Visteon Position Paper

REVISION HISTORY			
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Contents

Abstract

Visteon Position Paper for the Web And Automotive W3C Workshop 2012

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1 Perspective on the topic of the Workshop

Our Visteon center of expertise for HMI located in Sophia Antipolis, France is mainly focused on the development of new-generation HMIs for our customers (car Manufacturers) but also on transversal frameworks and tools to reduce the development time of new applications.

We have initiated some projects to ease the transition from prototyping tools to the embedded targets deployment. Visteon is particularly interested in the multi-modal, context aware applications for infotainment and ADAS use cases.

In our products and prototypes, we face many heterogeneous interactions between various devices (android phones and tablets, iOs devices, Linux embedded platforms) and protocols (car specific, web socket, tcp/ip connections) and we have developed some solutions to bring the web and consumer electronics power and short cycles to the embedded automotive world.

Figure 1: Customization

2 Viewpoint

All majors car equipment manufacturers and Tier-1 providers have experienced the shrinking gap between the Web technologies and the more traditional embedded software development approach.

Now, web applications and HTML5 can nearly supersede former traditional approaches for most of the infotainment needs in terms of client applications. Nonetheless, safety concerns and more architectural issues leave the room for specific frameworks and servers to hide and abstract the various car services and modules (audio, climate, infotainment, cameras, clusters, . . .). We have developed a software framework to ease the integration of automotive specific modules and APIs able to communicate with various clients (HTML5, Flash, Qt, . . .).

We are really interested in standard and common definition of APIs for various heterogeneous clients to exchange rich media data. We are also following the features allowed by HTML5 and websocket to see if they can describe our logics (state charts) and graphics (animations, transition, 3D, layers) needs.

3   Concrete examples, suggestions, and preferred workshop items

- Visteon focus on personalization. Car re-design for new usages (car sharing, renting, . . .). User preferences (impacting both graphics and logics of the application, combined with context awareness)

- How to offer the driver and passengers a more compelling multi-modal and context aware interface (off-board speech recognition in the cloud / gesture controls / haptics,. . .)

- Native application Vs Web applications: development times and features. State of the art. Roadmap

- Networking and Web Management and integration with in-car systems. Impacts on architecture

- Machine to Machine (M2M) communication and swarm intelligence (involvement of Visteon in the Designing Distributed Dynamic Cooperative Systems European project)

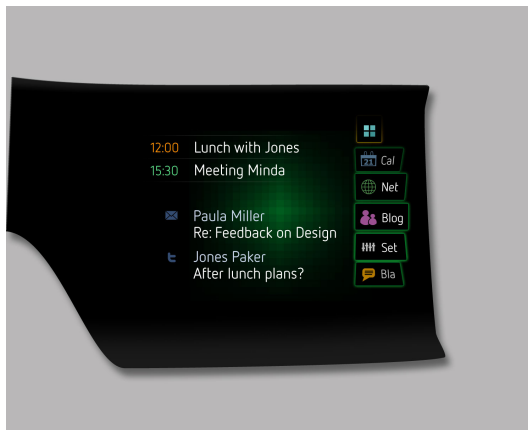- Seamless synchronization with other devices (mobile, house, cloud)

Figure 2: Connected Car

- Interested by the off-board / on-board navigation and voice recognition switch dependant on the context. How to make it transparent for the user (Support for intermittent access to the network)

- Various ways to take control of the car. Delegation of authority issues and dynamic distributed devices (ubiquitous computing). Safety concerns

- SVG Support. Allowed complexity of animations support for automotive needs

- 3D support and Web technologies / formats

- Proposition to centralize the application logic for cockpit HMI and distribute the GUIs over various HTML5 client displays

- Model View Controller based tool-chain that enables you to keep using the graphical environment that best fits on your target. Integration with Web Standards

- Links with Genivi

- Logic / Graphics strong differentiation

- Apart from HTML5, what other web-inpired technologies could be used in the car. . .