Multi – Level System of Voice Biometrics

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Leading provider
of speech technologies
and security equipment

→ Founded in 1990
→ International ISO-9001:2000 certificate
→ Member of International Biometric Society
→ All proprietary technologies are patented
→ Hardware units are CE/FCC certified
→ Over 250 employees, 23 PhD
→ Client base in over 60 countries
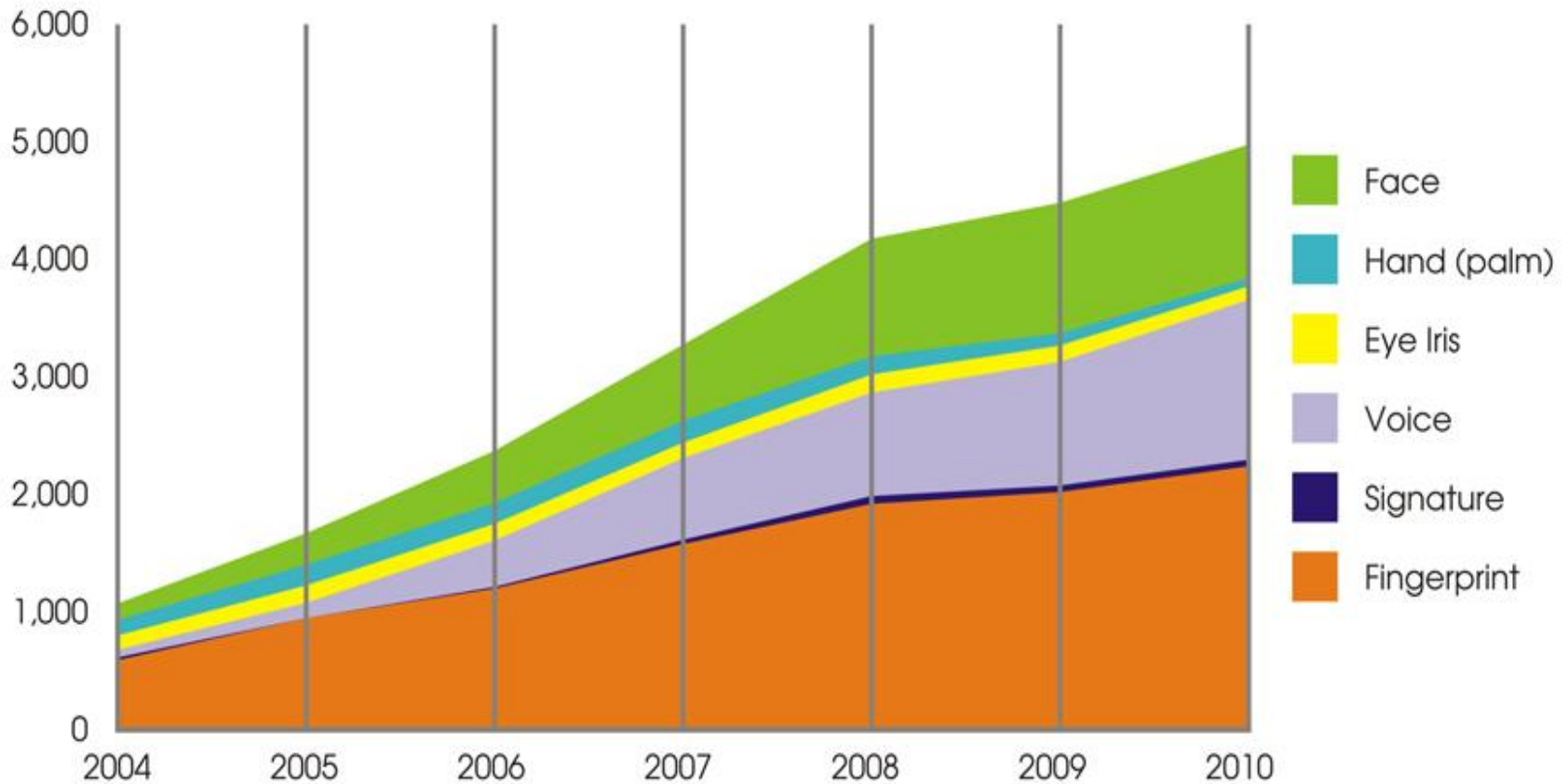
Comprehensive product line for government agencies and corporate clients:

