AGNITIO
Your Voice Biometrics Partner for Homeland Security

BS³
BIOMETRIC SPEAKER SPOTTING SYSTEM

Biometric Speaker Spotting System (BS³)

Engine designed for integration in large-scale systems

- such as intelligence and strategic interception systems -

to **spot, filter** and **classify**

large amounts of **incoming audio files**

(landline, cellular, VOIP)

BS³ - Feature rich capabilities:

• **Speaker Identification**

The system compares incoming audio files (up to two speakers within a mono or a stereo channel) with one or various potential targets (**N to M identification**).

Spotted audios are returned with associated target matching scores (Likelihood Ratios – LR), which are compared with defined threshold levels that trigger alarms in related strategic interception and intelligence systems.

• **Gender Identification**

The system identifies the gender (male/female) of the speaker/s of the recording, allowing the system to focus on a specific gender.

• **Language Identification**

The system performs the comparison of incoming audio files with the pre-loaded language models (**open set identification**), adding operative value to live communication monitoring by directing calls to the appropriate live listener.

BS³ uses AGNITIO's proprietary and pioneering voice biometrics technology (**text independent, channel independent and language independent**) based on unique information extracted from an individual's vocal tract, thus obtaining a high level of accuracy and reliability.

BS³ Functions:

➔ Speaker Identification (SID)
➔ Gender Identification (GID)
➔ Language Identification (LID)

BS³ Use cases:

➔ **Frontal analysis and processing (effective prioritization):**

Speaker spotting of key targets inside a continuous flow of telephone conversations (landline, cellular, VOIP) in near-real time

➔ **Storage 'Digint' (traceability):**

Datamining for large storage repositories to tag or classify individuals for further intelligence processing (on request)
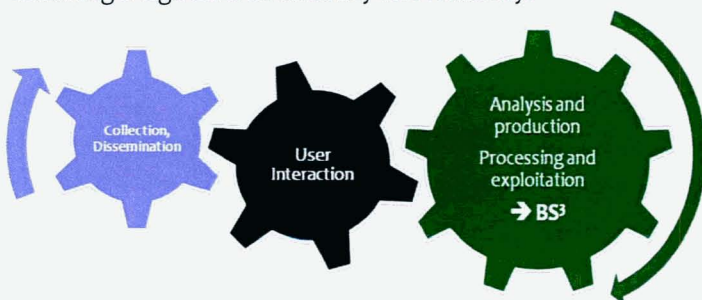
Benefits:

➔ **Reduces dramatically** the number of calls required for further intelligence processing

➔ **Facilitates** easy and quick **speaker pursuit** in huge audio data storage repositories

BS³ packaged as a software library (native JAVA API*) is modular, scalable and easy to integrate into multi-platforms

Collection, Dissemination

User Interaction

Analysis and production

Processing and exploitation

➔ BS³

API: Application Programming Interface

BS³ - Key competitive advantages:

→ High speed performance

SID, GID: a single CPU core can process up to **1000 hours of audio** in a day (20,000 incoming calls (~3mins) dealing with 500 targets) executing up to **66,000 matches per second** (fastest scoring time in marketplace) on a recommended hardware platforms – multi-threading, multi-core, multi-server

LID: a single CPU core can process up to **4600 hours of audio** in a day dealing with 12 different target languages.

→ **Smallest models** ever used (~1 kB)

→ **Best accuracy in the Marketplace**

First ever implementation of the state-of-the-art voice biometric technology (based on the latest NIST evaluation) – i.e. Gaussian Mixture Model / Joint Factor Analysis (**GMM-JFA**) – that provides a higher level of accuracy and reliability

→ **Detection of 2-speakers** in the same recording with the fastest and most efficient solution available in the marketplace

→ **Stronger front-end capabilities** (audio validation, Automatic Voice Activity Detector (AVAD)) to remove artifacts, noises and non-voice events


AGNITIO - Leading Voice Biometric Technology for Homeland Security:

