



MeeGo OS fading fast? Intel says it's 'still committed'



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An Asia-based report surfaced today that claims Intel will temporarily halt development of its MeeGo operating system for [tablets](#) and smartphones due to lack of interest. Intel, however, says it's still committed.

The DigiTimes [report](#) claimed that Intel plans to "temporarily discontinue development of its MeeGo OS due to a lack of enthusiasm for the platform from handset and tablet PC vendors."

MeeGo

MeeGo hasn't been ignored completely, however. It is also an operating system for the so-called embedded market, such as in-car devices and industrial equipment, where it is doing relatively well, according to Intel. So, MeeGo may be sticking around but don't expect to pick up a consumer device at your local electronics retailer running the software.

Automotive: next hot mobile platform for MeeGo



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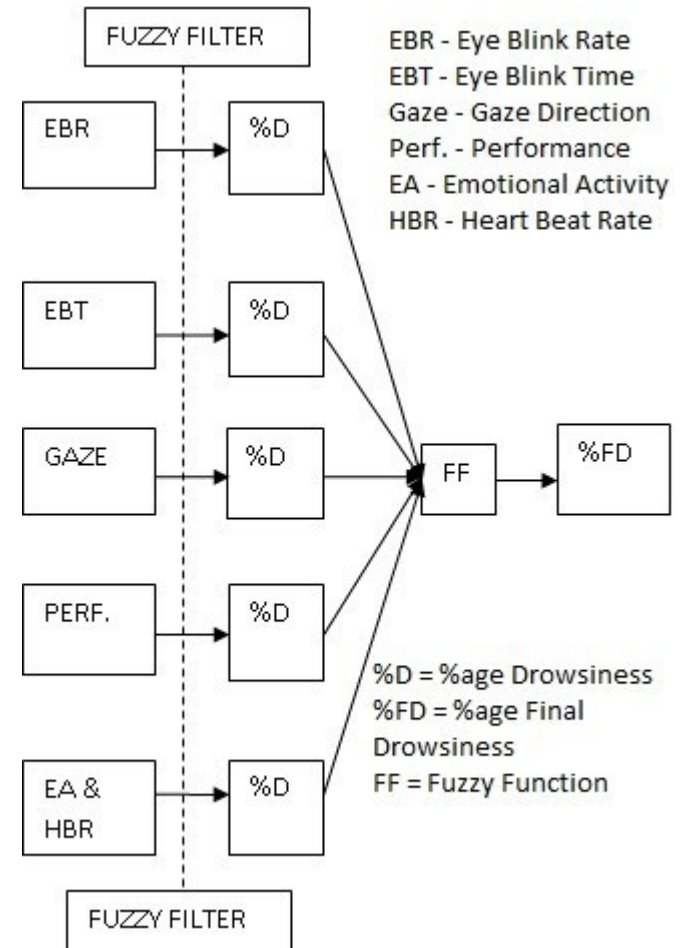
Outline

- Automotive software systems: IVI
- The MeeGo IVI project
- (lack of) hardware support for IVI
- nobody and ExoPC demos

What is “in-vehicle infotainment”?

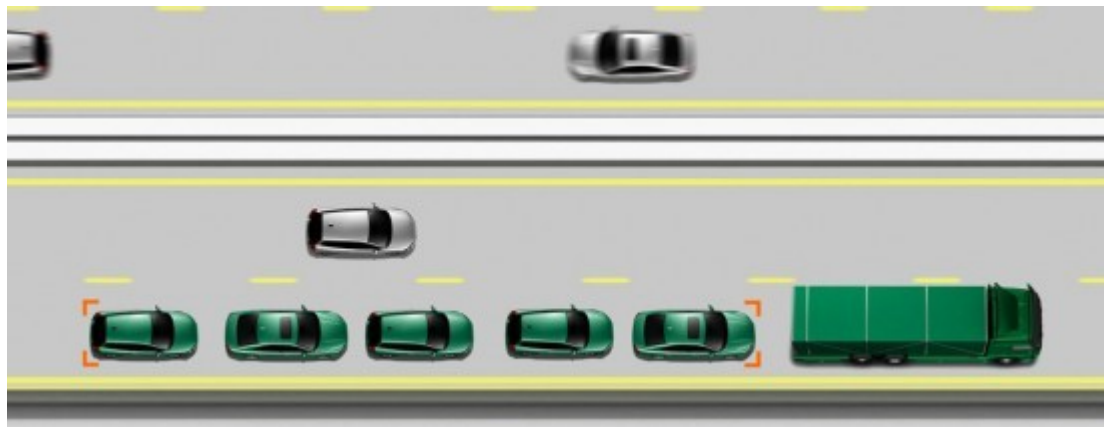
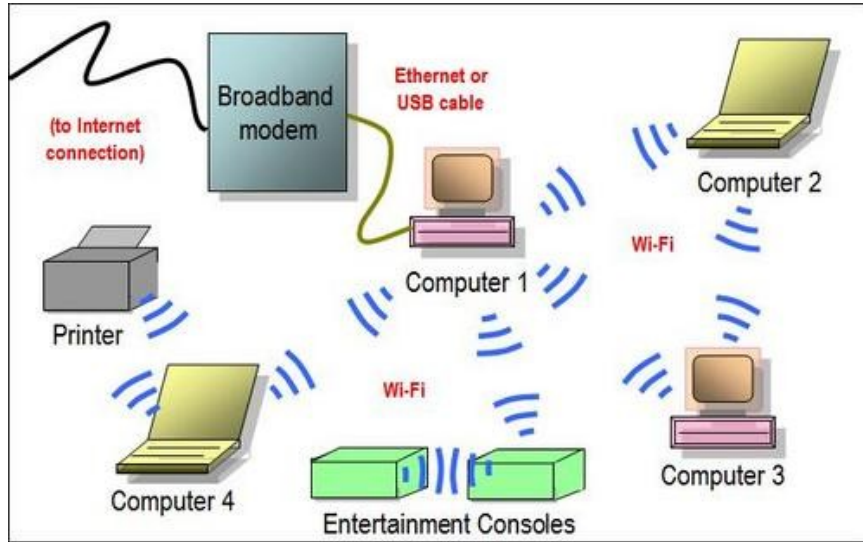