➡ Voice Recording

➡ Noise Cancellation

➡ Biometric Voice Verification and Identification
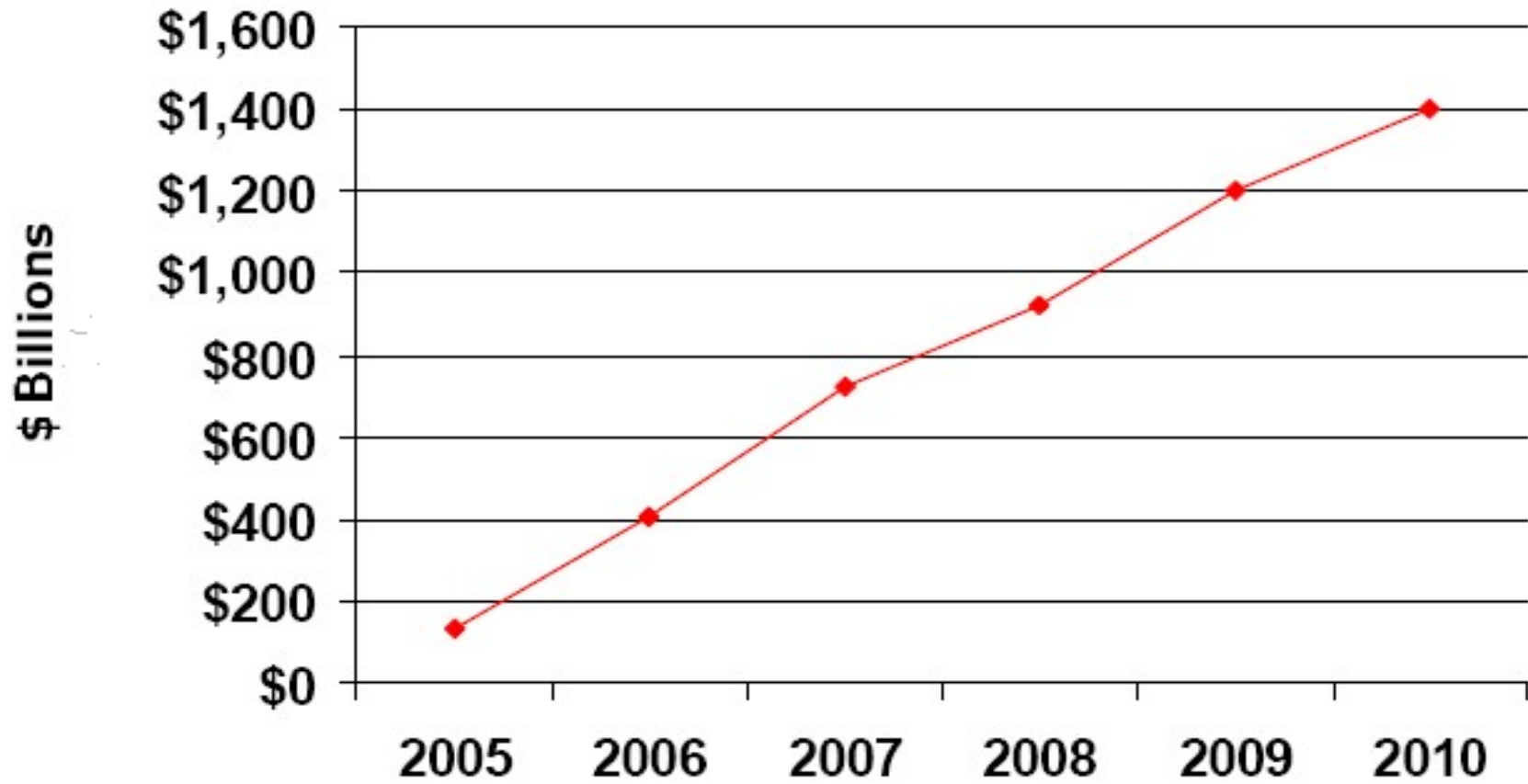
➡ Forensic Audio Analysis

➡ R&D projects
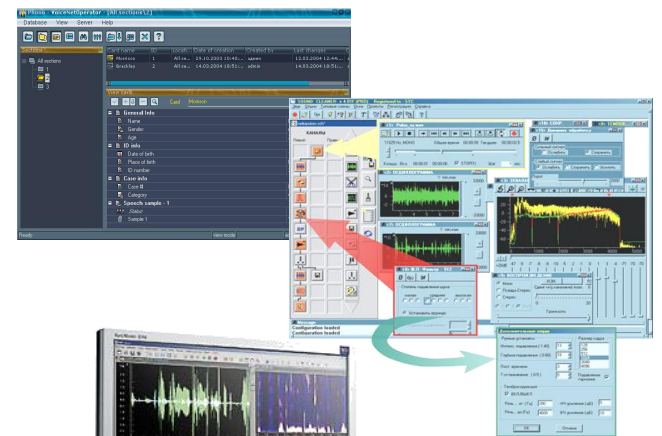
Biometric Systems Demand Growth

materials from the reports of Dan Miller,
Senior Analyst, Opus Research

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Voice Biometrics in LEA and Police

