Automotive Grade Linux

ALS Face – to – Face Meeting

- Meeting held during the Automotive Linux Summit to discuss the AGL Distribution layer design.

- During the afternoon of the meeting we had about 20 people attend for all or part of the meeting. Agenda

  - AGL Spec Release and plan for next revision

  - Review output from Ned (Wind River) on package comparison

  - Project plan review (work breakdown with finer detail)

Meeting Notes

- Murata-san of Toyota kicked off the meeting with a few thoughts
  - The AGL SAT should meet with and work with the GENIVI SAT on the distribution
  - Don't slow down. Time is of the essence.

AGL DISTRIBUTION

Comparison of Tizen IVI and GENIVI

- Ned Miljivic (Wind River) and Matt Porter (Konsulko) provided a spreadsheet listing all of the packages and version numbers used by Tizen IVI and GENIVI (via meta-ivi)
- Intention was to review this in detail, but the list was too large
  - 1194 files in common between them
  - 308 file in GENIVI only
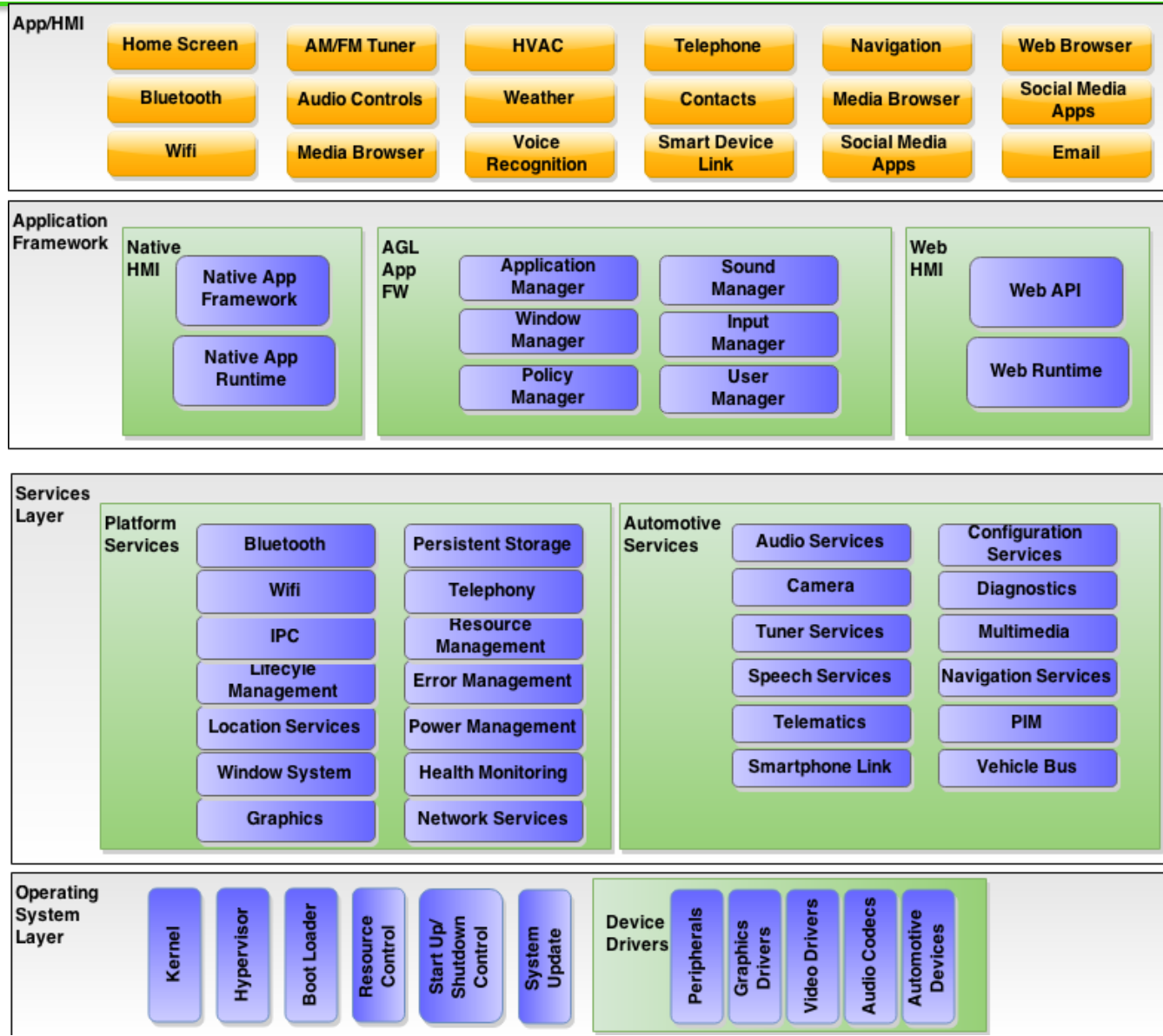 - 1554 files appeared in Tizen only

