



Graphics Sharing and Distributed HMI Compositing

2017-11-16 Project Kick Off Meeting

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AGENDA



1. Context – Vehicle Domain Interaction Strategy
2. First definition of Graphics Sharing project
3. Review and refine initial goals of the project
4. Practicalities - issue tracker, mailing list, meeting setup
5. Introduction to Waltham (Daniel Stone, Collabora)
6. Introduction to Ramses (Bernhard Kisslinger, BMW) (slot #2)
7. Presentation of project participants, background, interest and planned participation
8. Free form discussion - immediate thoughts? other technologies to be aware of?
Partitioning the work into different areas of investigation
9. Participant feedback on goals – prioritization
10. Review actions, next steps.

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

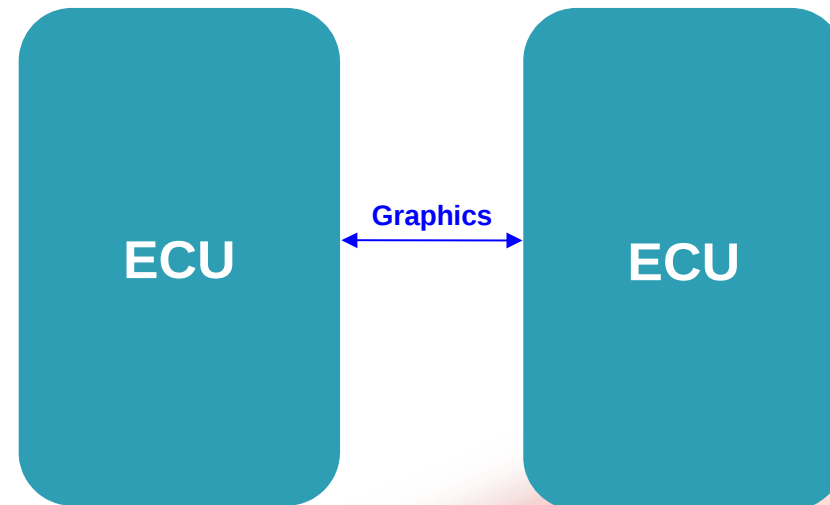
Vehicle Domain Interaction Strategy - Resources



- Large interest since GENIVI first announced the Vehicle Domain Interaction Strategy – leading to many questions
- To meet the demand we have created a Frequently Asked Questions document for the most common questions: <http://tinyurl.com/DIROFAQ>
- Please refer to the FAQ for general questions about Vehicle Domain Interaction Strategy.
- Also:
 - **Strategy Home Page** (Wiki): <http://tinyurl.com/DIROHOME>
 - Strategy **KickOff Slides** and **Recorded Webinar** ^ links on Home page
 - [Project registration/survey](#) (fill in, to be kept informed)

Vehicle Domain Interaction Strategy = multiple projects

- **TODAY:** Start Project #1
Graphics Sharing & Distributed HMI Compositing
- First among first 4 priority projects



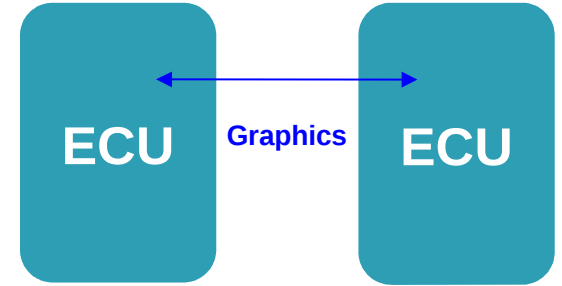
(Reminder)

Project Candidates Identified During AMM Workshops in Seoul



1. Graphics sharing & Distributed HMI Compositing
2. Developing or Extending Hypervisor APIs
3. Determining Preferred Generic Communication Protocols
4. User Input Distribution and Coordination
5. System Health/Debugging/Analysis (incl. Log & Trace)
6. Distributed System Lifecycle / Node State
7. Network Traffic routing & accounting (priority/bandwidth/payment...)
8. (Distributed) Audio management
9. Distributed User / Login / Profile management

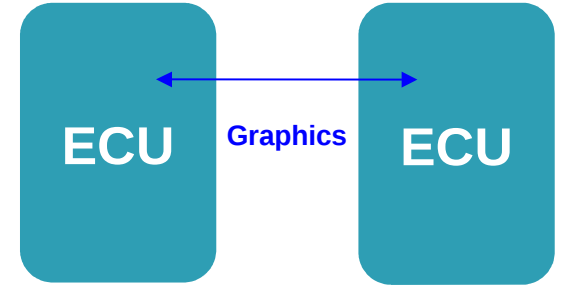
Scope and definitions (first proposal)



- **Graphics Sharing =**

- *“Graphics in the form of bitmap, scene graph or drawing commands generated on one ECU, transferred for display from another ECU (or between virtual machine instances)”*
- We are concerned with over-the-network protocols, and Hypervisor facilitated solutions (GPU sharing), independently
- Not primarily focused on simple encoded video-distribution topics, although video compression might be part of the solutions. (But if it’s an appropriate candidate for general-purpose transfer, we should investigate/compare/clarify).

Scope and definitions #2 (first proposal)



- **Distributed HMI Compositing =**

- *“Dealing with technologies and methods to turn a multi-ECU system into what appears and acts as a single user-experience”.*

- Conceptually extends “graphics sharing” to the ability of requesting an “application HMI” to be shown on another ECU.
- Boundary might be a bit vague
- Relates to some common “application management”, details unknown?

