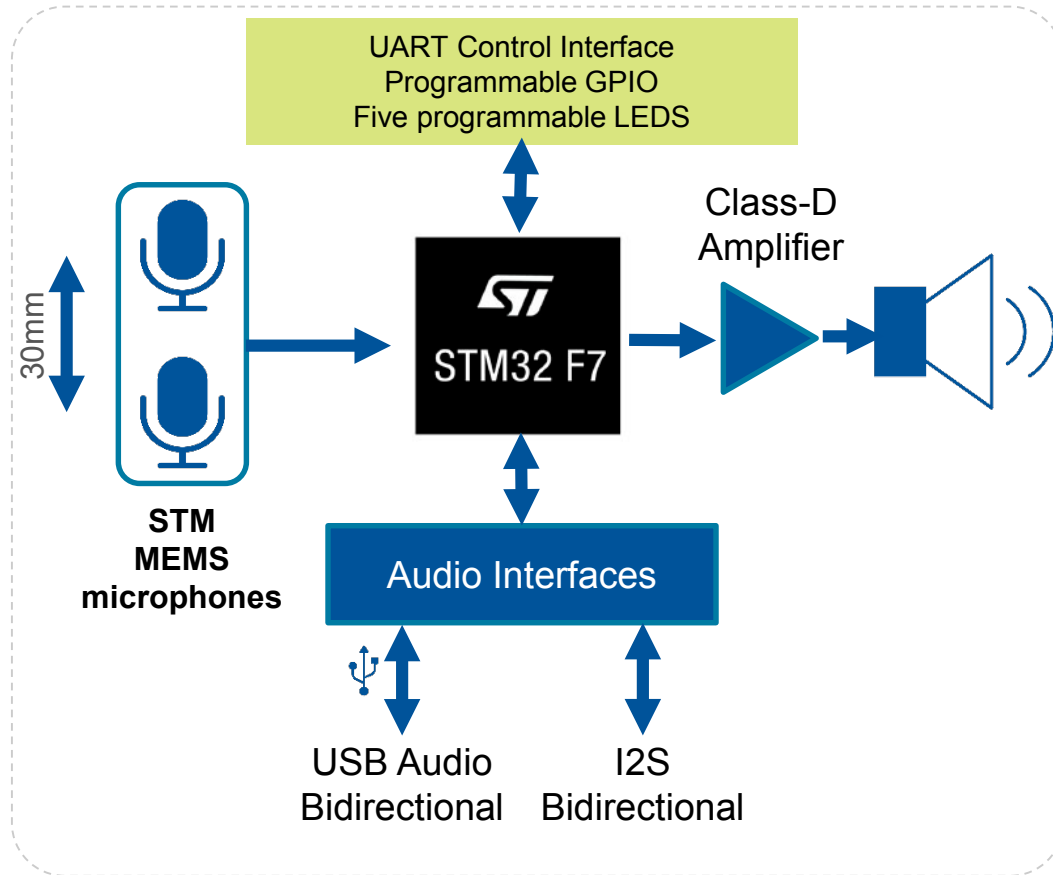


# Voice Recognition and Audio Quality Enhancer with Dual Microphone Interface



Strong Adaptive  
Beamforming  
with ST MEMS  
Microphones

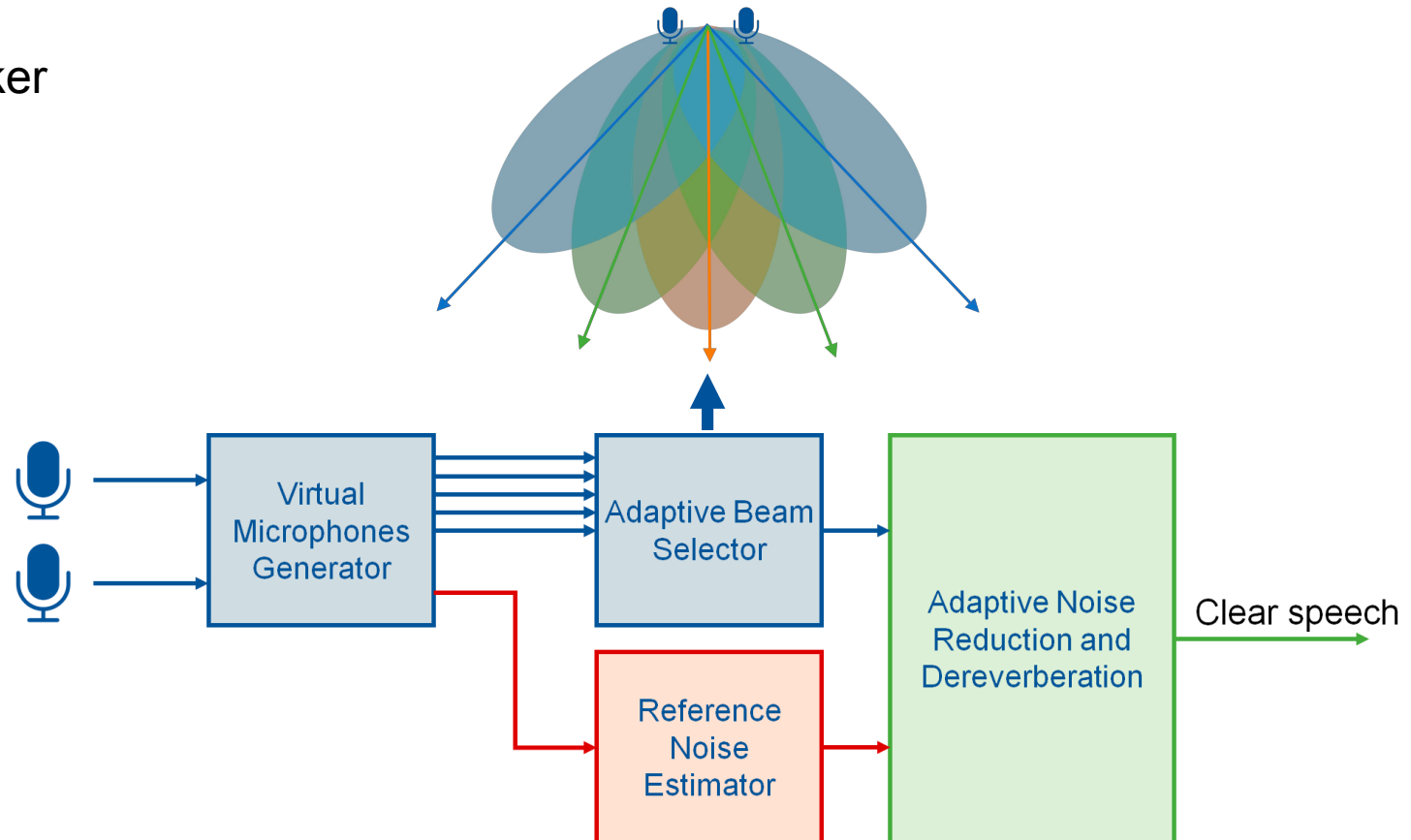
High Quality AEC  
(Acoustic Echo  
Canceling) – S2C

