
Voice Biometric Solutions:

VoiceGrid™ LN

SpeechPro Voice Biometric Solutions provide essential voice identification functionality to take advantage of the vast amount of audio data available as a byproduct of today's recording technologies and operations.

Voice mails, 911 calls and communications, call center inquiries, and recordings made during suspect and investigative interviews can all be utilized to create databases of known or suspect voices in a passive manner. In an active approach, voice samples can be collected during the booking process or via mobile devices at the same time fingerprint and/or facial images are acquired. Historically this data had limited use beyond fundamental review and rudimentary analysis of the monolog or dialog.

The VoiceGrid™ LN system provides the unparalleled voice biometric matching capabilities of SpeechPro/STC in a single server local area network configuration. VoiceGrid™ LN is designed to accommodate larger voice databases and can operate in a stand-alone server/workstation configuration or support multiple workstations.

Main tasks and interfaces:

- Quickly identify or eliminate speakers under investigation
- Create, monitor and manage the voice database
- Interfaces directly to IKAR Lab (optional upgrade) for expert forensic analysis
- Live enrollment from booking process or other controlled environment
- Batch input and data migration

VoiceGrid™ LN is ideal for agencies with a larger voice database requirement but with only the need for a stand-alone system or multiple workstations within the same facility or campus. Additionally VoiceGrid™ LN can be delivered as either a software-only solution to be installed on customer provided hardware or as a full turn-key solution including both hardware and software.

The turn-key solution delivers additional benefits by providing out-of-the-box plug and play capabilities. This will allow the user to quickly utilize the system and begin immediate operations without having to tax their existing IT infrastructure or resources. Additionally it will alleviate any compatibility issues with existing hardware and be pre-configured to the exact specifications required.

As with the entire VoiceGrid™ product line, voice matching is accomplished through the utilization of the SpeechPro/STC exclusive methods of processing, segmentation, feature extraction and identification of voice samples. This ensures the highest levels of accuracy and provides an additional and valuable tool in assisting in investigations where voice evidence may be present such as:

- Kidnapping
 - Extortion
 - Domestic Violence
 - Terroristic Threats
 - Prank or False Report Calls
 - Corruption
 - Drug Trafficking
 - Gang & Organized Crime
 - Abuse of Emergency or 911 Communication Channels
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Features & Functionality:

- Quickly identify or eliminate speakers under investigation by matched ranking scored by percentage of probability
- Create, monitor and manage the voice database
- Full control over the administration and management of the voice data including access rights and security levels
- Automatic speech signal resampling and segmentation
- Ability to store and search by additional data (demographic, biographic) associated with the voice sample
- Identification results can be viewed, analyzed and printed
- Adjustable filtering to fine tune results
- Compatible with IKAR Lab for expert analysis and verification

Base Deliverable Includes:

VoiceGrid™ LN server software:

- Operator web application for voice DB management , search and identification tasks
- Administrator web application for users and security management and fine tuning
- TemplateManager web application for DB structure management

VoiceGrid™ LN client software:

- MultiPassport software for speakers' enrollment in controlled environment and quality assessment of uncontrolled voice records
- ImportUtility Software for batch input and data migration
- eSIS Software for enhanced voice processing including speaker's record splitting, visualization and additional audio investigation capabilities

System Specifications:

Turn-key system:

Maximum Voice Database Size	10,000 records
Maximum Number of Client Workstations	10
Estimated Search Time at Maximum DB Size	1 minute
Biometric feature extraction time	9.5 sec.
Standard Server Hardware	Intel Core i7, 2.66GHz/8Gb DDR3/SSD 180Gb
Standard Server System Software	CentOS Linux 5 (x64) / Oracle XE10 / Tomcat 6

Recommended Workstations:

Workstation Hardware	Intel® Core™ 2 Duo, 2.66 GHz
Workstation O/S	Microsoft® Windows® XP, Microsoft® Windows® 7

The VoiceGrid™ Product Line

VoiceGrid™ LN – single server network solution for 1:N searches, supports a database of up to 10,000 records and up to 10 workstations.

VoiceGrid™ ID – networked 1:N search and voice data management solution with unlimited database size and unlimited web client workstation connectivity. Distributed processing and WAN architecture designed for large city, county, state or national system deployments.

VoiceGrid X – a stand-alone application for speaker identification in multiple files. Performs a N:N search of up to 100 target speakers in up to 10,000 records per day.

VoiceGrid™ RT – a sophisticated distributed solution for real-time speaker identification in communication channels, phone calls, files from mobile devices and other sources. Integrates with voice database up to 10,000 target speakers which can be scaled up to millions of processed records per day.

VoiceGrid™ SDK provides the same tools and algorithms available within the VoiceGrid™ line but with the ability for business partners with development resources to integrate the technology into their own platforms.



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