Biometric Audio Analysis Systems Tasks

Search
- Investigation units
- Preliminary investigation agencies

Identification
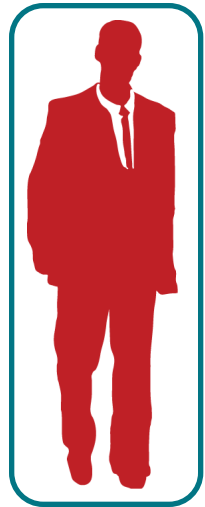- Audio Forensic Experts Departments

Search Tasks

Wanted Criminal

Suspected Persons

Minimizing the list of suspected persons

Individual voice patterns

Anthropometric parameters

Gender

Age

Accent or dialect
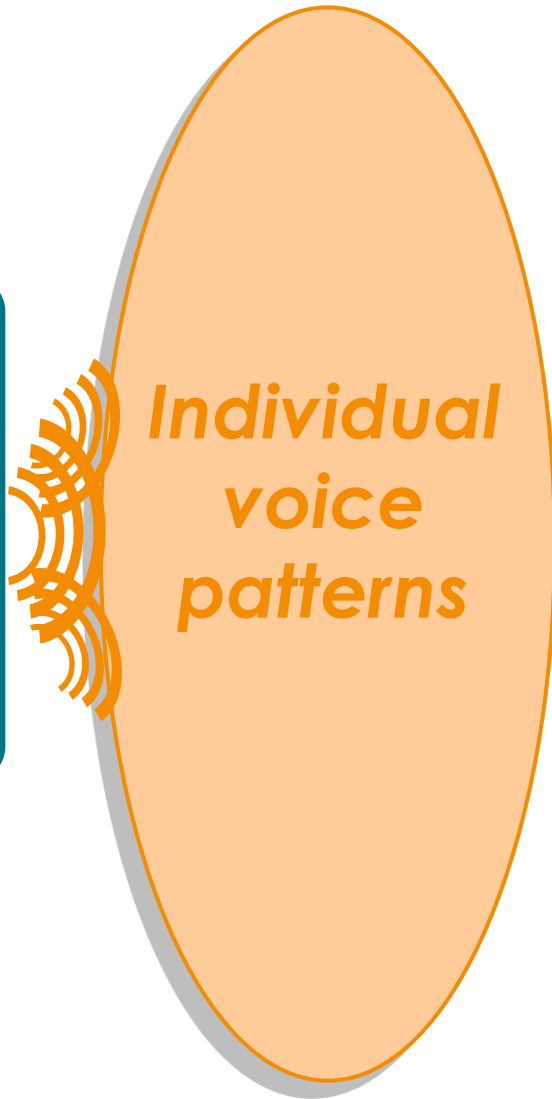
Nationality

Place of residing

Criminal Profiling

Identification Tasks
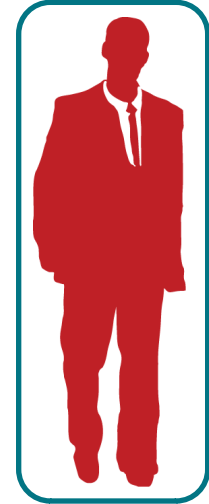
Wanted Criminal
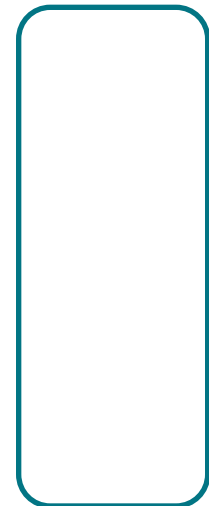
Suspected Persons
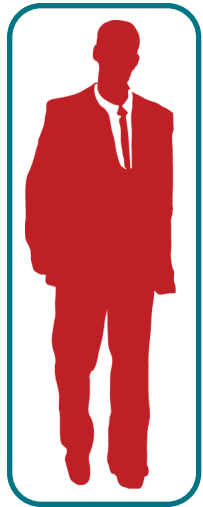
Individual voice patterns

Guilty

Innocent

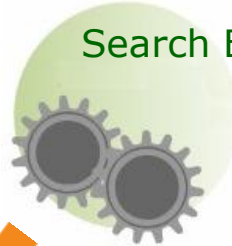# Multi – Level System of Voice Biometrics

