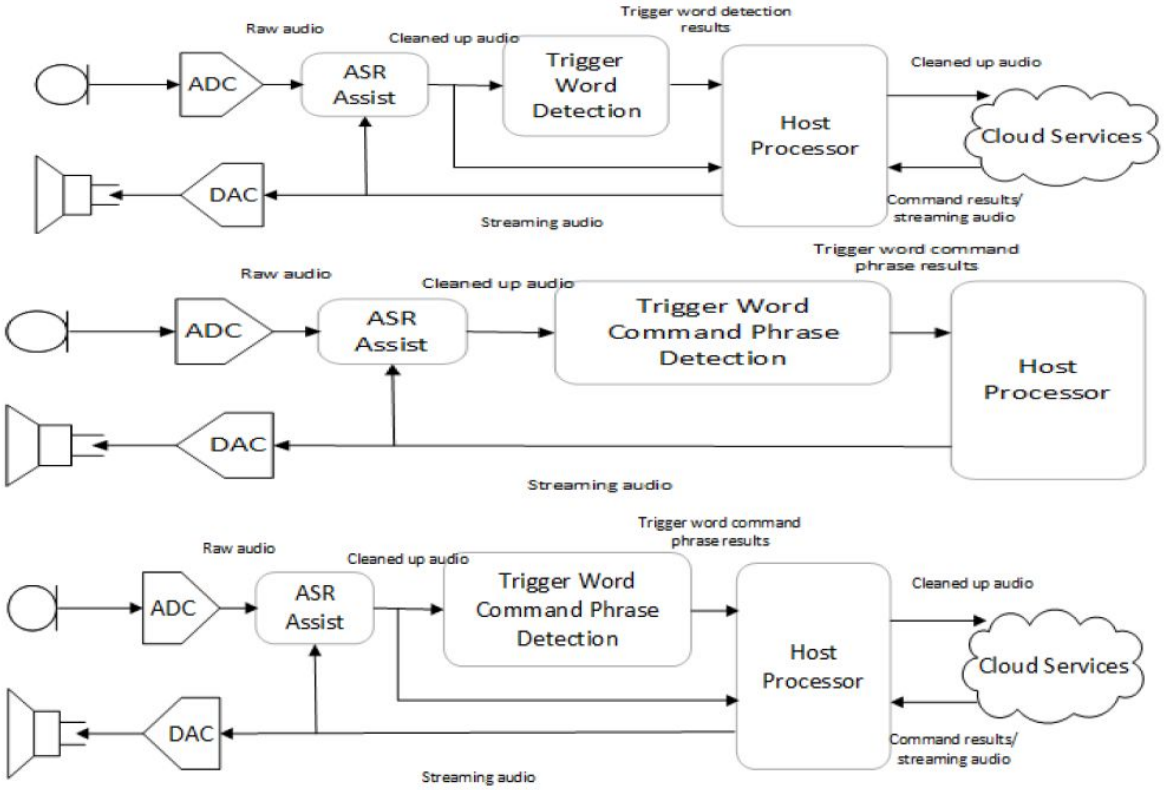
Alexa on an in-ear computer, a use case for 3DP. (Decreciated by AMA, BLE Beanie)

The $1 wearable 3D printed echo.

A simple ArmCortexA0 based behind the ear or in-ear computer as a thin client, designed like the Alexa echo with wifi based cloud connectivity is presented as a use case for 3DP. To be printed in computing polymer, graphene and PLA as open technology. It will use Alexa, with skills for translation and making and receiving phone calls and messages, which is already built into the Alexa cloud. The hardware has software to recognize the wake word ‘Alexa’ and to connect to the wifi and connect to the Alexa cloud. This is naturally hearing impaired friendly using the volume control built into Alexa.

How To Build Your Own Amazon Echo



A development kit containing the audio components needed for creating a voice-activated system using Amazon's Alexa voice service is now available.

The success of personal assistants that you interact with via the spoken word, such as Amazon's Alexa, Apple's Siri, and Google Home, has made voice controla hot-ticket item in system design.

A new development kit from Microsemi, in partnership with Amazon's Alexa voice service, seeks to simplify startup so developers can focus on application rather than implementation.

The AcuEdge development kit is a starting point for developers working on voice-activated systems but is not an out-of-the-box system.

The kit contains a development module based on Microsemi's ZL38063 Timberwolf audio processor preloaded with the company's license-free AcuEdge audio processing software.

Developers need to supply their own Raspberry Pi 3 or a similar processor board of their choice, to which the development board mounts.

Once the hardware is assembled, the next thing needed is a developer's account with Amazon AVS. The account is free and enjoys substantial support from Amazon for everything from technical training to product marketing guidelines.

This full duplex allows, among other things, for the system to actively noise-cancel its own output audio so that it can better respond to users trying to talk over the system's response.

According to Microsemi, the market for voice-enabled systems is expected to be 75 million units annually within five years, with two-thirds of those being digital assistants like Echo.

Applications such as lighting systems, appliances, set-top boxes, and the like form an even larger market for voice activation features.

While the kit serves as an entry point for designing a voice-activated system, it only represents one of three potential architectures that developers can pursue.

This system uses on-board processing to identify a wake-up word, then sends further audio data to the cloud-based AVS for processing of the commands that follow.

Hybrid systems provide a third alternative, using a cloud connection to offer full voice functionality with on-board recognition of basic commands as a backup.

Milestone:
Print a arm cortex A0 based , bluetooth compatible wifi connector with cloud connectivity and an OS for wake work detection.
I will publish the design and stl files for it here soon, for which funding will be applied for.

References:
https://www.electronicproducts.com/Internet_of_Things/Household/How_to_build_your_own_Amazon_Echo_or_something_like_it.aspx