GENIVI for Beginners
April 17, 2018

Steve Crumb
Executive Director GENIVI Alliance

GENIVI is a registered trademark of the GENIVI Alliance in the USA and other countries. Copyright © GENIVI Alliance 2018.
Agenda

• What & Why GENIVI does what we do
• Technical Deliverables and how they are produced
• Getting the word out…GENIVI Marketing
• Where do I go from here?
What & Why GENIVI does what we do
Our Mission

to drive the broad adoption of open source, In-Vehicle Infotainment (IVI) software and provide open technology for the connected car
What has GENIVI accomplished?

- 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 25+ brands worldwide
GENIVI’s History

Launched at CeBit (2009)

25 GENIVI solutions across several brands (2014-present)

Vehicle Domain Interaction Strategy Launched (2017-present)

BMW launch of initial GENIVI solution (2013)

Scope expansion into Connected Vehicle (2016)

Adopting Brands
- BMW and Mini
- PSA
- Hyundai/Kia
- Jaguar Land Rover
- Volvo Cars
- Mercedes-Benz
- Alfa Romeo
- Renault
- Nissan
- Suzuki
An Open, IVI & Connected Car Community

- Nonprofit industry alliance
- More than 125 members from across global automotive ecosystem
- Delivering open software for the connected car to reduce costs and accelerate innovation
- 25+ products deployed on five continents

Automakers and Suppliers

Start-ups and Academia

Hardware and Silicon Suppliers

Operating System Vendors and Integration Providers

Independent Software Vendors and Specialty Software Providers
What do Car Consumers Want?

• Full-time connectivity and seamless context switching
  • Car is an extension of their personalized, digital life

• In-car systems to alert, inform, entertain and keep safe the driver and occupants
  • No functional “silos”

• And all at an AFFORDABLE PRICE, SIMPLE TO USE, and absolutely SECURE
How Will Consumers Get What They Want?

• Automakers and their suppliers must **write, test, validate, deliver, manage and update** an ever growing code base (100M LOC+)

• Automakers and their suppliers must **develop vehicle domain interaction functions** that eliminate current silos of safety, infotainment and mobile devices

• Automakers must do so **more efficiently** with **greater reuse** and at **lower cost**

• And they must do all of this **faster and more securely** than ever before
From Automotive Trends to Open Technologies

- GENIVI watches for current and future trends and proactively launches collaborative projects to develop open technologies
  - SOC Consolidation
  - Connected Vehicle (remote vehicle interaction)
  - Graphics on multiple target displays
  - Vehicles in the smart home/city contexts
  - Advanced mapping
  - Streaming of third party content (Netflix, etc.)
(One of Many) Sample Multi-Domain Architecture

Non-safety Domain  Safety Domain  External Domain
GENIVI Vehicle Domain Interaction Strategy

Deliver open standard interfaces and code that bridge multiple car software domains

- Enables cross-industry, collaborative effort
- Simplifies development and improves solution quality
- Addresses an industry-wide challenge of domain interaction
- Leverages expertise already existing in GENIVI community
- Simplifies development and improves solution quality
Domain Interaction Work Done to Date

• Three active projects launched and a fourth launching this week in Munich
• Attend overview this afternoon and working sessions on Wednesday & Thursday

- Graphics Sharing & Distributed HMI Compositing
- System Health, Debugging and Analysis of Distributed Systems
- Determining Preferred Generic Communication Protocols
- Developing or Extending Hypervisor APIs
Technical Deliverables (and how they are produced)
Collaboratively Producing the Necessary Building Blocks

- Flexible architecture for IVI and connected car systems
- Individual software components and standard interfaces
- Integrated development platform (GDP) for experimentation
- Improved tooling for developer efficiently
- Training/mentoring for start-ups
- Pilots that use and improve our technology
What we produce …

GENIVI Technical Deliverables

GENIVI DEVELOPMENT PLATFORM (GDP)

Reference Architecture

Pre-integrated IVI Platform (Baselines)

Individual Software Components

Standard Interfaces and APIs

Compliance Specification

Software Development Environment
What we don’t produce…

Automaker and Tier1 Supplier Domain
- Differentiation
- Integration
- Commercial and Proprietary solutions
- Implementation Competition

Alliance Domain
- Non-differentiating features
- Consolidated Requirements
- Auto Specific Middleware
- Validation/Compliance