Recent independent tests conducted by International Biometric Group (**IBG**) demonstrated **AGNITIO's superior voice biometric technology capabilities.**
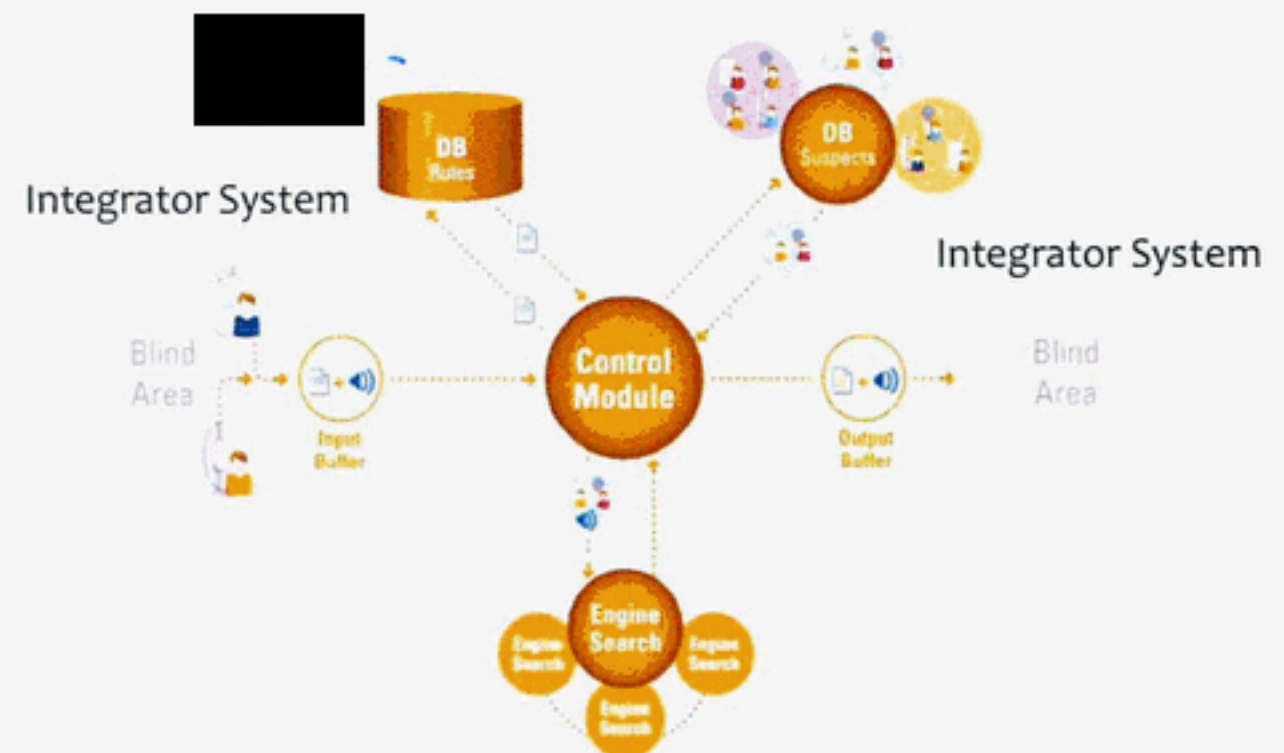
'Agnitio identified the correct voice within the top 2 results 99.02% of the time using 60 seconds of audio in a cross channel environment.'

International·Biometric·Group
Research Consulting Integration

AGNITIO's voice biometric consultants are available to provide all the necessary expertise and support to our clients worldwide in order to ensure the best results. Consulting services include voice database creation, basic and advanced training for users and system administrators.