Automatic Speaker Search

Database of Suspected Persons

ID Bank

Search Engine

Criminal Voice Recording
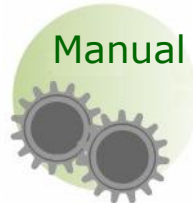
Forensic Audio Analysis   and Speaker Identification

Minimized list of Suspected Persons

Manual Analysis

Criminal Voice Recording

Guilty   Innocent

Automated Speaker Identity Diagnosis

Criminal Profiling

Diagnosis Engine

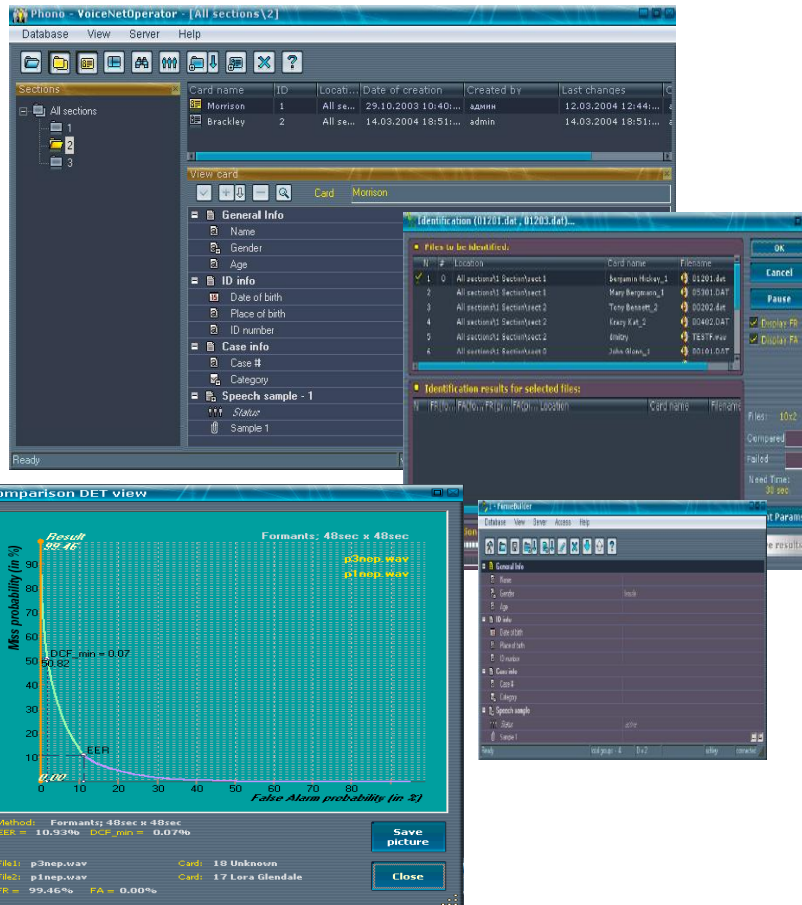Criminal Voice Recording

VoiceNET – Automatic Speaker Search

VoiceNet is a system intended for automatic speaker search.
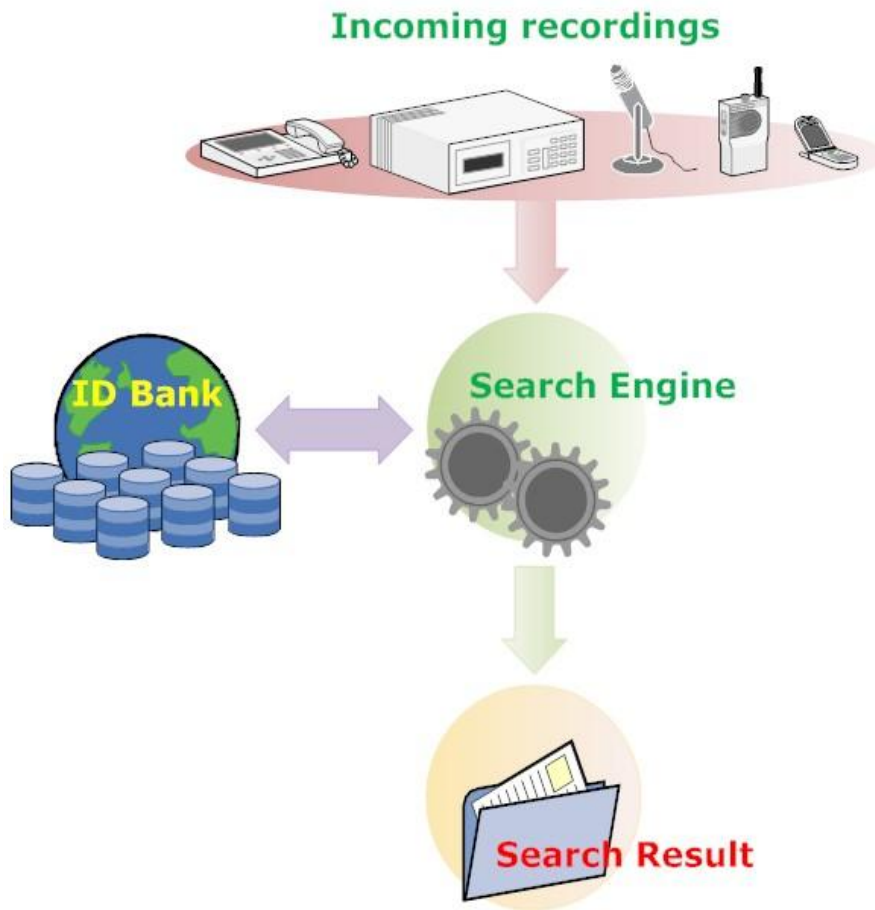
VoiceNET is widely used by