What “infotainment” calls to mind



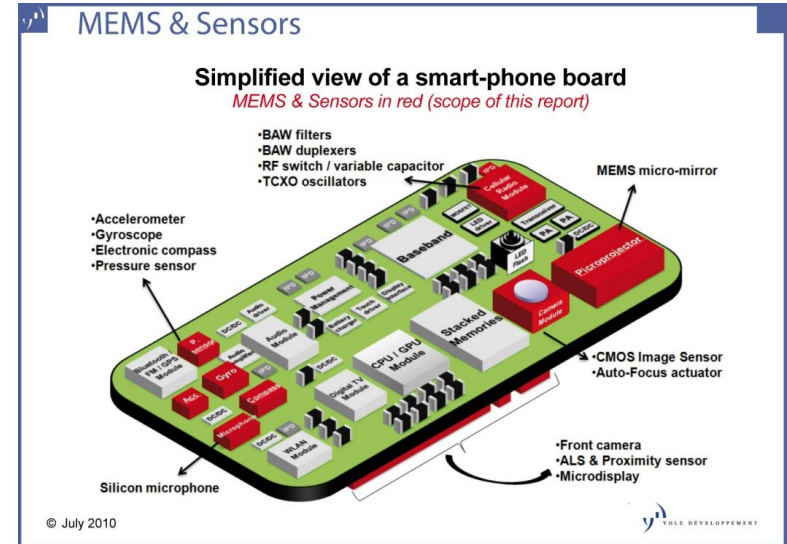
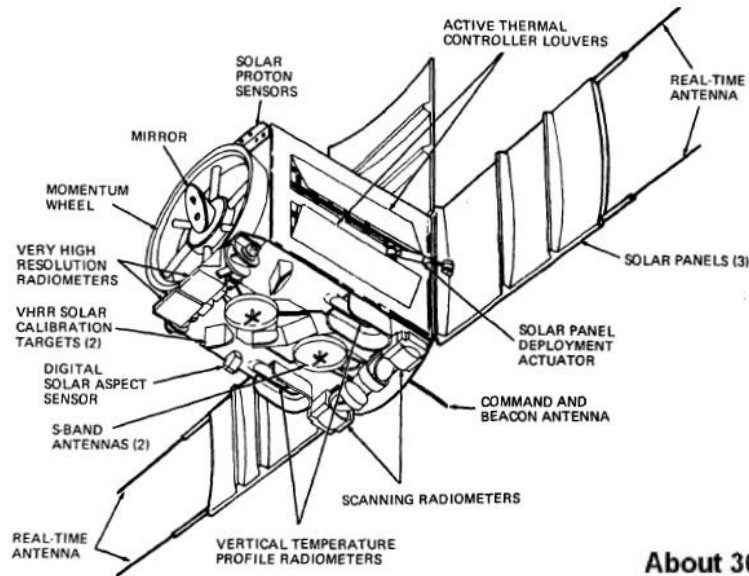
What IVI could be

Ad hoc networking saves energy



Collision avoidance is key!

