

Parties involved on Domain Interaction : SW vendors, Tiers 1, OEMs

Graphics Sharing &
Distributed
Compositing
GSHA

Parties involved

1. The Qt Company
2. Mentor
3. ADIT
4. Bosch
5. Harman
6. Alpine
7. Allgo
8. Renesas
9. BMW

Developing or
Extending
Hypervisor APIs
HV

Parties involved

1. Opensynergy
2. EPAM
3. Green Hills
4. Perseus
5. Xen, Xvisor - open source
6. Elektrobit
7. ADIT
8. Bosch
9. KPIT
10. Alpine
11. ARM

Determining
Preferred Generic
Communication
Protocols
GPRO

Parties involved

1. Itemis
2. Mentor
3. Visteon
4. Bosch
5. Renault

Connected Car and Cloud

Exemplary SW Reference architecture

