Web and Automotive
W3C Workshop
SUMMARY

01 Car displays are special

02 Technical Challenges

03 Web technologies and standards can help
01

Car displays are special
Cars are specifics

A TV set is an HMI designed to
- Watch Broadcast Program
- Web TV
- …

But you **CAN** still use it as a TV

A Smartphone is an HMI designed to
- Place and answer calls
- Wake
- Go to web
- Control your TV
- …

But you **CAN** still use it as a Phone

A Car Central Display is an HMI designed to
- Listen to the radio
- Be guided
- Place a phone call
- Access WEB
- Control HVAC, ADAS
- …

But you **MUST** still be able to drive your Car
Safety first

- Yes!
  - But not specific to web usage in a car environment
  - Safety is already addressed by usual embedded HMI

- Driver distraction management
  1. Design rules (Human factors) for app developers.
     Should not distract, stress or require a driver action while driving
  2. Validation of the app before its deployment on the application store
     Systems engineering approaches.

Until more dynamic, run-time solutions can be proven
Technical challenges
Challenge - Performance

- **User acceptance level**
  - Design rules, Response time requirements
  - SW and HW optimizations

- **High level for UX**
  - Touch screen, Speech, …
  - Animation, effects
  - Level of integration (feature coexistence)

- **Native applications vs Web Apps**
  - HTML5 Native application possible?
  - or Web Apps Only
Challenges - Functional API definition (1/2)

- For both M2M and user-centric applications
- Harmonized with GENIVI

- API designed for:
  - Performance
  - Scalability and Evolutivity

- Handle Interaction with native applications
  - e.g. Audio management

- Take care of Security / Privacy issues
  - e.g. dynamic access control policies

- Always on-line
  - Need strategies to manage off-line mode
Challenges - Functional API definition (2/2)

- Remain connected (Social network, …)
- Entertainment for all passengers (Audio, Video, …)
- Easier daily life (Calendar, Yellow pages, …)
- Help (BCall, HelpCall,..)
- Trip optimization (Traffic, Parking…)
- Multimodality
- Save money (Eco-driving, PAYD, …)
- Maintenance facilities (Manual, After-sales offers, …)
Challenges – Monetizing (1/2)

- **Monetizing in-vehicle services**
  
  Ability to build application stores

  Ability to monetize HTML5 based services

- **Monetizing collected vehicle data**

  Collection, Aggregation and Distribution
Challenges – Monetizing (2/2) -> M2M and User centric

Apps

Connected App

M2M service

User service

Standalone App

Services

Data Collection

Service

Third Party

-added value

-aggregated data

raw data

Third Party

Third Party

Third Party

Renault - DREAM

14-15 Nov 2012

RENAULT PROPERTY

DRIVE THE CHANGE
Challenges – Compatibility and Interoperability with customer devices

- **End-user expectation**

  Find in cars what they got with smartphones.

  Compatibility between devices and car (Service continuity, Data synchronisation, …)

- **A car could be considered alternatively as:**

  - **Home Network**
  - **Mobile Devices**
  - **Cloud**
  - **C2X**
Web technologies and standards can help
Improving quality and reducing costs through Web technologies:

Standards and common approaches insure:

- **Better quality for the end-user**
  - Mobile interoperability
  - Security

- **Improved platform neutrality**
  - OS, HW independent

- **Improved code reuse**
  - Application re-use and Porting to new systems

- **Reduced development and deployment costs for carmakers and other actors of the value chain.**
  - Known technologies