GENIVI Multi-OS Integration Project

15 May 2019

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Agenda

- Review of Draft Project Charter
- Open Discussion
- Next Steps

Draft Project Charter Review

Opportunity Statement

- Trends in vehicle electronics and software architectures have led many OEMs to move toward a centralized compute strategy that functionally consolidates safety, infotainment and connectivity domains. Increasingly, operating systems that manage previously separated domains must now work together to result in the integrated, multi-OS cockpit that OEMs prefer.

- OEMs are finding challenges to integrating operating systems like Android™ Automotive, Linux, AUTOSAR, QNX, Integrity™ and various other in-vehicle operating systems, some of which may be deployed primarily in a regional context such as China.

- Through a Multi-OS Integration project, OEMs, their suppliers and the broader cockpit software ecosystem can discuss requirements, identify gaps and provide an aligned, community voice for discussion with providers and integrators of the numerous operating systems in the centralized cockpit. Resulting solutions and integration approaches should make building, enhancing, deploying, securing and managing central cockpit software more efficient and less costly.

Proposed Areas of Project Focus

Current project focus areas are listed here with an expectation that these will be refined after project launch and potentially other areas added:

1. Cluster and IVI integration (includes safety, graphics sharing, communication protocols) (18)
   Standard interfaces/partition quality measures (e.g., ASIL levels)
   Boundaries between OS's

2. Partition lifecycle management (separate long-term & short-term software production) (6)

3. Hypervisor - OS standardization (virtual device and platform specification) (24)

4. Software platform portability on multiple OSes and Hypervisors (4)

5. Region-specific OS's - Simplify integration (2)

6. Configuration management – end of line, SOTA over OS boundaries (7)

7. Debugging in a Multi-OS context (Logging, Tracing, Profiling) (24)

8. Security and Safety (and the interplay between the two) (21)

9. Analyze existing domains and determine how many OSes (and combinations) are really needed with a desire to limit complexity (11)

Organizations targeted for participation

- **OEMs**
  - BMW
  - Hyundai Motor
  - PSA
  - Renault/Nissan/Mitsubishi Alliance
  - Ford

- **Suppliers**
  - Bosch
  - LGE
  - Mentor
  - Renesas
  - Green Hills
  - QNX

- **Others**
  - AUTOSAR consortium
  - Hypervisor vendors
  - Alibaba

For your Information

- GENIVI and AUTOSAR Consortium are actively discussing methodologies for collaborating more actively on topics related to integration of Adaptive AUTOSAR
  - GENIVI-funded France/ARA::COM project is one related activity
- Current Domain Interaction projects including the Hypervisor Project that is standardizing virtualization in the vehicle
- GENIVI has held an initial call with Alibaba about their interest and participation in the project

Next Steps

- Prioritize initial target(s)
  - Establish momentum on a "first topic" – based on ACTIVE participation and contribution
    - Clearly define approach and intended deliverable(s)
- Establish cadence of activity
  - Weekly/bi-weekly teleconference(s) on specific topics
- Establish topic ownership
  - GENIVI provides PMO support, but topics should be led by member representatives

Thank you!

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