Comparison of Tizen IVI and GENIVI

- Difficulties encountered included
  - We could not find references to Tizen specific packages such as Murphy or Automotive Message Broker.
  - Level of detail involved was pretty high. For example,
    - ALSA appears in the common list in 38 files
    - There are three ALSA files on the Tizen only list and none on the GENIVI list.
  - Generally the people at the meeting did not have the expertise at that level of detail to determine what should be in the AGL distribution
  - Decided that the best course of action is to let the team that met in San Jose (Ned, Matt, Rudi, Tanikawa-san) proceed with determining the minimum configuration needed and add packages from there
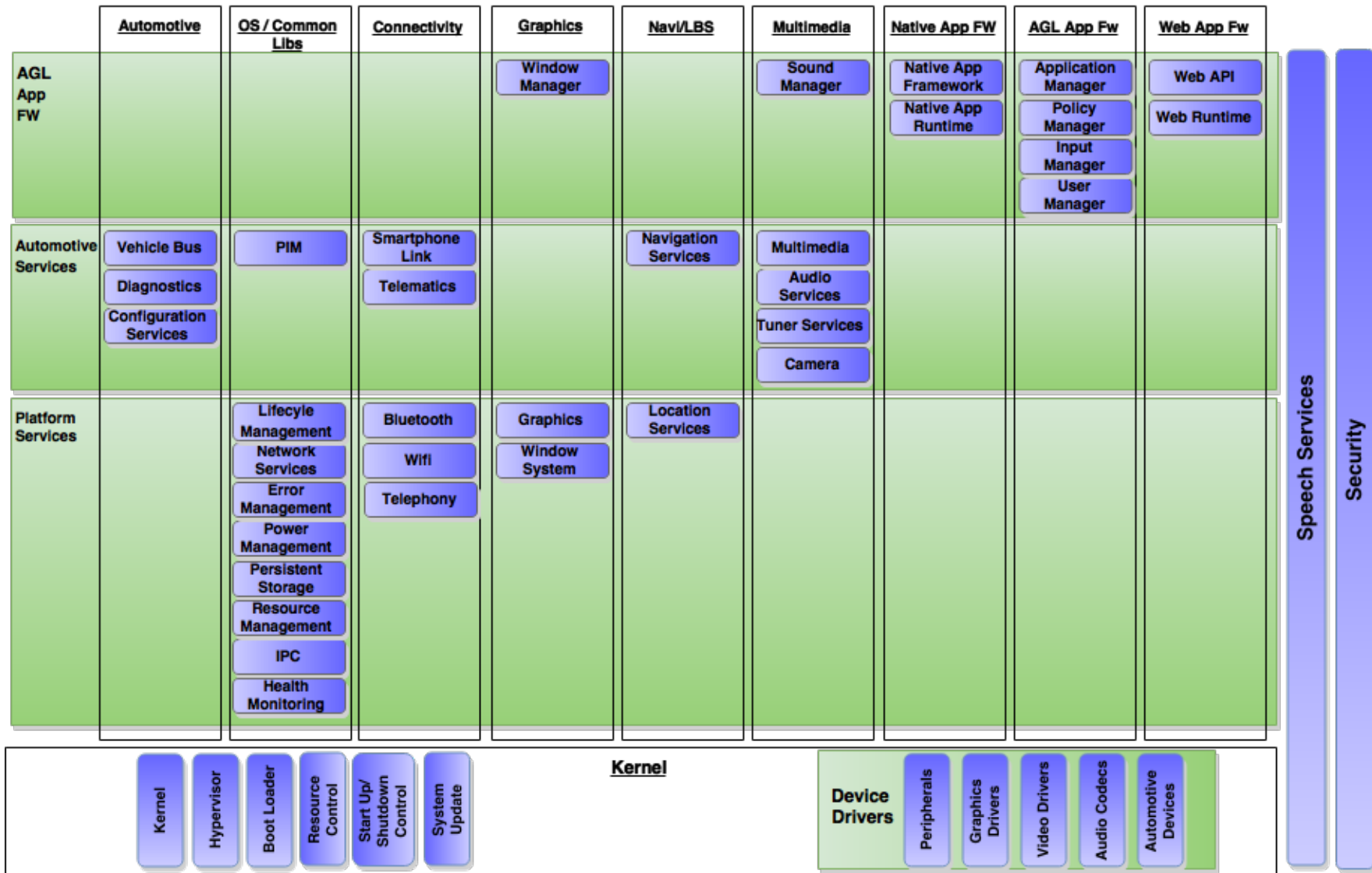
Distribution Architecture