Mobile sensor platforms



About 30 electric/electronic systems and more than 100 sensors



System	Abb.	Sensors			
Distronic	DTR	3	Common-rail diesel injection	CDI	11
Electron. controlled transmission	ECT	9	Automatic air condition	AAC	13
Roof control unit	RCU	7	Active body control	ABC	12
Antilock braking system	ABS	4	Tire pressure monitoring	TPM	11
Central locking system	ZV	3	Elektron. stability program	ESP	14
Dyn. beam levelling	LWR	6	Parktronic system	PTS	12

Figure 1: Car functions and the respective sensors (source: based on DaimlerChrysler)

Mobile sensor data collection coverage



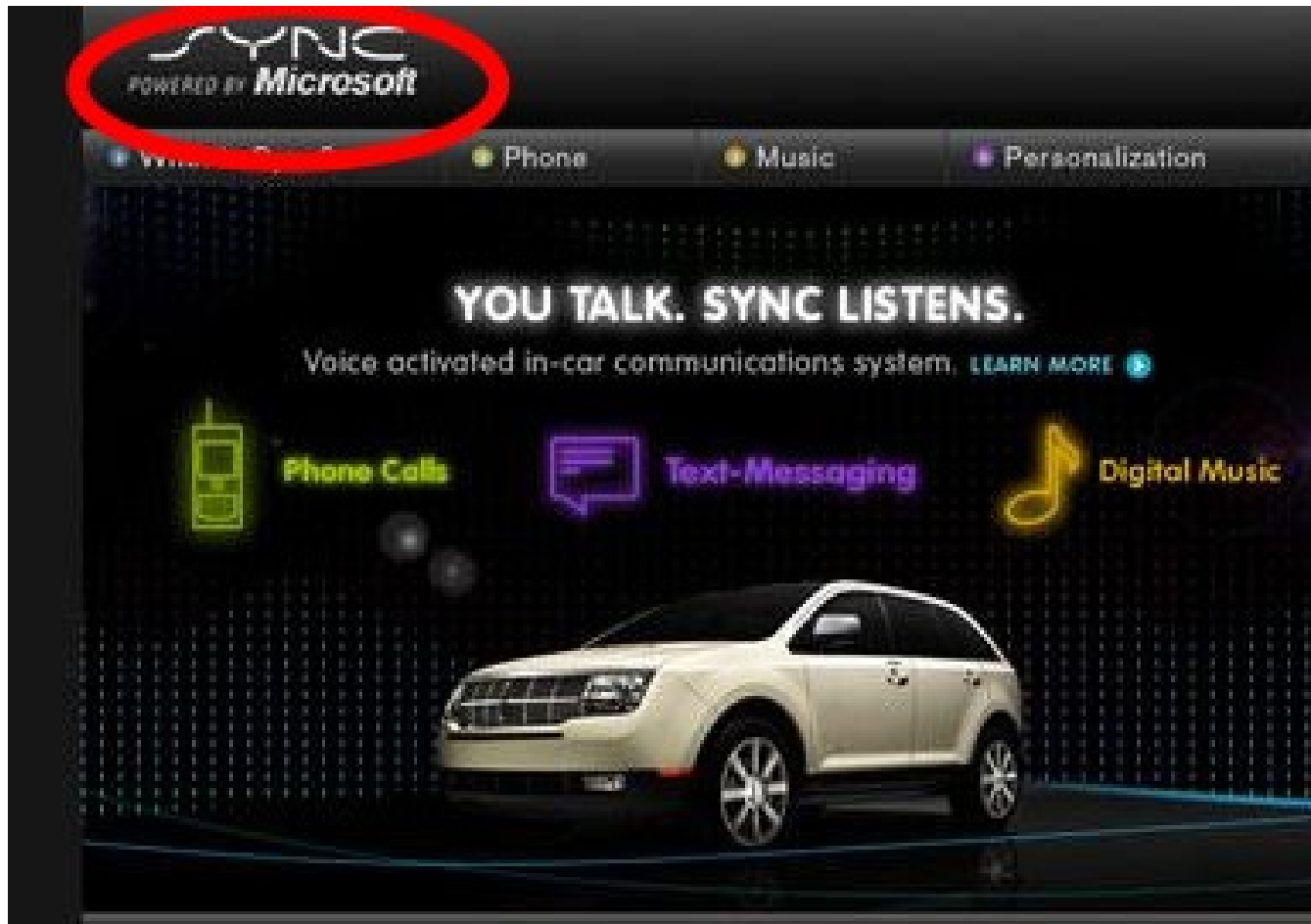
Sensor data fusion: way beyond real-time traffic!

Inserting smarts into big dumb docking stations



Cars can tether and sync rural businesses and homes?

Challenges 1: security



Backseat kids changing nav system's destination . . .
mechanic at shop installs malware.

