GENIVI Vehicle Domain Interaction Strategy
Frequently Asked Questions

General

What is the GENIVI Vehicle Domain Interaction Strategy?
The GENIVI Vehicle Domain Interaction Strategy is a new strategic focus with the goal of developing open standard interfaces and code that will define the necessary paths for bridging multiple car software domains (e.g., safety, infotainment and consumer electronic). Bridging multiple car software domains, required by the need for a unified passenger interaction across different in-car systems, is one of many challenges resulting from trends like system on a chip (SOC) consolidation.

Why is this new strategy important?
Interaction between domains is essential to ensure information generated in one domain can be displayed in another and to ensure that domains can influence and command each other.
While vehicle domain interaction is a well-known challenge, GENIVI has a unique opportunity to collaborate with members and non-members to play an integral role in defining the necessary cross-domain paths and protocols.

Why is GENIVI taking on this new strategy?
GENIVI leadership understands that domain interaction is a challenge under discussion in many GENIVI member and non-member companies. This challenge will be solved either through multiple, independent, proprietary solutions, or from a collaborative, open standards-based approach. GENIVI, with its strong history of architecture, API, and code development, is uniquely positioned to lead the standardization of open solutions, in collaboration with other standards bodies and code-producing organizations.

What deliverables are expected as a result of this domain interaction strategy?
Creating and delivering standard interfaces with reference code is clearly the first goal. Specifically, GENIVI believes that to fully accomplish the strategy, the output of the strategy will be use cases, interface definitions, models, proofs of concept code, documentation, and adopter education. These will be delivered iteratively as the boundaries between different domains are explored in individual projects. These deliverables will be available in the open to the broader industry.

Implementation and Technology

How does the world of domain controllers for specific areas of the vehicle (e.g., Cockpit DCs, ADAS DCs, etc.) fit into the new strategy?
GENIVI understands that there may be different usages of the term “domain” in the industry. Some use "Domain Controllers" as a way to partition functionality into differently named physical and virtual boxes, and these can even differ across OEMs. The use of the safety domain, for example, covers many functions typically regarded as required for driver safety. GENIVI has identified “3+1” software domains that are part of the strategy. The three – safety, IVI, and consumer electronics – are well understood but will require definition as part of the strategy work. The “+1” is connectivity which spans the entire vehicle software context, which is why GENIVI considers it slightly different from the targeted three.

How will the GENIVI Vehicle Domain Interaction Strategy work get done?
GENIVI has identified a short list of priority projects to advance the strategy initially. While the specific approach may change in the future, projects will be launched around cross-domain topics like graphics sharing, extending hypervisor APIs, and user input distribution. GENIVI will launch and coordinate these projects and welcomes contributions from anyone. Projects will have a dedicated, public Wiki presence (http://at.projects.genivi.org) and project announcements will be made on a public email list (genivi-projects@lists.genivi.org).

Who in GENIVI will be leading the cross domain work effort and how can interested parties participate and contribute?
GENIVI will provide project management and technical facilitation resources for domain interaction projects. These resources include GENIVI PMO Lead (Philippe Robin) and Development Lead (Gunnar Andersson). However, the projects can only be successful as contributors from interested parties participate. GENIVI has opened a web form (https://www.surveymonkey.com/r/JZJV5KP) where interested parties can indicate their project interests.

Collaboration and Partnerships

What partner organizations will be involved?
Domain interaction between IVI and Safety will require organizations like AUTOSAR and perhaps QNX to weigh in on use cases and early approaches to standard interfaces. In the CE domain, Google Android and internet organizations like Alibaba and Baidu may also be targeted organizations for this work. As we expand into interaction outside the car, organizations like W3C and OCF also become important to the work.

What is the value for QNX, LF AGL and Google (Android) to collaborate with GENIVI in this effort?
Standardization of interfaces between the various domains would likely increase the quality, simplify the testing, and expand the reach of the respective organizations listed above. GENIVI wants to stay aligned with OEM requirements and cross-domain interaction is clearly one requirement that isn't going away. So the benefit is to provide what the "buyer" is asking for.

Will GENIVI collaborate with LF AGL in developing / supporting open interfaces between cockpit, infotainment and telematics?
GENIVI believes that closer collaboration with AGL would be mutually beneficial and would also benefit the entire industry. In particular, collaboration with AGL on these interfaces is a specific goal of this strategy.

GENIVI-Specific Questions

What results does GENIVI expect from the Vehicle Domain Strategy and how will the Alliance benefit?
In addition to the deliverables of standard interfaces and code, GENIVI envisions many positive outcomes coming from this strategy. The cross-organizational collaboration required to define these interfaces will bring the industry together in a more productive and mutually-beneficial way. The automotive industry as a whole will benefit by consistently employing the defined interfaces for cross-domain functionality, data management, and other needs. This will result in more efficient development, improved testing and quality, and ultimately, more choice for buyers of the solutions through use of a consistent standard.

How will GENIVI prioritize the domains that are addressed?
Clearly, GENIVI has expertise in the IVI domain so priority is placed on the other software domains that interact with IVI. The most obvious are safety (cluster), cockpit controller and consumer electronics. Another domain that GENIVI has already worked on is connectivity, which can include car-to-cloud and V2X.

Will the Vehicle Domain Interaction Strategy take the place of the Alliance's current focus on IVI, connected vehicle or the GENIVI Development Platform (GDP)?
The Vehicle Domain Interaction Strategy will not replace any current GENIVI strategies or programs. GENIVI programs will balance current IVI and connected vehicle work with newly launched activities to produce the technologies that allow for domain interaction. The community should be aware that GENIVI is not abandoning its mission of delivering open IVI and connected vehicle software based on contributions by members that are used in the GDP as well as numerous commercial and open source platforms. The Vehicle Domain Interaction Strategy simply adds a cross-domain element to the Alliance's mission.