STC GROUP

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GridID

Multimodal Biometric Identification System

GridID is a unified biometric identification and analysis platform designed for law enforcement agencies and forensic laboratories dealing with organized crime, fraud, corruption, terrorism and other types of security threats.

FEATURES

- Streamlined process of biometric samples gathering and enrollment
- Investigative functionality:
  - automatic search and identification by voice, face and other biometric patterns
  - real-time multi-thread analysis and identification of voices incalls
  - voice data processing: keyword search in speech recordings, speech recognition (Speech-to-Text), speaker's language and gender detection
- Forensic analysis:
  - biometric data verification and reporting for legal proceedings
  - noise cancellation and speech enhancement
  - authenticity analysis of voice and video recordings
- Report generation and monitoring performance of users and systems

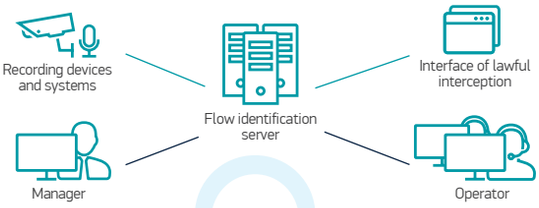
ADVANTAGES

- Full cycle of biometric analysis: from sample collection to a court report generation
- Automatic language and gender identification, keyword spotting and speech-to-text conversion
- Automatic speech detection and segmentation
- Scalable centralized or distributed architecture
- Ready for integration with external systems or additional biometric parameters
- Automatic pre-processing and indexing of biometric patterns and quality control
- Flexible modular structure to meet particular need of every department

GridID.Platform – Service platform of biometric system

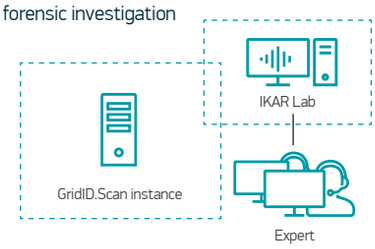
GridID.Scan – for offline biometric search

GridID.ScanRT - for operational activities



GridID.Sampler – for gathering biometric samples

GridID.Lab – for forensic investigation



PERFORMANCE

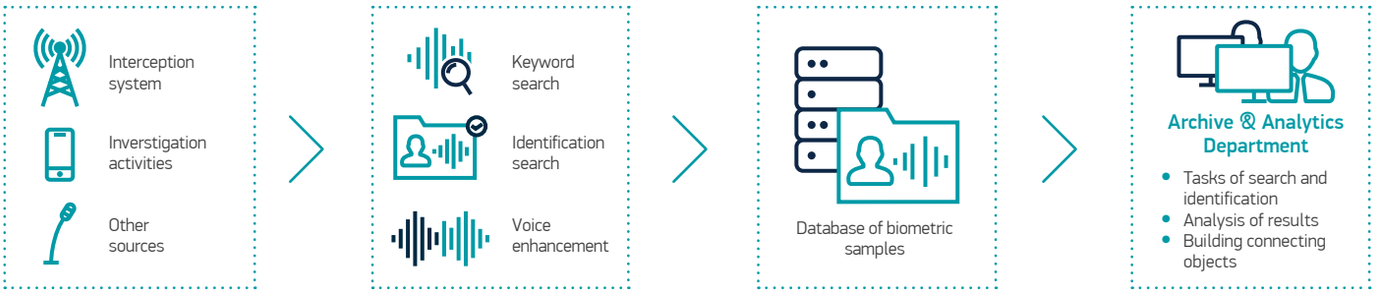
Voice biometric

- Up to **100k** processed calls per day (for 16 cores processing server, avg. 2 min. calls duration)
- Biometric processing time = **35RT**. Up **10,000** biometric comparisons per sec (1 core)
- EER of GridID.ScanRT = **5%** (for 2 minutes average call duration)
- EER of GridID.Scan = **1,5%** (for comparison of models built on pure voice samples duration more than 96 sec)

Face biometric

- Calculation of sample = **230 ms**
- Speed of comparison = **1000k** per sec
- Sample detection avg. error = **5%** (of eye distance)
- EER of verification = **~0.5%: FA (FR=10e-5)** depending on quality of patterns