Challenges 2: safety

Driver must receive alarms but not modify many parameters.



Prevent malfunctioning systems from interfering with driving.

Challenges 3: HW needs

CAN bus, MOST bus, wheel rotation sensors, oil level . .



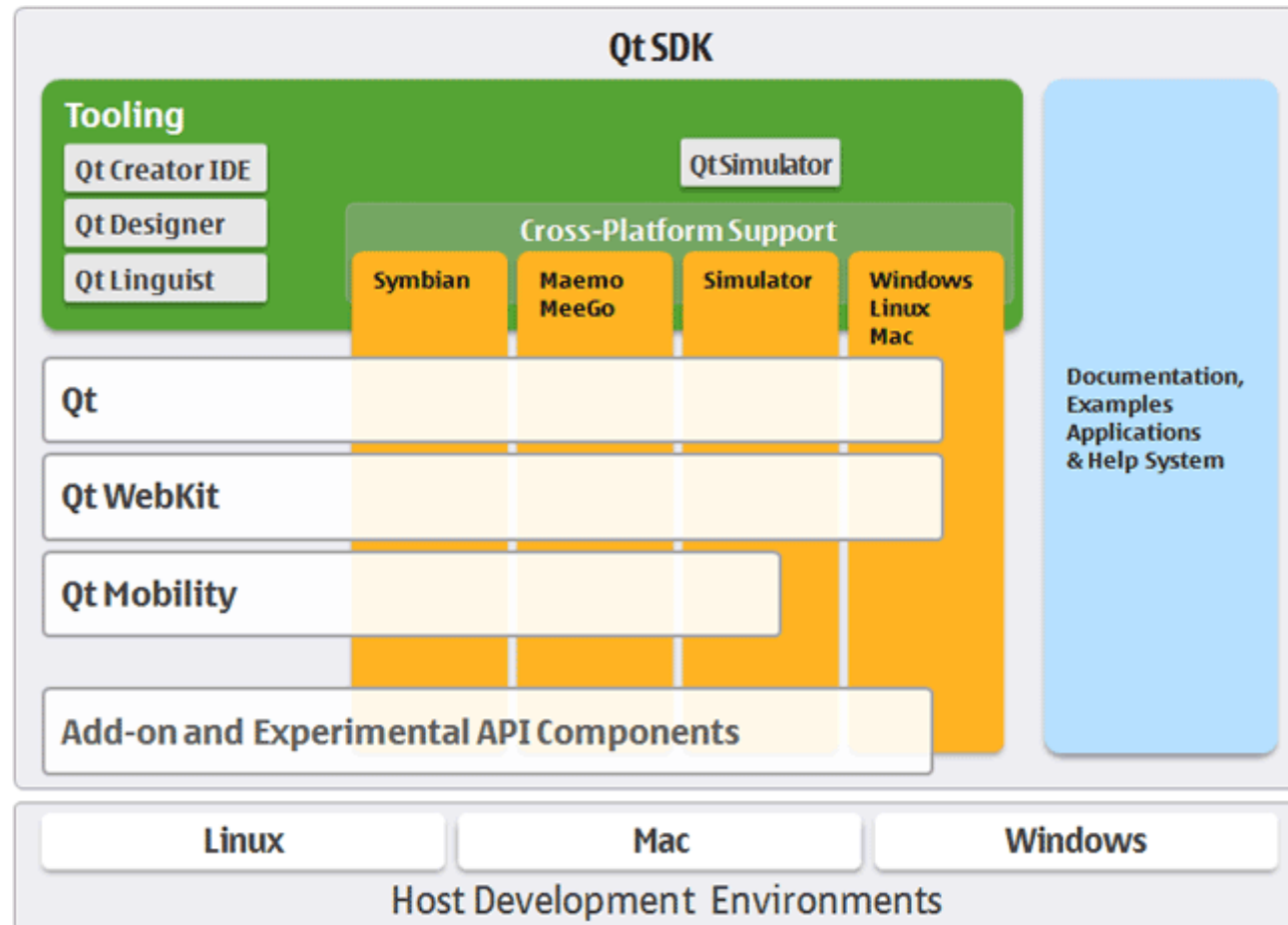
Not just RT audio, but RT video too!

Maybe what we want is Android . . .



