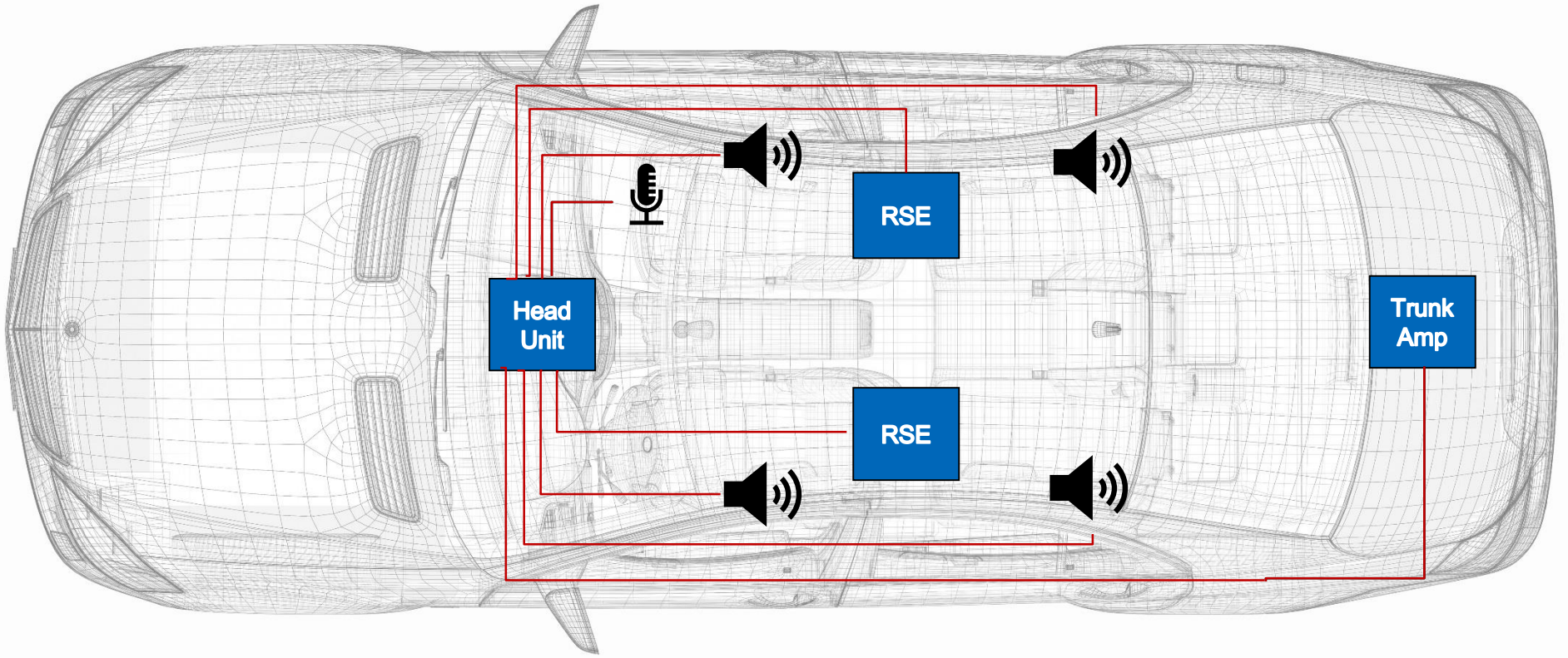
Networked Audio Devices

ANALOG DEVICES

AHEAD OF WHAT'S POSSIBLE™

