

YOBE

CAFE

product brief



The preservation of linguistic and biological markers in low SNR environments

Yobe's CAFE software product is an intelligent, conversational audio front end. It enables organizations to extract the maximum benefit from voice -- for speech recognition, voice analytics, and more.

Audio Front Ends (AFE's) traditionally focus on standard audio problems like signal cleanup and standard audio solutions like noise cancellation. But Yobe's CAFE (**Conversational Audio Front End**) software product is different. It's an adaptive, conversationally focused audio front end that strives to preserve linguistic and biological markers found in voice signals.

Based on Yobe's ADL (**Adaptive Discriminant Listening**) solution, CAFE is a proprietary, on-the-edge, artificial intelligence engine that effectively listens for voice – in complicated audio settings with challenging signal-to-noise ratios (SNRs), at a level of performance and scalability not previously seen. Through its improved signal and advanced insights for applications and devices, CAFE enables organizations to extract the maximum business and customer benefit from voice -- for speech recognition, voice analytics, and more.

Low SNR Effective

Raises SNR levels as low as -20 db to positive territory while preserving critical voice data

WW & ASR Agnostic

Does not introduce unnatural artifacts that adversely affect ASR and other voice analytics platforms

Edge Compatible

Operates 100% on the edge with no need for Internet or cloud computing

Reference Independent

Operates without the need of a reference signal for noise cancellation

Co-Directional Effective

Separates co-directional noise sources in scenarios where beamforming is not effective

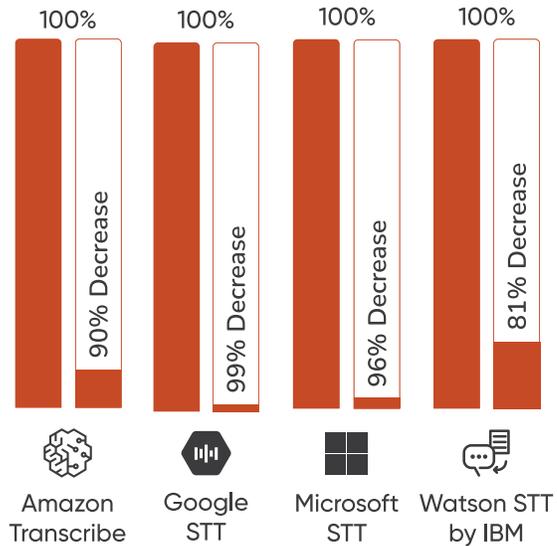
Wind Noise Adaptive

Allows accurate voice capture in outdoor and environmentally challenging scenarios

CAFE gives device manufacturers, application developers, brands, and speech partners the ability to deliver better business outcomes and customer experiences across a wide range of industries and use cases, including mobile phones, smart speakers, smart appliances, in-cabin use in cars and other vehicles, retail kiosks, industrial applications, security, wearables, and other applications.

The advantage needed for your voice platform to operate effectively in the real world

Word Error Rate Improvement (-20 db SNR)



Data based on a third-party evaluation

Focus on the voice, not the noise

CAFE isolates the voice of interest and lowers the noise level while retaining key biomarkers, enabling your business to focus on the audio and outcomes that matter most.

CAFE preserves the voice metadata needed for accurate speech and speaker recognition. This enables businesses and brands to harness the full power of voice-enabled platforms in real-world acoustic environments.

Intelligent listening, on the edge

CAFE intelligently listens, distinguishing between simultaneous audio sources. CAFE is a library that runs on the edge - without requiring an internet connection or cloud based computing, and can operate on a variety of hardware platforms and operating environments.

The right answer for your use case

CAFE has different solutions based on your voice use case. As a device-agnostic software-first platform the only real question is how many microphones will we have access to (two vs. more than two).

Requirements	
Data Memory	50 kbytes
Library Size	75 kbytes
1-CPU Usage	15%
Platform	Linux, Windows, ARM (32-bit, 64-bit)

Metric	Results
Processing Latency	less than 50 ms
SNR Improvement	Up to 30 db
ASR/STT accuracy of 95%+	Noise up to 4x louder than voice of interest
Keyword recognition accuracy of 95%+	Noise up to 8x louder than voice of interest