Highly performant  
Barge-in

Efficient  
Hot Word  
Recognition

# Adaptive Beamforming

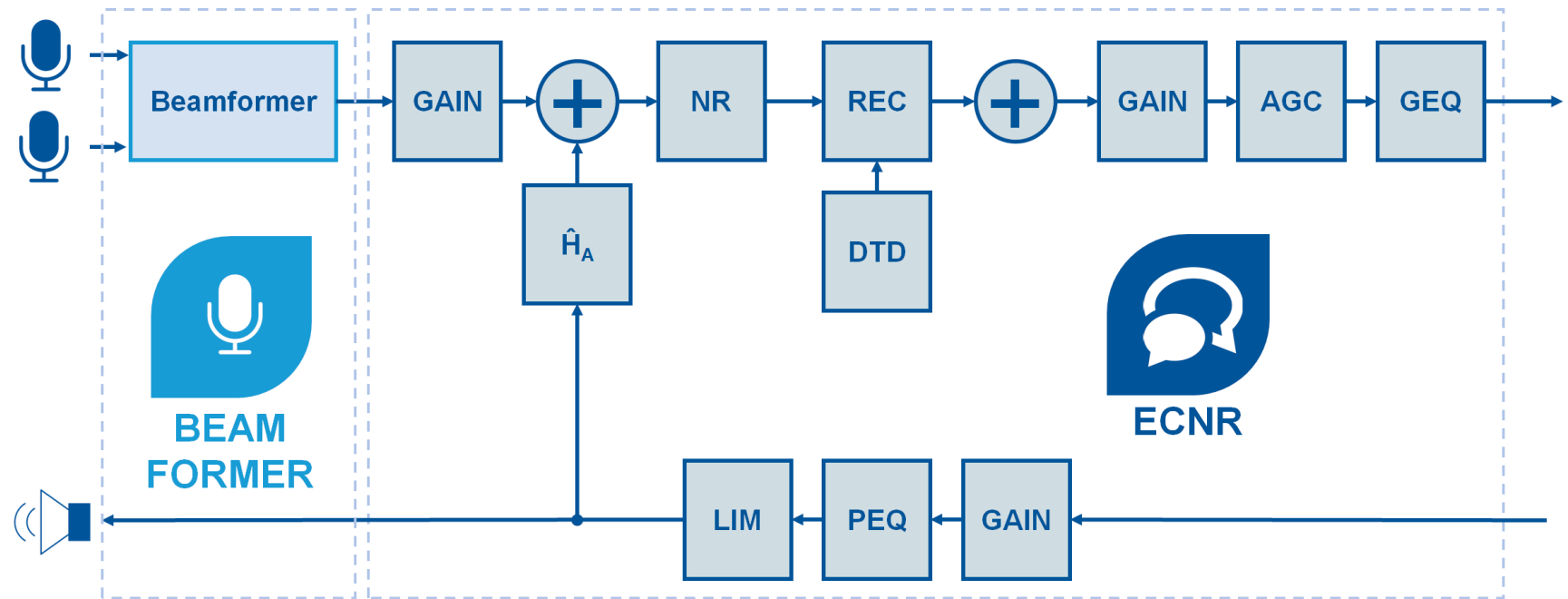
- Great improvements even with just two microphones (**broad side configuration**)
- **Localization** of the right speaker
- **No calibration** is required