Overview – Car audio network

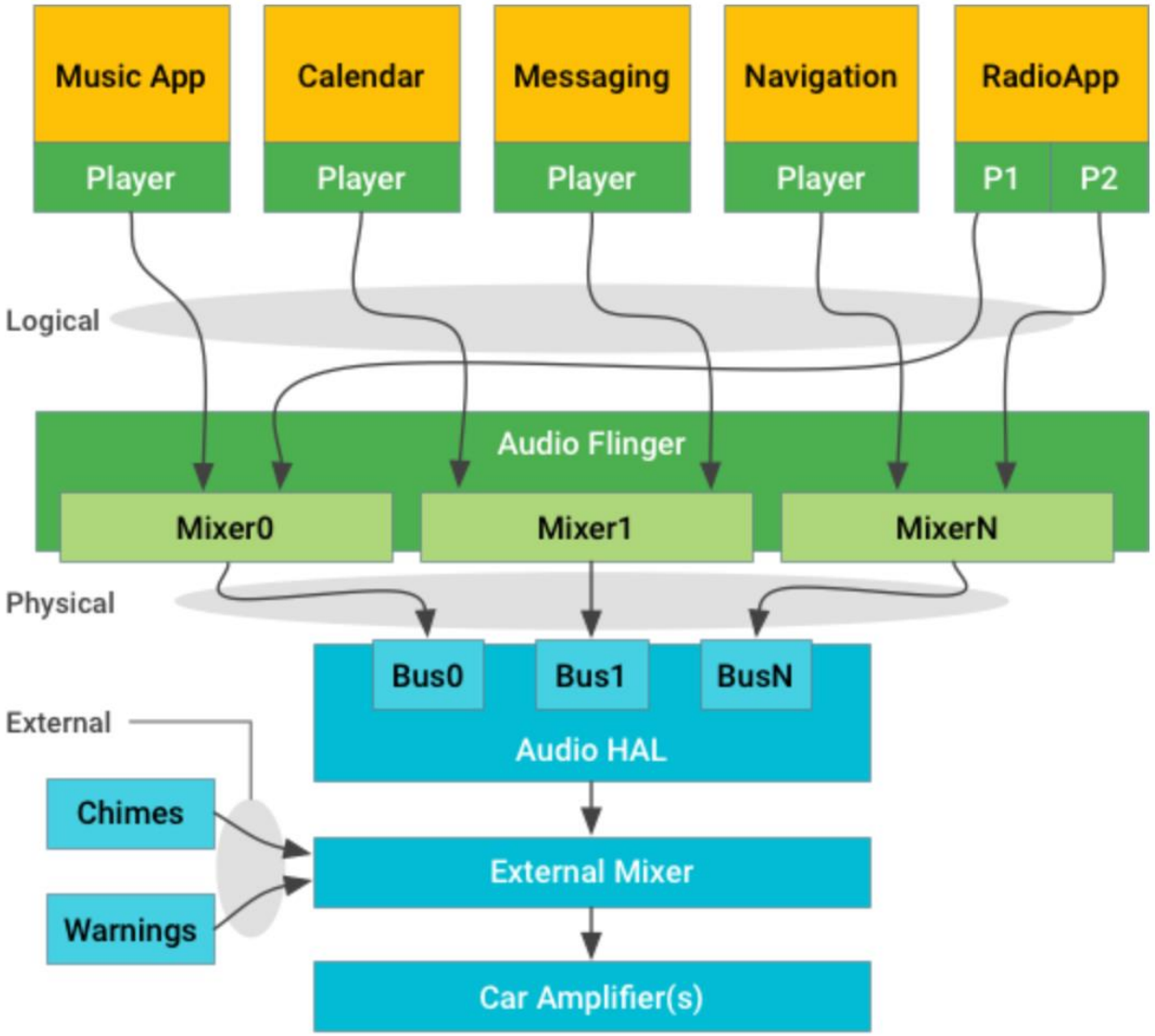


Example streams:

