FOSS For Automotive Developed In The Open Becomes Real

Leon Avani / Agustin Benito Bethencourt / Changhyeok Bae
Software Engineer / Principal Consultant, FOSS / GDP maintainer
Konsulko Group / Codethink Ltd / GENIVI community

ELCE
Wed Oct 12th 2016
Speakers: chbae, leon-anavi & toscalix

- **Changhyeok Bae** (chbae)
  - GDP Maintainer (community). Research Engineer at LG Electronics.
  - Experienced OpenEmbedded/Yocto developer.

- **Leon Anavi** (leon-anavi)
  - GDP contributor. Software Engineer at Konsulko Group.
  - Automotive IVI solution expert.

- **Agustín Benito Bethencourt** (toscalix)
  - GDP team lead. Principal Consultant - FOSS at Codethink Ltd.
  - Experienced in managing people & programs/projects in the open.
Who is the GENIVI Alliance

The GENIVI Community is currently represented by 140 member companies…

… committed to driving the broad adoption of specified, Open Source, In-Vehicle Infotainment software.
What does GENIVI Alliance do?

- Development of FOSS components for automotive.
- Delivery of Linux Based systems for automotive.
- Automotive Industry Specifications and GENIVI Compliance Program.
- Organization and participation in industry events.
- Open Source awareness within the automotive industry.
GENIVI Delivery

- **Baselines**: outcome of the compliance program.
  - Yocto baseline (meta-ivi).
  - Baserock baseline.
- **Master**: rolling release: focused on auto system devs
- **GDP**: GENIVI Development Platform for apps devs.
- **New initiatives**.
  - GDP spins: community driven systems based on Master
  - GDP SDK: development tools
Why Master?

- Where collaboration takes place.
- Latest automotive software available.
  - In OSS for automotive, GENIVI is upstream.
- Targets FOSS auto system devs. & GDP contributors.
- Build GDP from scratch for your favourite target or customise your build.
What is Master?

- **Rolling release** with the latest integrated software for automotive.
- Central integration point.
- Yocto (poky) based.
- Two main repos:
  - genivi-dev-platform
  - meta-genivi-dev
Why GDP?

- It brings GENIVI components for automotive to the masses, including meta-ivi.
- Ideal for app developers and automotive newbies.
- Up to date stable software.
- Easier to consume and improved stability.
What is GDP?

- Acronym of **GENIVI Development Platform**
- FOSS and open delivery project.
- Published as binaries.
- GDP is based on Master (snapshot + stabilization).
- Available for several development boards & QEMU.
- Current stable version (**GDP-ivi9**)  
  - Latest release: **GDP 11 RC2**.
GDP block diagram...
People behind Master & GDP

Delivery

- GDP maintainers
  - Changhyeok Bae, community.
  - Robert Marshall, Codethink Ltd.
  - Tom Pollard, Codethink Ltd.
  - Community testers.

- Other key people:
  - Meta-ivi & Renesas BSP maintainers, community management, devops/IT service, PMO, delivery team lead, GENIVI architect, LRT team …

Development

- GENIVI Expert Groups
- Community contributors
Tools GDP project uses today:

- **GitHub**: git repositories and code review.
- **JIRA**: bug tracker and task management tool.
- **Confluence**: wiki and blog.
- **go.cd**: integration/delivery mgnt.
- **Mailman**: genivi-projects@lists.genivi.org
- **IRC**: #automotive at irc.freenode.net
GDP roadmap

GDP 11 Timeline
GDP 11 RC2, the latest release

- **Released** on October 4\(^{th}\) 2016. **Download** it!
- Demoed for the first time at ELCE.
- **GDP 11 RC2 highlights:**
  - Software: Yocto 2.1, Qt 5.6, AM 7.0, wayland-ivi-extension 1.10.9 (1.11 pre-release), meta-ivi 11…
  - Ports: QEMU, RPi2 & RPi3, Intel Minnowboard MAX/Turbot and Dragonboard 410c. Also build GDP for Renesas Porter & Silk from scratch.
Example of a contribution to GDP: GENIVI SOTA Project

- A complete suite for uploading, managing, queueing, transmitting, validating, and deploying software updates remotely to a fleet of vehicles
- Server + Client
- Open source repositories in GENIVI GitHub
Example of a contribution to GDP: SOTA Client

- SOTA client implementation written in the Rust programming language
- Remote Vehicle Interaction (RVI) and/or HTTPS communication based on JSON-RPC
- Integration of RVI SOTA Client in Automotive Grade Linux (AGL) and GENIVI Development Platform (GDP) through Yocto/OE recipes and layer meta-rust
Layer meta-rust provides recipes for building Rust and Cargo: **Yocto/OE layer for Rust**

Recipe rvi-sota-client_git.bb in layer meta-genivi-dev which builds and deploys RVI SOTA client and its systemd service

**RVI SOTA Client**

- [https://github.com/advancedtelematic/rvi_sota_client.git](https://github.com/advancedtelematic/rvi_sota_client.git)
- [https://github.com/GENIVI/rvi_sota_client.git](https://github.com/GENIVI/rvi_sota_client.git)
Future of GDP

● GDP 11 to be released before end of 2016
  ○ New App. Launcher (developed by ICS) with new demo apps.
  ○ 15th GENIVI AMM, SFO, CA, US. Oct 18th 2016
    ■ App launcher preview + GDP Hands on Session

● New deliverables:
  ○ SDK proof of concept + GDP spin for Qt Developers.

● First steps:
  ○ Towards automated acceptance testing.
  ○ Measure release impact.
But above all…

More focus on automotive developers.

Check the latest GDP news.
Interesting links

- **www.genivi.org**
  - GENIVI FAQ
  - GDP latest GDP news

- **GDP Master**
  - genivi-dev-platform
  - meta-genivi-dev

- **Download:**
  - GDP-11 RC2
  - GDP-ivi9

- **Get involved:**
  - Get the sources
  - Contribution policies
  - Report bugs

- **Follow up**
  - Delivery status reports
  - GDP overview (weekly)
  - GDP Out There
Questions?

Call for testing

GDP 11 RC2