Hikey960 with HiFi 3 DSP SDK

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Cadence HiFi DSP SDK for Android

- A development and demonstration platform for Audio and Speech Applications

- Target Applications
  - Audio and speech codecs
  - Voice pre-processing such as acoustic echo cancellation, noise reduction
  - Multi-microphone processing
  - Audio post processing including object audio processing and rendering
  - Immersive audio, 3D audio, AR/VR
  - Speech recognition
  - Neural network based processing

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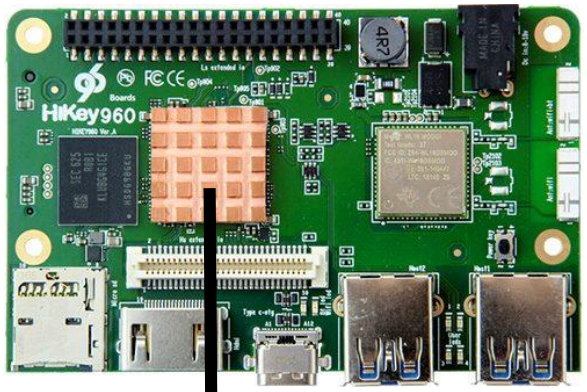
Hardware Architecture of Cadence HiFi 3 DSP in Hikey960



Hi3660

App Processor

I/O

Audio DSP (HiFi 3)

HiFi 3 DSP Core
(533 MHz)

Data
RAM

Instruction
RAM

D-Cache

I-Cache

LPDDR4

Shared Memory

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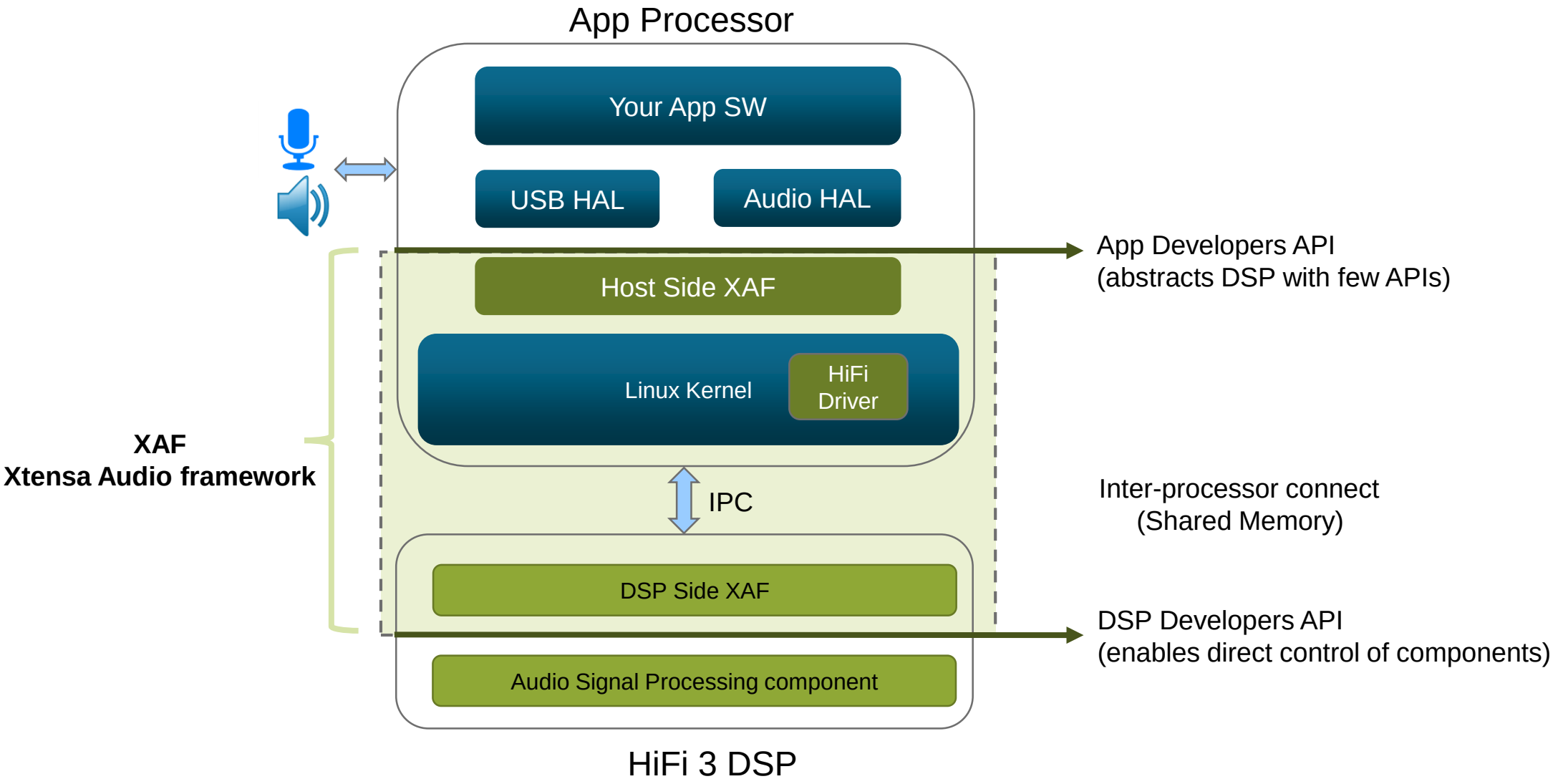
Software Architecture of the Hikey960



