Seamless Integration of Heterogeneous Automotive Busses into Linux
Connected Car Expo – 5th-6th July 2017, Berlin

Presented by:
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In-Vehicle Networking Leadership

Infotainment Network

MOST®

IEEE 802.3 Ethernet

SUPERSPEED

CERTIFIED USB

CAN FD

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Engineering Challenges

Multiple networks co-existing in vehicles
• Knowledge of multiple technologies
• Deal with complex software/system integration

Trends
• First time right – improve initial quality
• Faster time to market
• Reduced development costs
Requirements for a Seamless Integration

- Providing support for the network
  - Low-level driver for networking IC

- Enabling easy handling of the network
  - Network & connections management software

- Enabling standard and secure applications
  - OS integration providing standard interfaces
  - Integration into an application framework
Linux® & AGL Integration with UNICENS

High level

Standard AGL apps

AGL App Framework

UNICENS

Linux Driver

Physical Layer

Low level
Unified Centralized Network Stack (UNICENS)

- Centralized intelligence in root node ⇒ Easy maintenance
- From design stage to running in “a day” ⇒ Shorten development cycle
Technology-Independent Applications

Non specific applications / standard programs and libs

- Open
- Read
- Write
- Close
- TCP/IP
- UDP
- SOME/IP
- ALSA mixer
- std libs &
- programs
- ffmpeg
- gstreamer
- etc.

Physical network specific domain abstracted by Linux Driver

- Cdev
- Meth0
- ALSA
- V4L2

Physical Layer
Free & Open Source Software EcoSystem

- Linux® driver: Free & Open Source (GPL v2)
- QNX driver: Free
- UNICENS: Free & Open Source (BSD-3)
- Configuration Software: Free
Seamless Integration: Microchip’s Achievement

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- Integration into an application framework

- Linux® driver
- UNICENS
- Linux driver
- UNICENS
- AGL App Framework
UNICENS

Makes In-Vehicle Networking Easy

- Fast time to market
  - UNICENS / Configuration Software
  - Drivers for Linux® and QNX®
  - Seamless integration into Automotive Grade Linux

- Reduced investment costs with free of charge software ecosystem
  - Driver, UNICENS, Configuration tool

- High product quality and limited technical risks:
  - Proven solution, working out of the box
Meet us at Booth 11
(next to the entrance to Automated Driving Conference)

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