GRADIANT VOICE

TECHNICAL SPECIFICATION. VERSION 1.1.0
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GRADIANT VOICE integrates latest GRADIANT's speaker recognition technology, especially designed for authentication in mobility scenarios. GRADIANT VOICE comprises a set of libraries ready for integration in mobile and server platforms. It is intended for biometric system integrators as well as application developers. GRADIANT VOICE combines audio processing, pattern recognition and machine learning techniques, enabling fully automatic speaker recognition with just a few seconds of speech.

HIGHLIGHTS

- Designed and created for mobile scenarios.
- Mobile device embedded real-time processing. Fast template extraction from audio sequences.
- Multiplatform: Android, Linux.
- Fully compatible biometric templates between computer and mobile platforms, allowing different system architectures (mobile embedded, client (mobile)-server, client (PC)-server).
- Anti-spoofing mechanisms.*
- Increased security, convenience and availability can be achieved by the easy combination of compatible GRADIANT biometric modalities such as face or signature recognition.

TECHNICAL DETAILS

GRADIANT VOICE integrates several modules in order to provide a complete mobile authentication solution:

ACQUISITION MODULES

Acquisition and microphone control modules for mobile devices allowing fast integration and development of third-party applications.

VOICE ACTIVITY DETECTION

Fast algorithm to detect and discard silence segments, optimised for mobile devices.

VOICE TEMPLATE EXTRACTION MODULE

Voice template extraction from a few seconds of speech.

Speech quality assessment to ensure the acquired speech meet the requirements for system security.*

MATCHING MODULE

Biometric template matching, allowing an easy development of verification and identification applications.

ANTI-SPOOFING MODULE

Liveness detection through text dependent voice recognition.*

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*To be released.

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PLATFORMS

ANDROID

Minimum OS	Smartphone or tablet with Android 4.0 OS or above (API 14)
Minimum hardware	1.5 GHz dual core processor or higher Reference devices: mid-range Android devices with mic quality similar to the Google's Nexus 5 or higher
Programming language	Java API

PC / SERVER

Minimum OS	Linux (32 bit and 64 bit)
Programming language	C++ API Java API

PERFORMANCE

Mobile device	For a device with a Exynos 4412 Quad-Core (1.7 GHz) and 2 GB RAM 3.327 seconds per template generation (Uses 10 seconds of audio) 0.594 seconds per verification (Uses 4 seconds of audio)
PC / Server	For an Intel(R) Xeon CPU X5675 @ 3.07GHz (single threaded) 1.11 seconds per template generation (Uses 10 seconds of audio) 0.276 ms per verification (Uses 4 seconds of audio)

DEMOS AVAILABLE

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