# AEC – Acoustic Echo Celler (S2C)

**S2C** is the bdSound's high performant echo canceling solution to:

- **remove** echo in handsfree communication
- **improve** quality of conversation



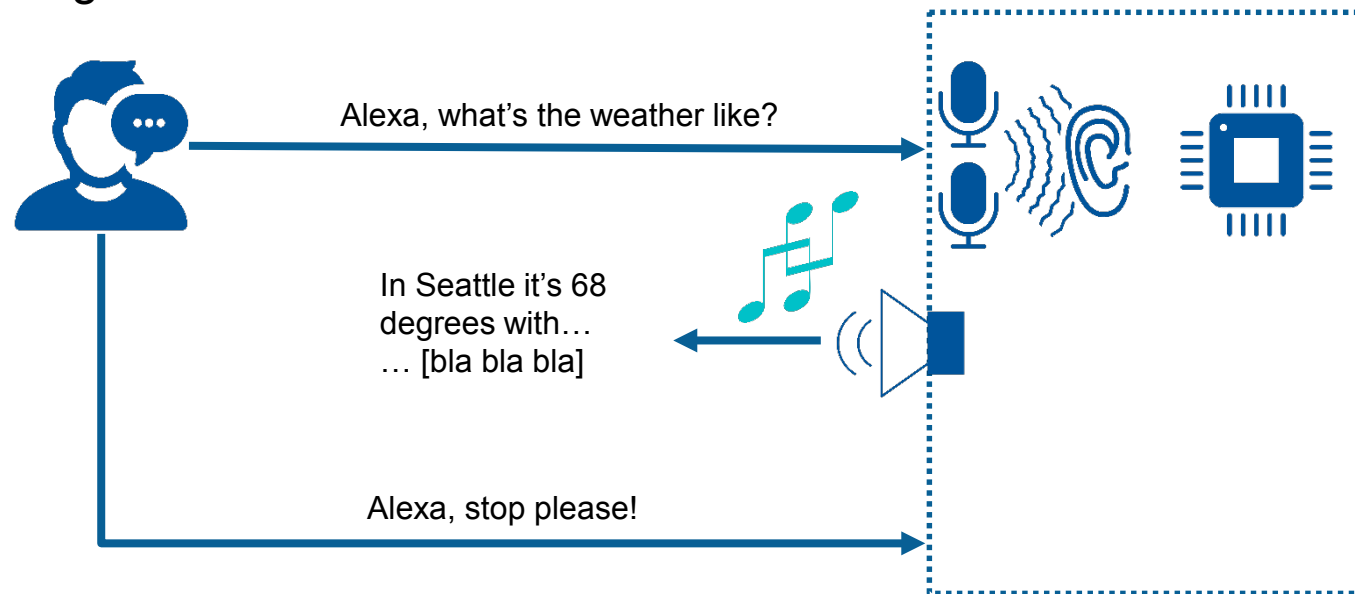
- **Gain:** a fixed programmable gain
- **NR:** noise reduction
- **REC:** residual echo canceller
- **CNG:** adaptive comfort noise generator

- **AGC:** automatic gain control
- **GEQ:** 1/3<sup>rd</sup> octave graphic equalizer
- **PEQ:** 5-bands parametric graphic equalizer, high shelving and high pass filters
- **LIM:** limiter