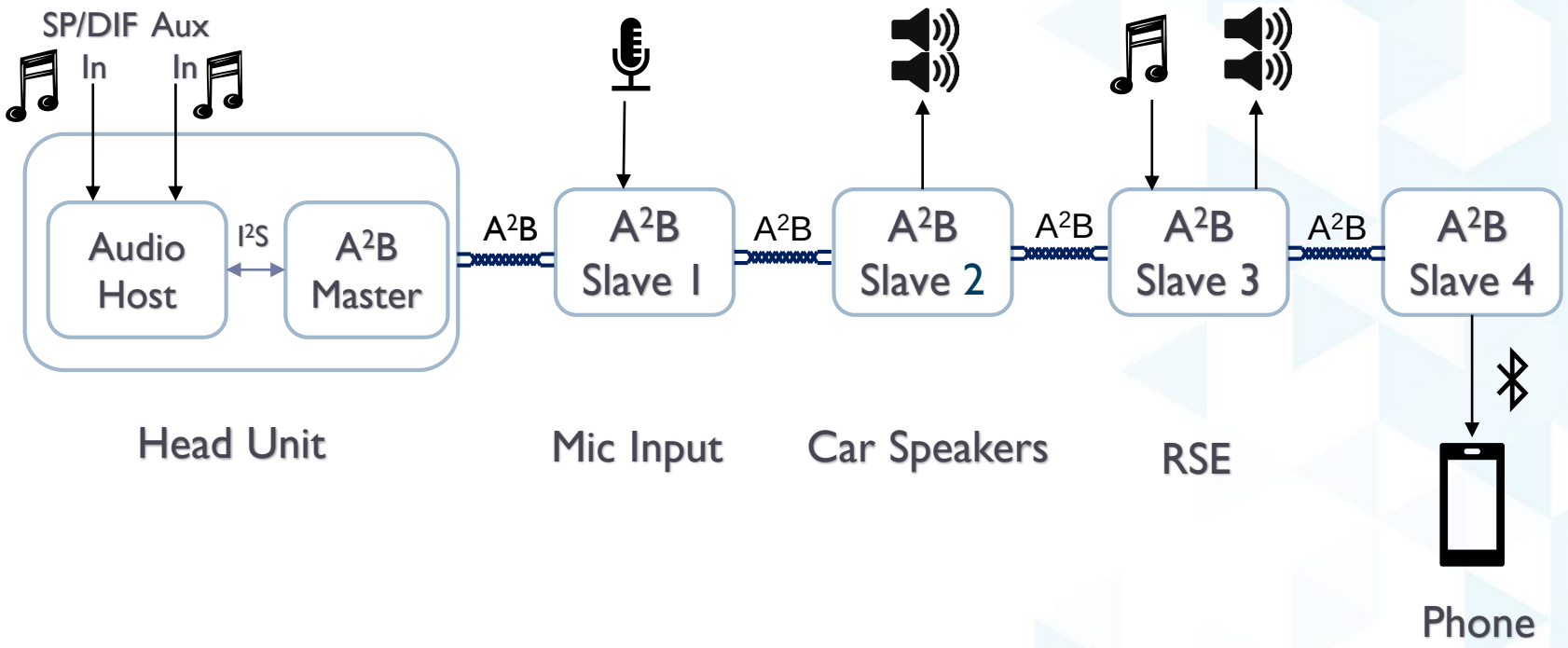
- Head Unit – Front Speakers
- Mic - Head unit
- RSE – Rear speakers

- Each device viewed/listed as a separate device (physical stream)
- Easy mapping between logical stream and physical stream