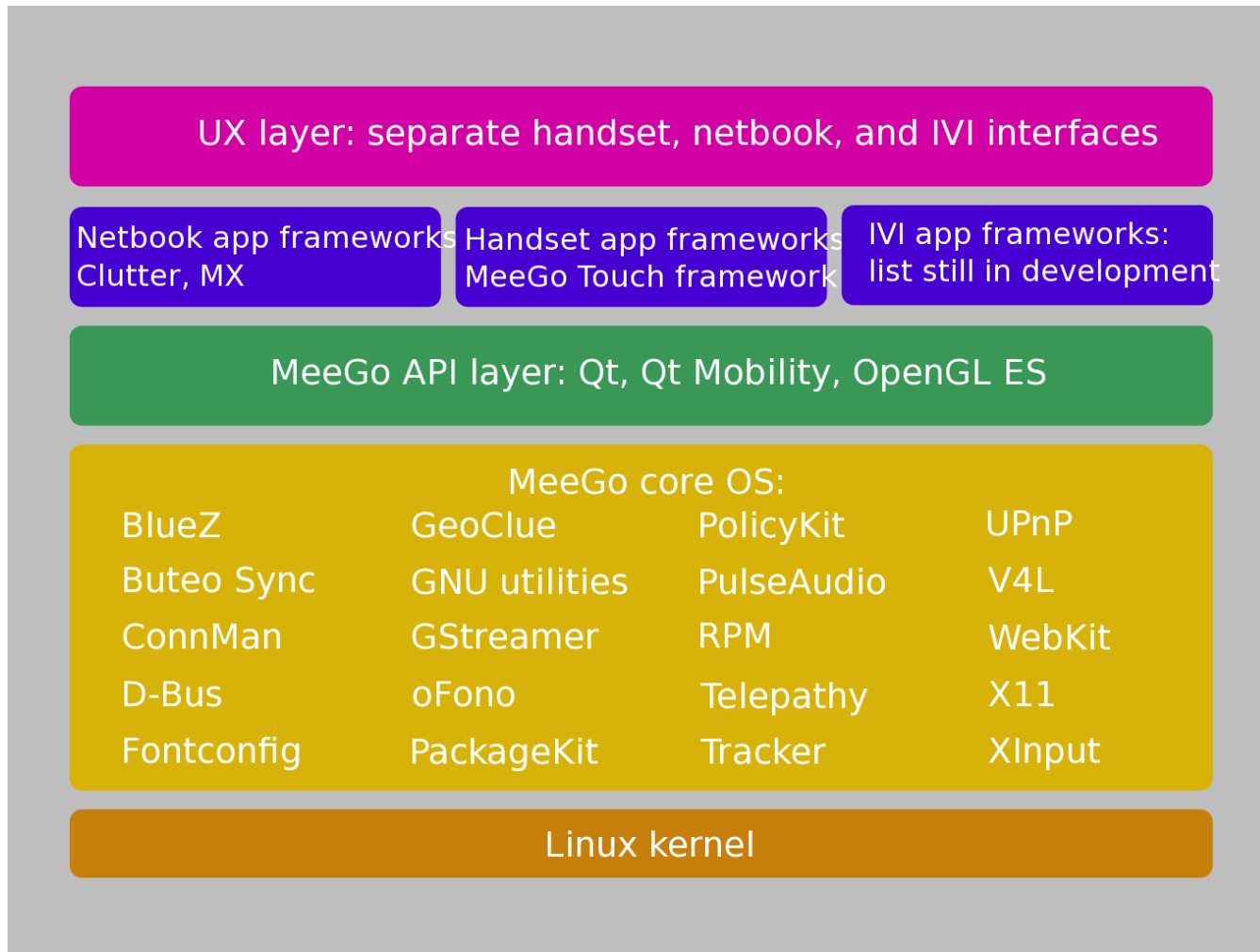
. . . from the Open *Handset* Alliance?

How about MeeGo?



MeeGo = lightweight GNU/Linux with a Qt face.

Why consider MeeGo?



Courtesy
Nathan P. Willis,
<http://tinyurl.com/3m4loer>

Closer to traditional GNU/Linux distro than Android.

IVI UX Additional Features

IVI UX: media player, instrument cluster, RSE, navigation, diagnostic surround view, hands-free phone

IVI app frameworks: vehicle sensor data access, vehicle control, Terminal Mode, touch and gesture input

IVI API layer: multi-screen video, multi-zone audio, consumer electronic device connectivity, inertia-based application control

Core OS layer:

Sensor framework	Noise suppression
Split-screen video	OTA software updating
Speech recognition	Tethered device indexing
Speech synthesis	Phone synchronization
Acoustic echo cancellation	Multi-user support