Project Goals (first proposal)

- All project participants gain *thorough* understanding of available choices
- Produce technology demonstrators, newly created or (if exists already) found and highlighted.
- Publish hard data on learning: Performance, resource needs..
- Seek industry acceptance & alignment among Linux distributions
- Separately identify and describe Hypervisor-based opportunities, how they differ, characteristics, advantages and disadvantages.
- Seek alignment on solutions (protocols) among “closed” alternative proponents – i.e. other operating systems, commercial HMI-tools, etc.
- Promote *open* standards and implementations across industry
- Summarize and create (implementation) documentation for recommended choices

Practicalities

- Need clear commitments from project participants
- A project to achieve results! Those willing to actually work will organize (or self-organize) around a functioning meeting schedule.
- Volunteers for project leader?
- Time poll, or just set a time?
- Mailing list: [genivi-projects @lists.genivi.org](mailto:genivi-projects@lists.genivi.org)
- JIRA tracker
(<https://at.projects.genivi.org/jira/projects/GRAS> - to be created)

Introduction to Waltham (networked Wayland protocol)



1. Daniel Stone presenting

Introduction to Ramses



Bernhard Kisslinger presenting

Remaining Agenda

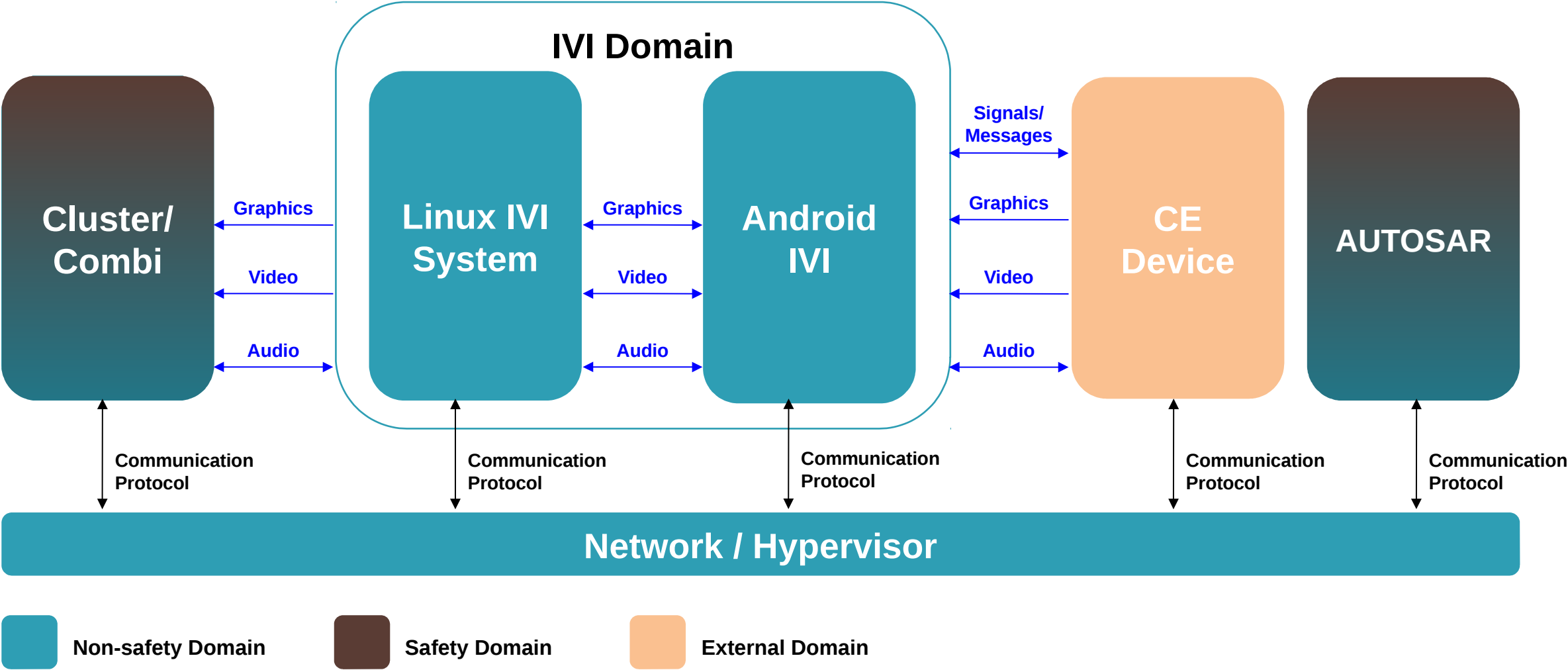
- Presentation of project participants, background, interest and planned participation
- Free form discussion
 - - immediate thoughts?
 - - other technologies to be aware of?
 - - Partitioning the work into different areas of investigation
- Participant feedback on goals – prioritization
- Review actions, next steps.

BACKUP SLIDES



1. (if needed to support conversation)

Supporting ECU architecture picture (example)



- 1.
2. Register yourself to projects on the on-line GENIVI Domain Interaction form & survey (<https://www.surveymonkey.com/r/JZJV5KP>)
3. Project #1: **Graphics Sharing and HMI Coordination**
 - Project start: **Thursday, November 16**
 - how to join: <https://at.projects.genivi.org/wiki/x/sIP0>
4. Projects #2, #3 and #4 – meeting times to be announced
– register your interest on the on-line form (<https://www.surveymonkey.com/r/JZJV5KP>)
5. Questions? Philippe Robin philippe.robin@technoveo.com
Gunnar Andersson gandersson@genivi.org
Use the community mailing list ! genivi-projects@lists.genivi.org