HMI - Human Machine Interface
- Apps
- OSV Extensions
- Libs

Open Source IVI Stack
- Open Source Kernel
How we produce it … in the open

• Well-defined, short term technology projects
  • Specific focus, fixed term, clear deliverables
• Work in existing “upstream” code projects
  • Requirements, patches submitted
• Work in GENIVI hosted code projects (www.github.com/genivi)
  • GENIVI infrastructure where code can be maintained and become “upstream” to others
• Tools Team
  • Explores and proposes best-in-class tooling for GENIVI work
• GENIVI Development Platform (GDP) project & deliverables
• Marketing & Events
  • Brings awareness of GENIVI output
  • Encourages adoption
• Technical discussions on genivi-projects email list
• Wiki at at.projects.genivi.org/wiki
With help from a supporting cast of member volunteers

- Expert Groups (EGs)
  - Aligns requirements, identifies existing solutions or produce scope of work if solution is not available
  - Proposes content for compliance specification
- System Architecture Team (SAT)
  - Maintains consistent architecture
  - Manages Compliance Program
- Program Management Office (PMO)
  - Coordinates EGs, SAT, others
- Security Team
- Baseline Integration Team (BIT)
  - Produces development baselines
- Technical discussions on *genivi-dev* (members)
- Wiki at [wiki.genivi.org](http://wiki.genivi.org)
What you can do about it…

• Email the helpdesk ([help@genivi.org](mailto:help@genivi.org)) to join genivi-dev or genivi-projects email lists (for technical discussions)
• Engage in projects, groups, and teams
• Download and build the GENIVI Development Platform (GDP)
• Familiarize yourself with the internal and external wikis
• Ask questions this week
Getting the word out…GENIVI Marketing
Three priorities of GENIVI marketing

Perception
- Messaging
- Communication
- PR/ Analyst/ Media Relations
- Branding

Adoption
- Product Management
- Market/ Trend Awareness
- Outreach

Membership
- New Member Recruitment
- Member Retention
- Industry and Member Events

Member Collaboration and Marketing Staff
GENIVI engages the world
Ways to contribute…

- Talk about GENIVI in your blogs, webinars and materials
- Pass on the GENIVI newsletters to internal stakeholders
- Offer to write GENIVI newsletter articles
- Represent GENIVI on panels/talks at industry events
- Demonstrate your GENIVI solution at Showcases
- Suggest a GENIVI user/adoption story
- Re-tweet, re-post GENIVI announcements on social media channels
- Make your colleagues, partners and clients aware of the great things GENIVI is doing
WHERE do I go from here?
That depends on what you do

- Key to successful engagement is… Aligning what you do in your “day job” with what you do in GENIVI
  - Requirements engineer … then offer use cases in a project, expert group or team
  - Developer … then develop in an open code project
  - Architect … then help with architecture in a project, expert group or team
  - Product manager … help GENIVI identify trends
  - Manager … find ways of aligning your staff to GENIVI’s needs
  - Executive … keep signing those renewal checks😊
Here are some hints

• Listen carefully to this week’s announcements and status updates (especially, during today’s Keynote)
• Meet GENIVI ‘veterans’ and ask questions (Breaks, receptions)
• Read “top ten” on GENIVI wiki (https://collab.genivi.org/wiki/display/genivi/New+to+GENIVI)
• Determine interest in requirements, coding, compliance activities and engage (focus, don’t spread too thin)
• Join and read genivi-dev and genivi-projects email lists
• Spend time regularly in the wikis to know what is going on in GENIVI and how you can actively engage
• Look for various GENIVI communications (newsletter, blogs, social media)
Don’t Miss…

• Member Keynote (next session)
• Status Update on Domain Interaction Strategy & Projects
• Status Updates on Technical work & the Future of Development in GENIVI
• Networking Reception (tonight)
• Wednesday & Thursday: Separate parallel programs
• Demonstration Showcase & Networking Reception (5:30 pm Wednesday)
Questions?

• Membership or finance related – help@genivi.org
• General Alliance – scrumb@genivi.org
• Tooling/Technical – ncontino@genivi.org
• Marketing/PR – media@mail.genivi.org
• Marketing Events - mikenunnery@comcast.net
• All Member Meetings – karinha@khansonevents.com
• All other – help@genivi.org
Thank you!

Visit GENIVI at http://www.genivi.org or http://projects.genivi.org
Contact us: scrumb@genivi.org (Steve Crumb, Executive Director)