Kernel layer: <250ms boot, power management, vehicle buses

Drivers: automotive button/knob input devices, vehicle data sensors

Courtesy
Nathan P. Willis,
<http://tinyurl.com/3m4loer>

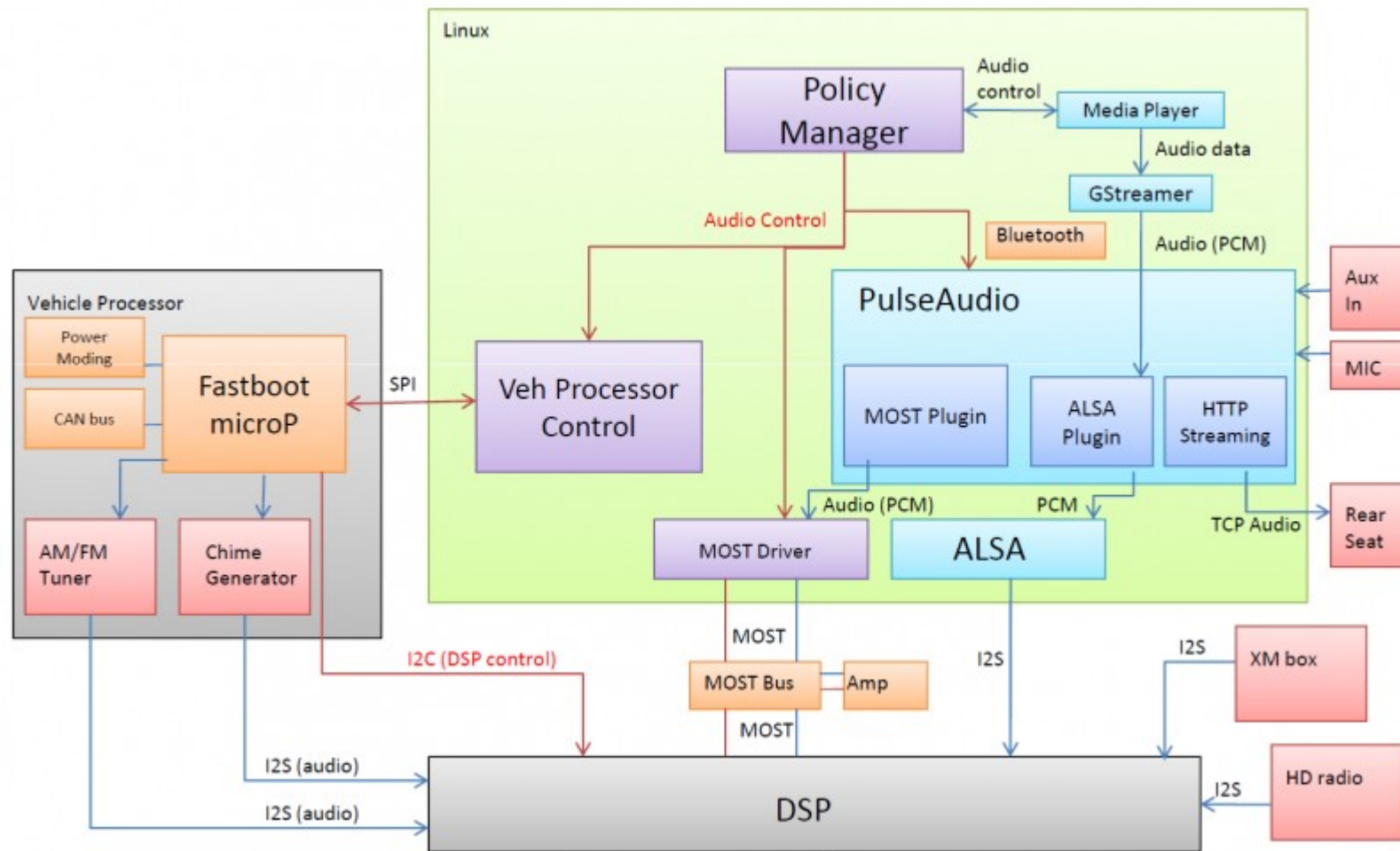
Many automotive players participating, few public announcements.

MeeGo IVI 1.2 Home Screen



Intended to be reskinned, not as a shipping product.

MeeGo IVI Audio Architecture



Courtesy Laci Jalics, Delphi.

What IVI reference hardware should devs use?

- Despite ARM world domination, Atom still has a place in IVI.
- Atom boards with CAN bus and GPS are **very** expensive.
- Nice ARM boards (e.g. BeagleBoard) far cheaper.
- Multiple display outputs preferable for IVI.
- Touch and/or gesture interface likely.

Tripzero: How do I test this in my car?