USE-CASE SCENARIO 1:

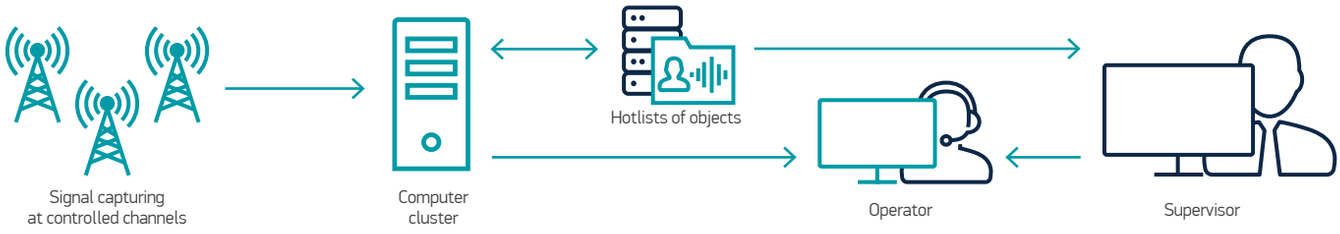


- Handling 100k calls per day from fixed/mobile phone
- Enrollment of 2000 samples for 2000 unique target speakers with good audio patterns (20 operators or BioIndex technology)
- Using GridID.Sampler: 10 min per target speech per operator. 45 samples per operator per day
- Search and identification: up to 20 parallel searches (1:100 000) per minute

Handling audio tracks might require additional manual processing and estimation

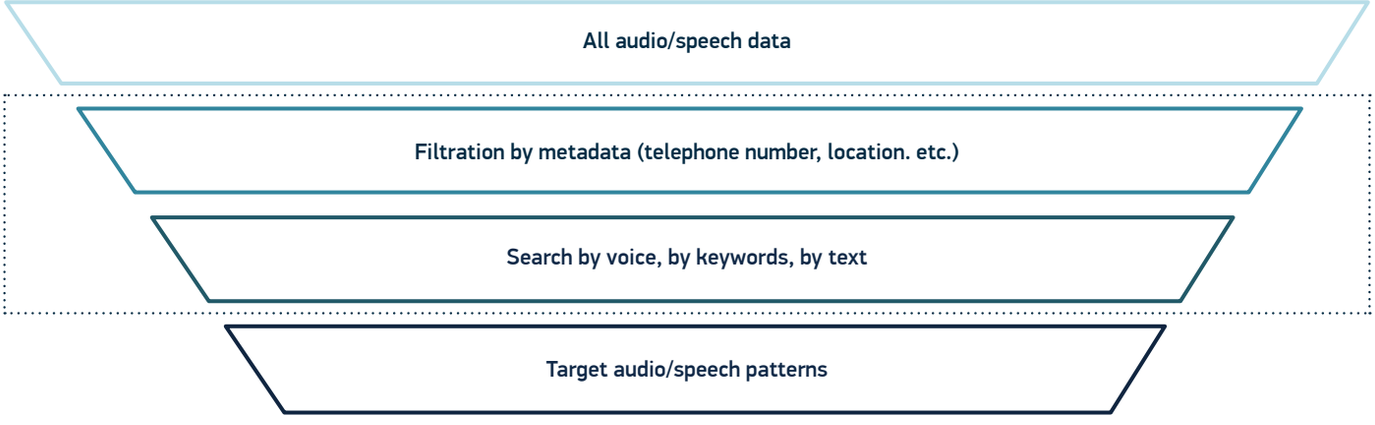
Legacy VoiceGrid system can be easily upgraded to new GridID system keeping the same complete voice print database

USE-CASE SCENARIO 2:



- Handling 100.000 calls per day from fixed/mobile/VoIP phone via BioIndex technology
- 1 biometric processing server
- Keyword search and transcribing (only supported languages): 2RT (RealTime) for 11.500 calls

Automatic handling of other audio tracks and sources available for close microphone conditions



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