

## AI-Powered

# Context Awareness

### Overview:

Meeami's Context Awareness solution uses Acoustic Scene Classification (ASC) to identify the user's surrounding environment – such as home, office, street, or cafe – based purely on audio input. The primary goal is to activate or deactivate system modules intelligently based on context, enabling power-efficient and adaptive audio processing.

### Ideal Use Cases

- **Embedded Voice Assistants & Smart Devices**  
Dynamically adjust audio pipelines based on whether the user is indoors, outdoors, or commuting.
- **Call Centers and Mobile Apps**  
Enable or tune noise suppression only when needed, optimizing power consumption and user experience.
- **Autonomous Vehicles**  
Identify surroundings like tunnel, rain, or traffic noise to supplement camera/radar inputs for decision-making.
- **Security & Surveillance**  
Detect anomalies – e.g., sudden crowd noise or glass breaking – by monitoring transitions in ambient scenes.

### Technical Specifications

Feature	Specification
Latency	2–3 seconds
Memory Footprint	< 500 KB (Low footprint model: 230 KB)
MACs	< 5 million (Low footprint model: 2M MACs)
Supported Classes	Up to 15 acoustic scenes
Power	Always-on capability with ultra-low compute design

## Key Outcomes

- **Adaptive Audio Processing**

No need to run all enhancement modules continuously – saves compute and power.

- **Improved End-User Experience**

Automatically adjusts to real-world situations, enhancing call and interaction quality.

- **Ultra-Light Deployment**

Designed to run 24/7 even on low-power chipsets.

- **Scalable Across Industries**

From consumer devices to automotive and security systems.

## Transformational Impact

Without Context Awareness	With Context Awareness
All modules run continuously → higher power	Modules activate selectively, saving power
Flat audio tuning in all conditions	Adaptive, context-based tuning
No understanding of user's surroundings	Dynamic scene detection with 2–3s latency
Increased load on edge devices	Lightweight runtime, <500KB model

## Contact Us to Collaborate or Test

Want to optimize your speech enhancement pipeline with intelligent context? Meeami's Context Awareness engine is available for pilot integration.  
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