Speech Technology Center

Voice Biometric Solutions:

VoiceGrid ™

VoiceGrid: Nation-wide multimodal biometric system

The solution for identity authentication and verification based on the combination of two biometric technologies used covertly – speaker identification and face recognition. Networked 1:N search and biometric 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 implements, maintains and automates a universal biometric database system at local, regional and/or national levels
- Integrated STC biometric capabilities perform 1:N search and automatic biometric identification
- Forensic investigation of biometric data provides admissible evidence in court proceedings

System advantages:

- There is no need to contact with the individual when enrolling biometric samples
- More accurate results are received due to the combination of speaker identification and face recognition technologies
- Low costs of samples enrollment, system deployment and exploitation
- Both biometric technologies are enabled to work on the databases of large volume

Unimodal and bimodal biometric technologies

Current situation:
Most of the biometric systems are characterized by unimodality, i.e. only one behavioral or physical characteristic of the individual is used for identification.

Problem:
Insufficient level of the results reliability.

Purpose:
Increased reliability of the results by combining different methods of identification within a single system.

Decision:
Nation-wide multimodal biometric system VoiceGrid which is based on two biometric technologies - voice identification and face recognition.

Data security:
Data storage and transmission are secured by:
- HTTPS protocol
- Access rights assigned according to operator group, rank and/or function
- Tracking and recording of all operator actions
- Measures to eliminate password theft in the workplace

Integration:
VoiceGrid is easily integrated with STC expert forensic systems, as well as with other biometric and non-biometric systems.
Platform independence:
- Compatible with any operating system
- Easily integrated with existing IT infrastructure.

Low costs for the deployment and technical support of the system:
VoiceGrid has a number of advantages, particularly, it is low cost of deployment, technical support, easy maintenance, scalability and integration with other biometric and non-biometric systems.

Web-based access:
- Web-based user-friendly software interface
- Works on any web browser

Scalability:
VoiceGrid is a universal platform for biometric data management, operating directly on data in the lab and networked to regional, state or national databases.
It can be scaled on multiple levels:
- database size
- number of operators
- number of computational servers

Technical support:
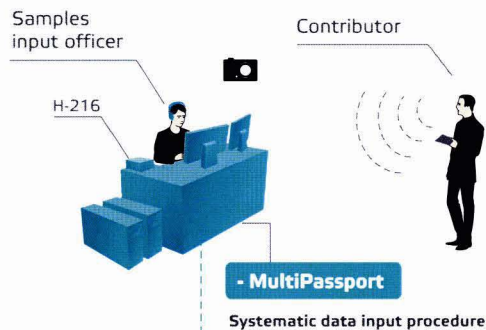Two-level technical support, available 24/7, from:
- STC development headquarters
- Local STC service centers
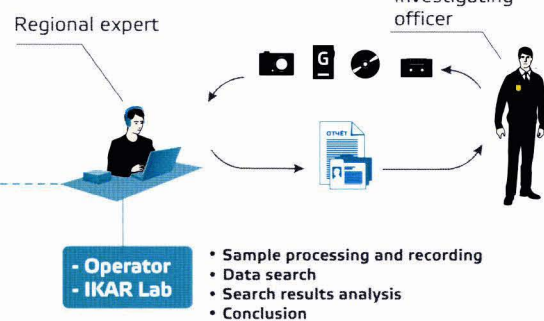
Customer training:
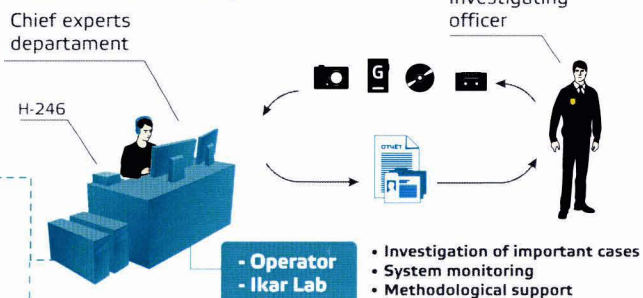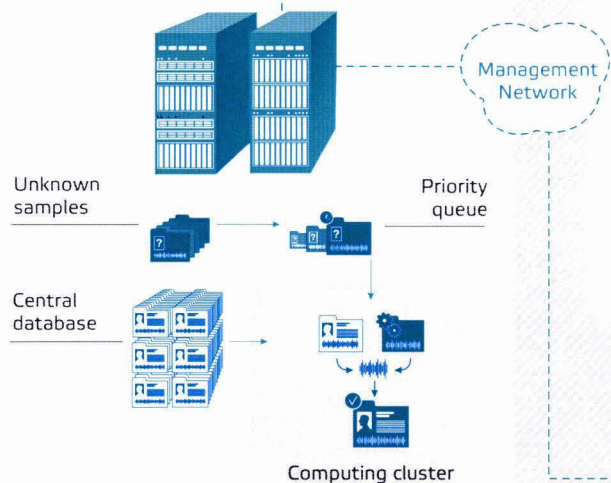STC specialists provide comprehensive, hands-on training.

Region

Enrollment

Samples input officer

Contributor

H-216

- MultiPassport

Systematic data input procedure

Investigation office

Regional expert

Investigating officer

- Operator
- IKAR Lab

- Sample processing and recording
- Data search
- Search results analysis
- Conclusion

WAN or Internet

HQ

Central laboratory

Chief experts departament

Investigating officer

H-246

- Operator
- Ikar Lab

- Investigation of important cases
- System monitoring
- Methodological support

User Administrator

- Administrator

- Creates accounts
- Manages the group structure
- Receives notifications in case of password theft suspicion

Database Structure Administrator

- Template Manager

- Creates speaker cards samples
- Creates shortcuts to access the database sections

Data center

Unknown samples

Priority queue

Central database

Management Network

Computing cluster

Security Administration Center

Hardware Administration

- Monitoring tools
- Administrator

Receives notifications of hardware failures