Android streams



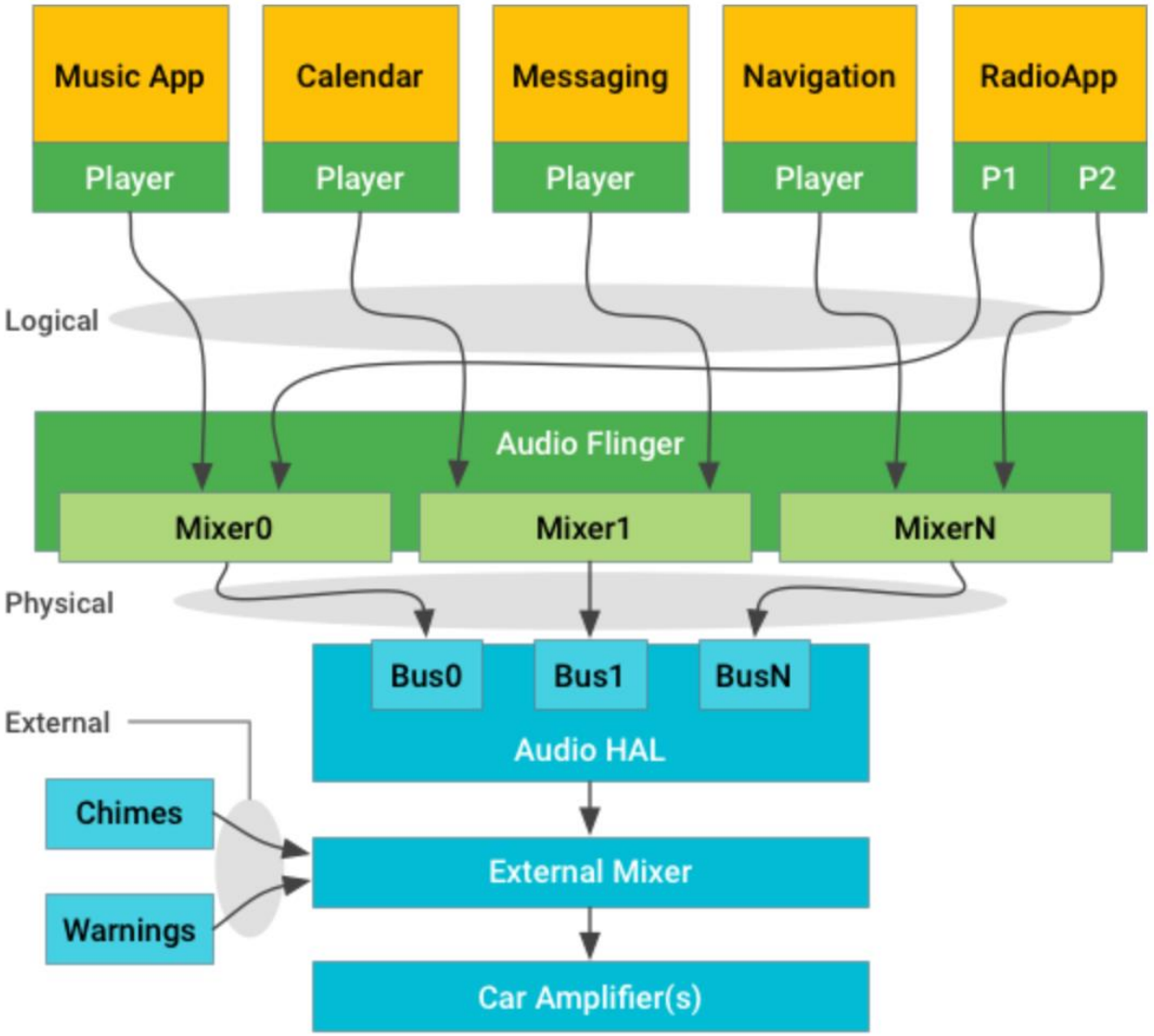
Automotive Audio Bus

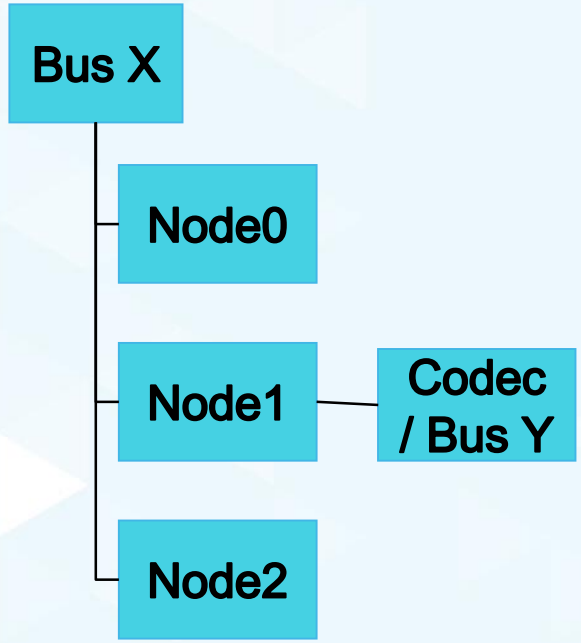


- One master, multiple slaves connected in a daisy chain
- Each slave connected to various peripherals like speakers, mics etc.
- I2S/I2C over distance
- Multi-Channel I²S (TDM)

- Android system views the entire network as a single device(physical stream)
- But the logical streams still exist separately.
- Viewing each slave on the network as a separate device is needed.
- Can we somehow use AUDIO_DEVICE_OUT_BUS in android 10?

Android streams





Diagnostics Support

- Current audio control path includes mostly effects(volume, stream changes etc)
- Network diagnostics is gaining momentum
- Control path should be able to support more than just simple volume changes (to maybe launch a series of diagnostic routines in the driver)
- Interfaces / hooks to initiate diagnostics and other control features would be good to have

Summary

- Two main areas of improvement for networked audio devices:
  - Support for viewing each device on the network as a separate physical stream instead of a single stream
  - Increased functionality on the control path for better diagnostics.