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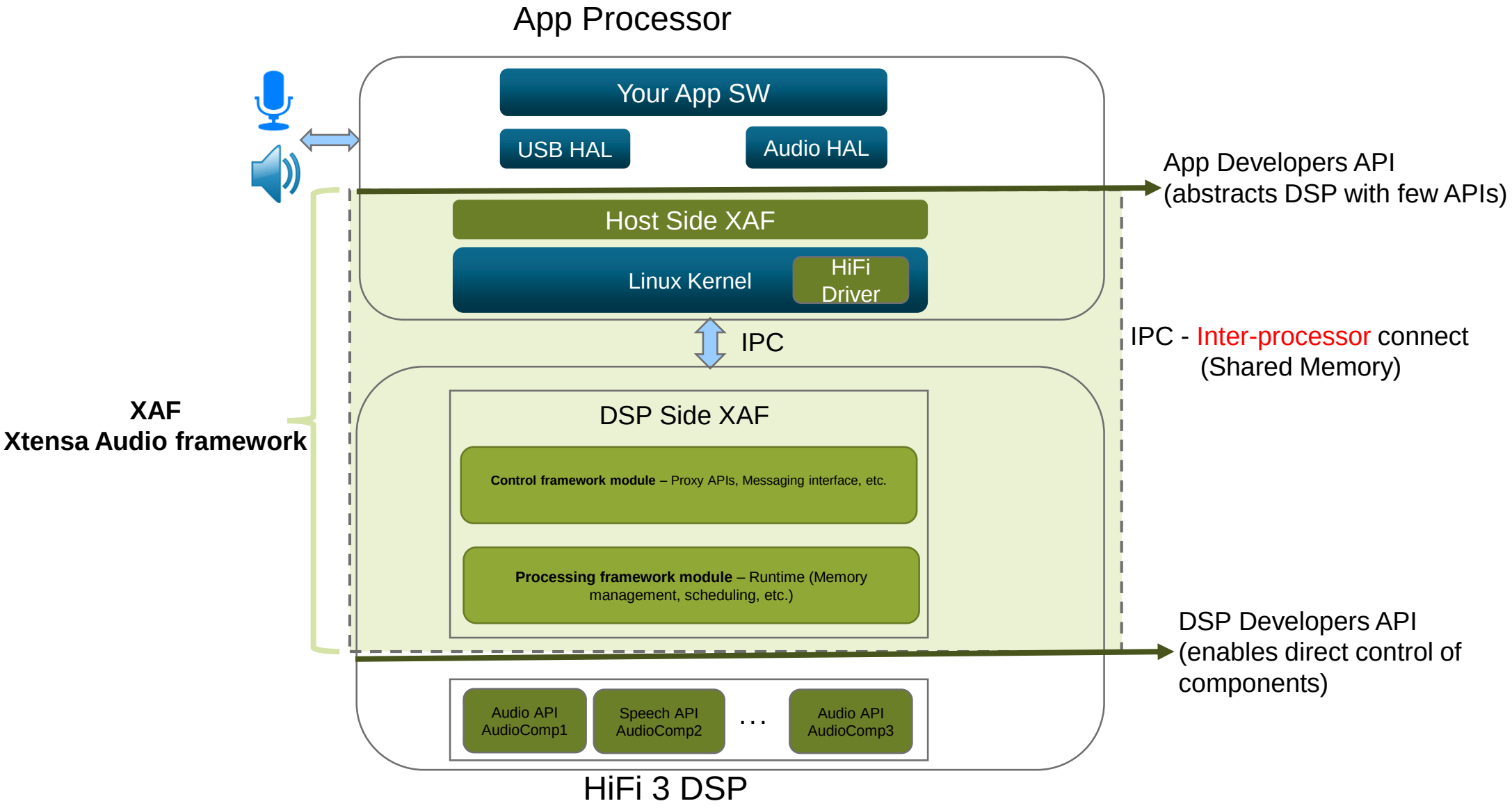
Software Architecture of Hosted XAF