INTELLIGENCE

Information pyramid

KNOWLEDGE

INFORMATION

DATA

BS³

Value
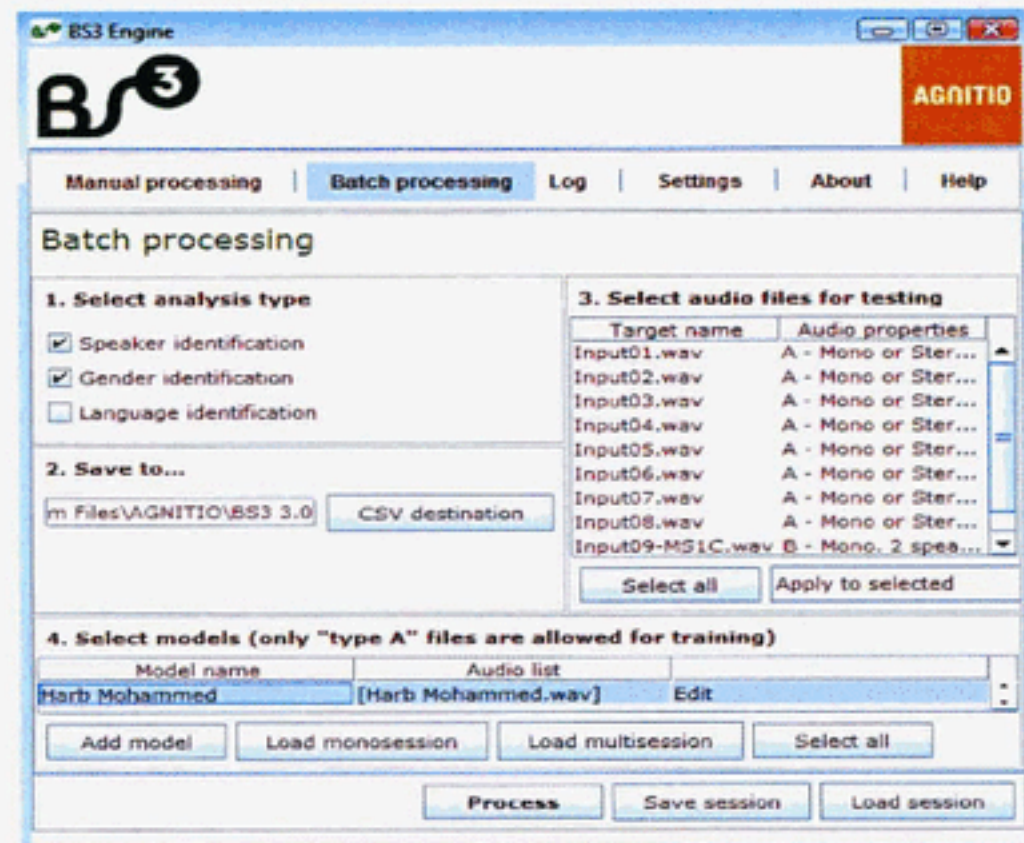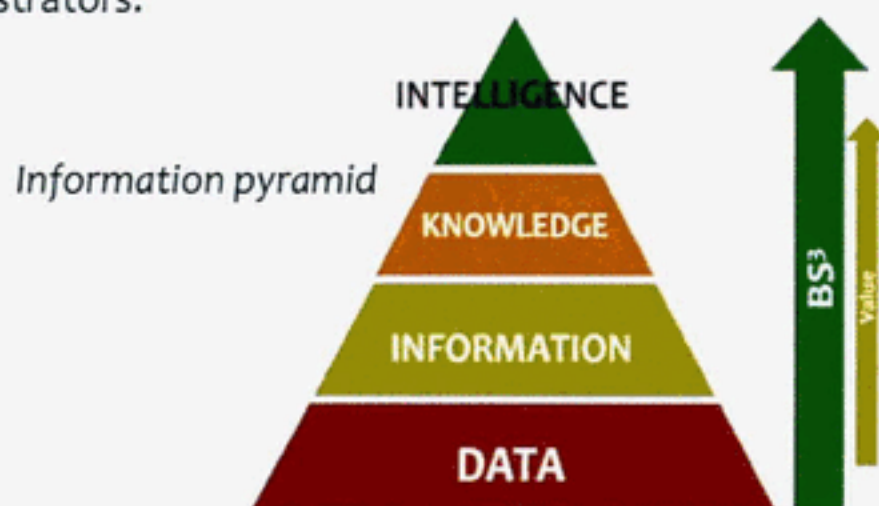
BS³ GUI *(Graphical User Interface)* - Example of integration

Integrator System

Integrator System

Blind Area

Blind Area

BS³ in Keywords:

'Provides Accuracy and Time Performance'

SID, GID, LID
Multi-speaker Separation
Accuracy
Reliability
Speed
Robustness
Scalable
Intelligence

www.agnitio.es
info@agnitio.es
Headquarters: Madrid, Spain
+34 91 512 24 17

AGNITIO