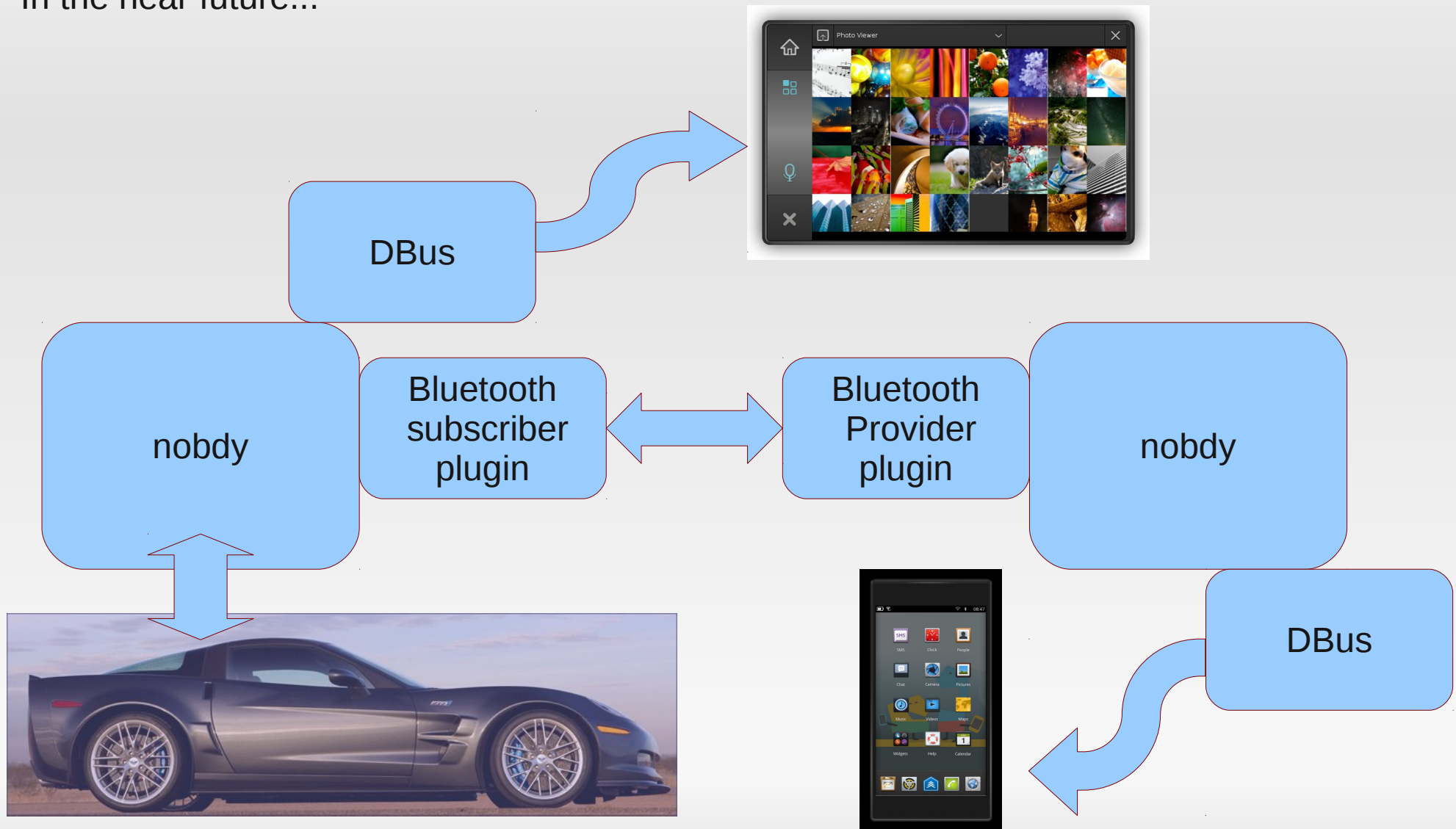
- ELM compatible scantool
- Any tablet/smartphone/laptop that runs meego



<http://sf2011.meego.com/program/sessions/vehicle-communications-meego>

Tripzero: Handset/Tablet + meego ivi

In the near future...