- The team deconstructed the AGL Architecture diagram that is in the spec to determine where there are synergies or vertical architecture slices that can be managed as part of the larger distribution

- Propose that 12 component teams or subsystems be created for managing the architecture and distribution

AGL Spec Architecture Diagram

App/HMI
- Home Screen
- AM/FM Tuner
- HVAC
- Telephone
- Navigation
- Web Browser
- Bluetooth
- Audio Controls
- Weather
- Contacts
- Media Browser
- Social Media Apps
- Wifi
- Media Browser
- Voice Recognition
- Smart Device Link
- Social Media Apps
- Email

Application Framework

Native HMI
- Native App Framework
- Native App Runtime

AGL App FW
- Application Manager
- Sound Manager
- Window Manager
- Input Manager
- Policy Manager
- User Manager

Web HMI
- Web API
- Web Runtime

Services Layer

Platform Services
- Bluetooth
- Persistent Storage
- Wifi
- Telephony
- IPC
- Resource Management
- Lifecyle Management
- Error Management
- Location Services
- Power Management
- Window System
- Health Monitoring
- Graphics
- Network Services

Automotive Services
- Audio Services
- Configuration Services
- Camera
- Diagnostics
- Tuner Services
- Multimedia
- Speech Services
- Navigation Services
- Telematics
- PIM
- Smartphone Link
- Vehicle Bus

Operating System Layer
- Kernel
- Hypervisor
- Boot Loader
- Resource Control
- Start Up/ Shutdown Control
- System Update

Device Drivers
- Peripherals
- Graphics Drivers
- Video Drivers
- Audio Codecs
- Automotive Devices

Security

AGL Component Structure

	Automotive	OS / Common Libs	Connectivity	Graphics	Navi/LBS	Multimedia	Native App FW	AGL App Fw	Web App Fw
AGL App FW				Window Manager		Sound Manager	Native App Framework / Native App Runtime	Application Manager / Policy Manager / Input Manager / User Manager	Web API / Web Runtime
Automotive Services	Vehicle Bus / Diagnostics / Configuration Services	PIM	Smartphone Link / Telematics		Navigation Services	Multimedia / Audio Services / Tuner Services / Camera			
Platform Services		Lifecyle Management / Network Services / Error Management / Power Management / Persistent Storage / Resource Management / IPC / Health Monitoring	Bluetooth / Wifi / Telephony	Graphics / Window System	Location Services				

Speech Services

Security

Kernel

Kernel · Hypervisor · Boot Loader · Resource Control · Start Up/ Shutdown Control · System Update

Device Drivers: Peripherals · Graphics Drivers · Video Drivers · Audio Codecs · Automotive Devices

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AUTOMOTIVE GRADE LINUX

AGL Subsystems and Maintainers

- It is envisioned that the AGL Distribution will have an overall maintainer and subsystem maintainers.
  - Overall maintainer will manage the all packages not assigned to a subsystem
  - New subsystems may be created when the need arises
- AGL Subsystems each need a maintainer and possibly an architect.
- The maintainer will be responsible for
  - Maintaining the source tree for the subsystem
  - Pushing new subsystem releases to the Overall Maintainer.
  - Possible further breakdown into sub-subsystems and identifying maintainers
- Architects will be needed for subsystems that are not well-defined.

AGL Subsystems

Subsystem	Maintainer	Architect
AGL App Framework		
Native App Framework		
Web App Framework		
Automotive		
OS/ Common Libs		
Connectivity		
Graphics		
Navi/LBS		
Multimedia		
Speech Services		
Security		
Kernel		

Working with GENIVI

- Generally we think it will work best if we form these teams and invite the GENIVI Expert Groups to participate
  - No mechanism to allow non-GENIVI members to participate in Expert Groups
  - GENIVI Expert Group governance requires member leaders and architects to be a certain GENIVI levels.
  - AGL would encourage GENIVI members to apply for Subsystem

Next Steps

- Review these findings with Steering Committee
- Identify Overall Maintainer and subsystem Maintainers (SC and SAT)
- Finish initial layer and distro design and get into Git

Thank You