➡ Police and Law Enforcement
➡ Crime Investigation
➡ Audio Forensic departments

VoiceNET

➡ minimises the list of suspected persons
➡ results are used for further forensic audio analysis

VoiceNet automatically compares "speaker cards" of database (suspected) and "unknown" (wanted) speakers.

"**Speaker card**" -

individual biometric patterns of speaker's voice necessary for identification.

VoiceNET gives a result of match probability with each certain speaker.

VoiceNET Highlights

➡ Fully automated. Easy and handy usage

➡ Supports all file formats (mono, stereo, wav, mp3, etc.)

➡ Works with natural spontaneous speech

➡ Works with poor quality recordings

➡ Language independent

➡ Requires minimum of recording duration

➡ Provides high level of search reliability

➡ Uses 3 methods of analysis (Formant, Pitch, GMM)

➡ High speed of search

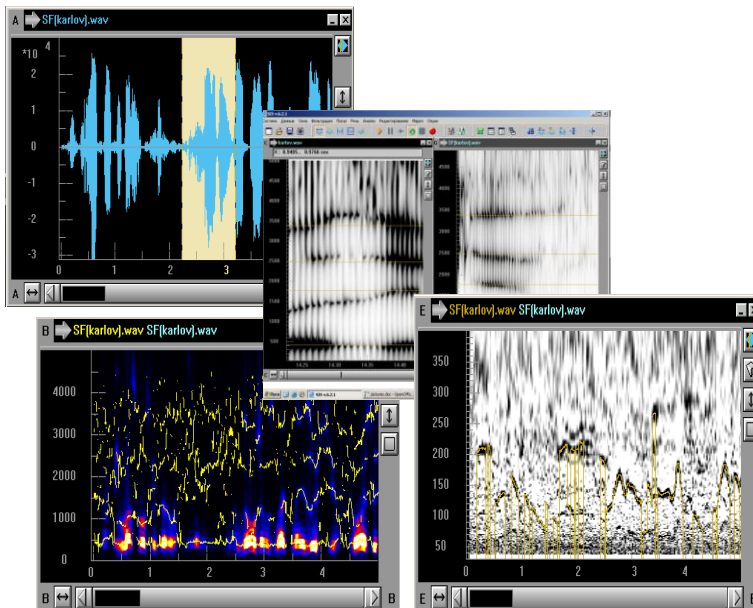➡ High system scalability

IKAR Lab – Forensic Audio Analysis

IKAR Lab is intended for forensic audio analysis and speakers identification.

Provides a complex approach:

➡ Input/Output, Visualization, Editing
➡ Different types of audio analysis
➡ Instrumental
➡ Auditory – Linguistic
➡ Psychological

➡ Noise cancellation
➡ Record authentication

IKAR Lab is

➡ An indispensable tool for forensic audio examinations
➡ Used in a large number of forensic labs of the world

Region - automated speaker identity diagnosis

Region is intended for automated speaker identity diagnosis.

Region allows to receive info about:

➡ Anthropometric characteristics

➡ Age, Gender

➡ Accent or dialect

➡ Nationality, Places of long residing

Region is used in Crime Investigation departments.

Region

➡ Minimizes the list of suspected persons

➡ Greatly helps investigation to find criminals

➡️ Accurate and reliable identity diagnosis

➡️ Works with poor quality recordings

➡️ Easy, intuitive, handy usage

➡️ Text and language independent

➡️ Can be developed for any language group

Thank you for your attention!

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