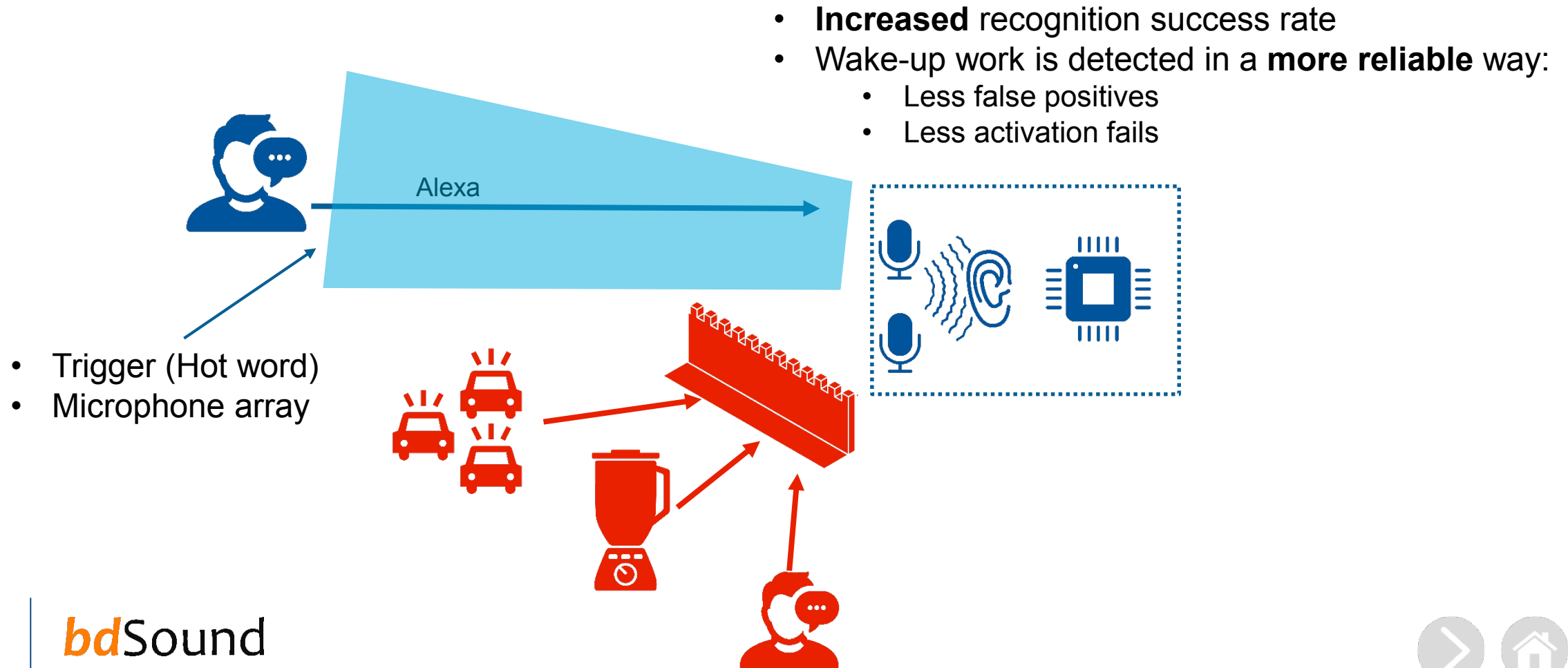
# Barge-in

bdSound's solution allows to:

- **Experience** a more natural interaction with Voice Assistants during music reproduction (without muting)
- **Interrupt** the Voice Assistant during vocal feedbacks
- **Avoid** self-triggering



# Hot Word recognition



# bdSound Company Presentation

Intelligent Audio Solutions to Improve Quality in Audio/Speech Applications

Proprietary cutting-edge technologies



**Proprietary IPs** to enhance customer's solution

(noise reduction, ASR enhancer, microphone arrays, echo canceller, VoIP stack, ASYNC Sample Rate Converter, AES10, AES3, AVB, audio interface management)

Expertise and field proven successes



**Implementation and integration** on several HW platforms (from CortexM to FPGA); custom HW,SW,FW blocks; Testing and Certification support

Multi-disciplinary: Hardware, Firmware and Software



Full development of **prototypes, reference designs** (team of expert audio engineers based in Milan, Italy)

# bdSound Company Presentation

## Where You Can Find Ss

Forensic, police forces  
and security

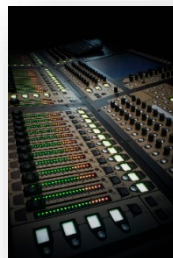


Automotive



Air traffic control

Professional  
Audio



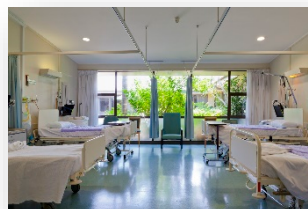
bdSound



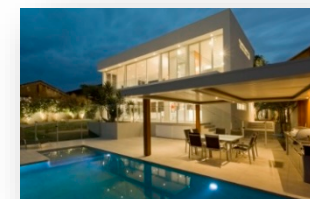
Railway communication  
systems



Videoconference  
equipment



Hospitals and harsh  
environments



Home and Building  
Automation and  
Intercoms