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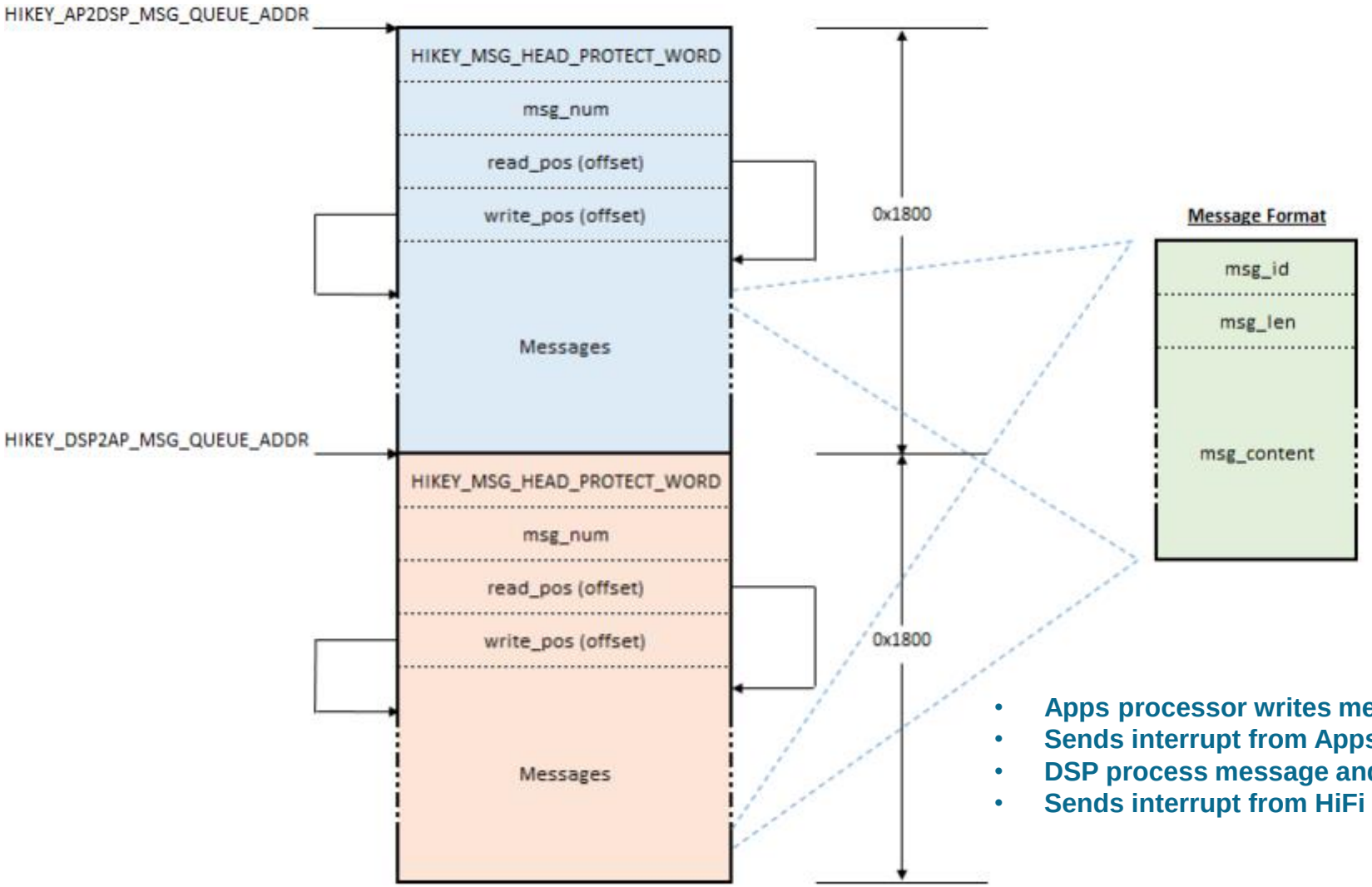
Inter processor communication(IPC) explained



- Apps processor writes message to AP2DSP Message Queue
- Sends interrupt from Apps processor to HiFi Core to notify message
- DSP process message and writes message to DSP2AP Message Queue
- Sends interrupt from HiFi Core to Apps processor to notify message

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