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Unfolding the mystery of automotive audio applications for "not"using Zephyr and RT Linux

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While Car Audio is a commoditized technology, it's still one of the sought after research area in automotive infotainment. The technology advancement in semiconductor technology has helped in integrating large IPs like DSPs, accelerators, analytics engines, etc into one single SOC, they have definitely resolved the requirement of low power, low cost, high performance requirements. But, the software integration possibilities have significantly out blown.

The RTOS, bare metal based software frameworks aren't scalable to cater to range of devices in the audio segment on the other side the Zephyr or RT Linux doesn't offer the platform required either. Moreover there are no open source frameworks or tools available which are proven and productized for automotive audio markets like auto amplifiers etc.

In this session we should be discussing the following :
- Software stack required to build few of the key audio centric solutions for automotive segments.
- Tools that are required to validate, standardize, configure and benchmark.
- What are latency requirements and other expectations –can RT Linux or Zephyr meet those.
- Can we build the required software stack on Zephyr or Linux.
- What are the safety constraints imposed for qualifying for the safety certifications (if any).
- Security, over the air upgrade, streaming media over the network –do they have to be proprietary ?.

Let's leverage the opportunity to understand the domain requirements, available open source solutions, tools and standards that can help us in addressing the problems mentioned above, identify the gaps in Zephyr and RT Linux and prepare a community driven plan to address the same.

Primary author: SYED MOHAMMED, Khasim

Presenter: SYED MOHAMMED, Khasim

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