

Position Paper for W3C Web on Automotive Workshop

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Introduction

LGE is not only a consumer electronics company, but also a fast growing company in automotive industry, especially for IVI system. IVI system is obviously the first target device which can adopt new Web technologies in automotive area. As a Teir-1 supplier, we have many experiences in developing IVI systems with various OEMs. Thus, we're sure that we can share the comprehensive view point of automotive industry in addition to the experience of applying web technology to our CE devices.

Putting safety first:

Safety has various meanings in automotive world. Thus, we need to identify the meaning and type of safety. At first, there're 3 types of safety considerations regarding a driver.

- (1) Disabling (ban) some features - usually related to regulations
- (2) Helping a driver not to be distracted much - Hands-Free Call, Voice I/F(TTS, VR), convenient control (Steering wheel button, Central Knob), etc.
- (3) Helping a driver to drive more safely - ADAS features (lane departure alarm, speed limit alarm, etc.)

From another perspective, there are additional topics regarding safety. Some softwares in car are very critical to the safe driving, thus a high level of reliability must be ensured. One thing is protecting the system from a malicious code; another thing is ensuring the execution of critical applications such as emergency call.

Relationship between the car and the mobile phone:

Over the past few years, the interaction between the car and the phone is just Hands-free call via Bluetooth. Although it still has an important portion of IVI system, many companies have been troubled with its terrible interoperability issues.

As smartphones have come into wide use, the needs to share more various functions of smartphones onto IVI system is growing and Mirror Link is in the limelight. But it is still struggling to resolve performance and interoperability issues.

Web technology is very attractive alternatives here. Web provides the way to exchange data via well-defined Meta data instead of transferring the whole screen as it is. Therefore, Mirror Link seems to be the proper area which benefits from Web technology.

Creating markets for automotive applications:

Automotive Industry is very OEM-centric, and they have been taking the initiative. So, it looks not easy to build public application market as like smart phone area in the near future. In spite of that, it's very important to make standard in the early stage to prevent fragmentation and the consequent waste. Also, the standardization will be the fundamental foundation to move forward.

We have been interested in the standardized APIs for applications. Especially, applications in IVI system need to access vehicle data, it's the dominantly specialized part of IVI system. The difficulty is too wide variety of vehicle data types and formats depending on both OEMs and Car models even though the data itself is quite similar. So, we think that API set should be made as common as possible to be able to reflect and absorb these varieties.

Improving quality and reducing costs through Web technologies:

Automotive industry tends to be conservative, because it has to consider the safety. So, it was very cautious about the adoption of open source software represented by Linux. But, OSS has great potential for both improving quality and reducing cost.

Recently, Linux began to receive increased attention from automotive industry, but it seems to be lack some features as a complete platform. And Web technology will most likely be able to fill the lack.

Unique opportunities for the automotive user experience:

The one of key applications in IVI system was and continues to be the navigation for a while. But Web based navigation will be able to provide additional benefit than on-board navigation. For instance, more optimized routing based on the prediction of traffic and the latest and more precise Point of Interest would be possible.

In addition, the seamless connectivity with various mobile devices or home appliance would be a good technical topic that can promote user experience to take an advantage of the Web.

Conclusion

There can be various topics on the Web for automotive. As a beginning, we need to prioritize the topics and focus on more important issues to achieve the desired effect from the standardization.

LGE is particularly interested in the standardization of APIs for accessing vehicle data, and we believe that it'll be a high priority topic in which many attendees are interested too. We have been studied how to make APIs more effective and flexible, so that various OEMs can adopt it. We'd like to share the result and to find a better way.