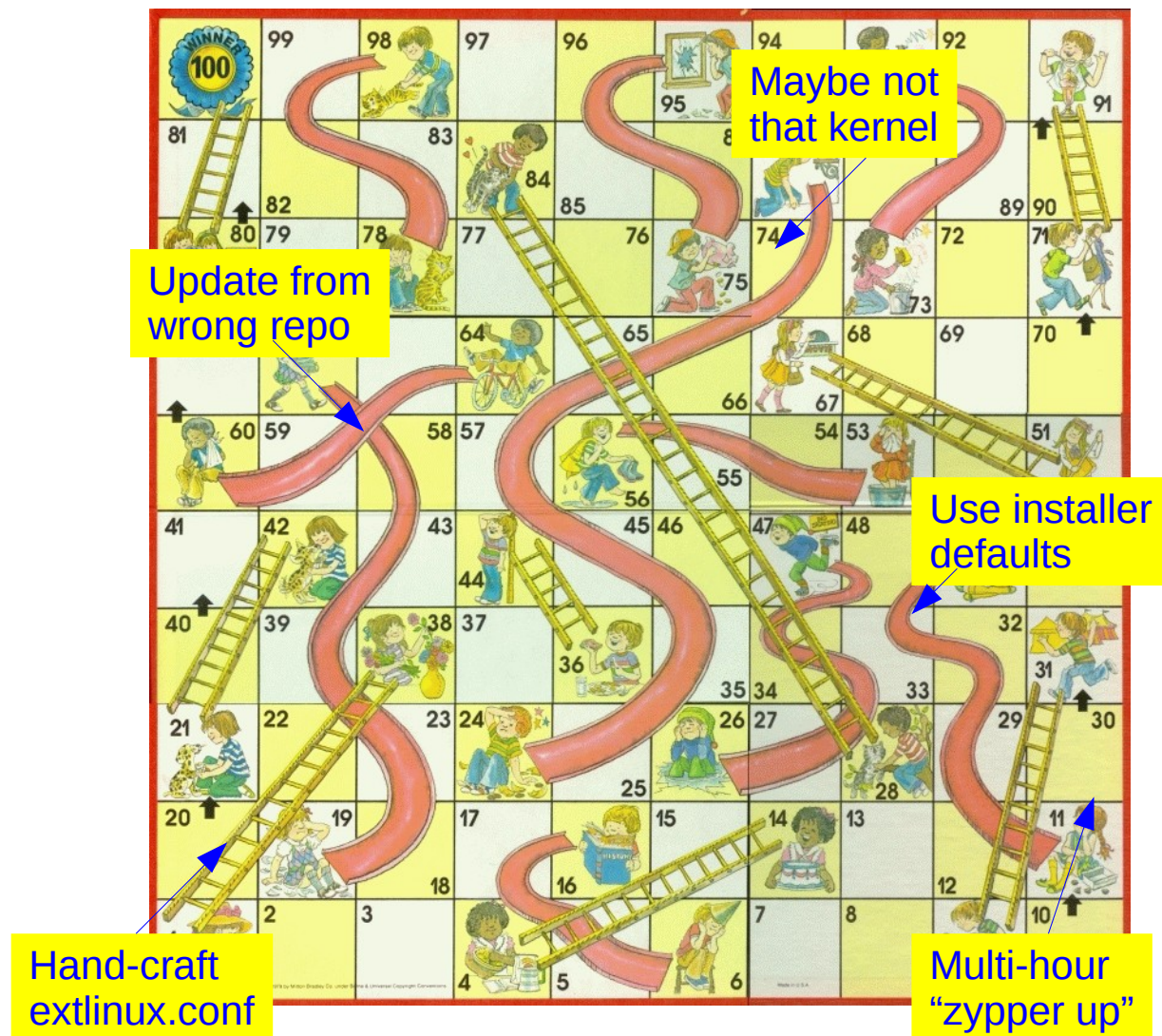


<http://sf2011.meego.com/program/sessions/vehicle-communications-meego>

Getting IVI & nobdy working on ExoPC and Pandaboard

- Intel gave away heaps of Lenovo netbooks and ExoPC slates.
 - NO subsequent software support.
- Running IVI on slate requires a mash-up of “Tablet Preview” and IVI Uxes.
- MeeGo 1.2 repositories support EMGD graphics only, while ExoPC has i915.
 - “zypper update” auto-overwrites drivers and X11 SO libraries.
- ExoPC camera and HDMI out are not working even with Windows pre-install.
- Support from nobdy's tripzero is excellent!
- Stopped work on Pandaboard with OMAP4430 processor (ARMv7) because of ABI break in MeeGo 1.2 and subsequent lack of HW accelerated graphics.

MeeGo Hardware Adaptation Process



Summary

- IVI is the part of MeeGo with the most traction.
- Finding appropriate hardware to test and develop on remains problem.
- Many companies are participating, some local to Bay Area.
- Opportunities at all levels: HW, accessories, embedded, platform, apps, entrepreneurs and big companies

Resources

- IVI wiki: <http://wiki.meego.com/In-vehicle>
- Official site: <http://meego.com/downloads/releases/1.2/meego-v1.2-in-vehicle-infotainment-ivi>
- Mailing list archive: <http://lists.meego.com/pipermail/meego-ivi>
- Mp3car.com
- #linuxice and #meego-ivi IRC on freenode.net
- Nobdy: wiki.openice.org/index.php?title=Nobdy&oldid=4637 (current version is spam)
- My notes and instructions
 - on ExoPC: http://wiki.meego.com/MeeGo_IVI_on_ExoPC
 - on Pandaboard: http://wiki.meego.com/Hardware-accelerated_graphics_on_Pandaboard_using_MeeGo