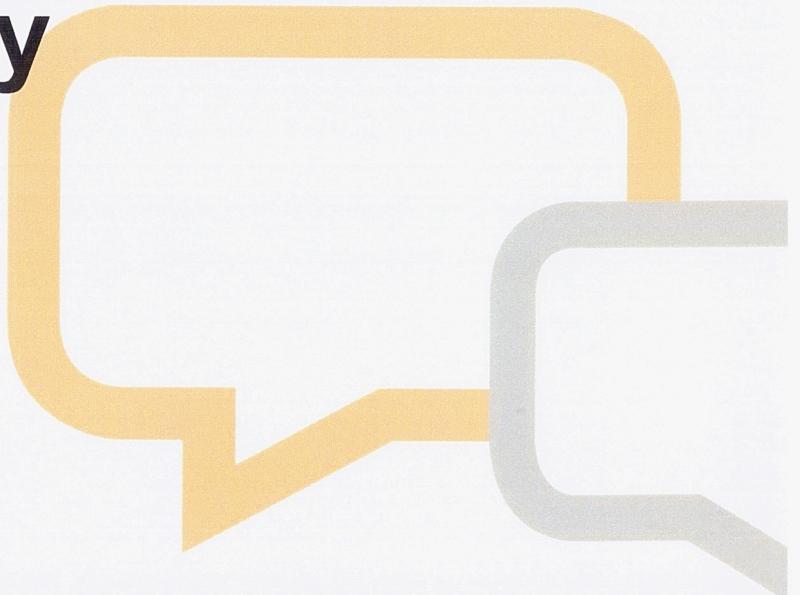


Phone*x*id

NEW GENERATION OF
SPEAKER ID & LANGUAGE ID

AGENDA

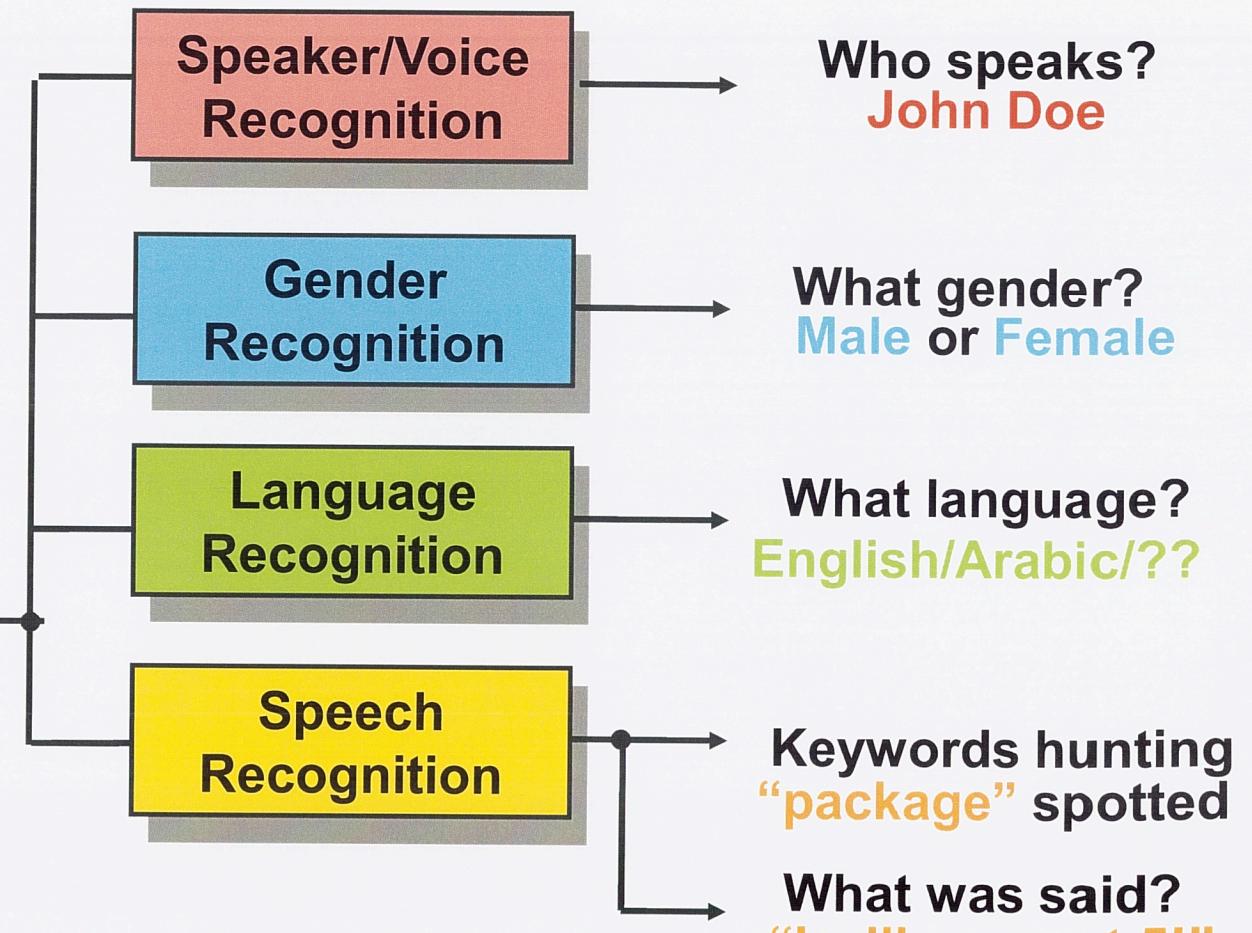
- 1. About**
- 2. SID & LID Technology**
- 3. Usage**
- 4. Integration**



SPEECH TECHNOLOGIES



audio (speech)



COOPERATION



We offer:

- **Consultations**
- **Speech technologies**
system design / technology / adaptation & optimisation
/ delivery / technical support / maintenance
- **Custom research and development**

PHONEXIA

Goal:

Help clients to extract automatically maximum of valuable information from spoken speech.

- 2006 founded as spin-off of Brno University of Technology (BUT)
- 6+ years of work for security/defense sector
15+ years experience in speech processing
- Headquarter in Czech Republic, active worldwide
- Tight collaboration with BUT
 - 20 researches moves the technology forward
 - 15 people for development, sales, marketing and technical support



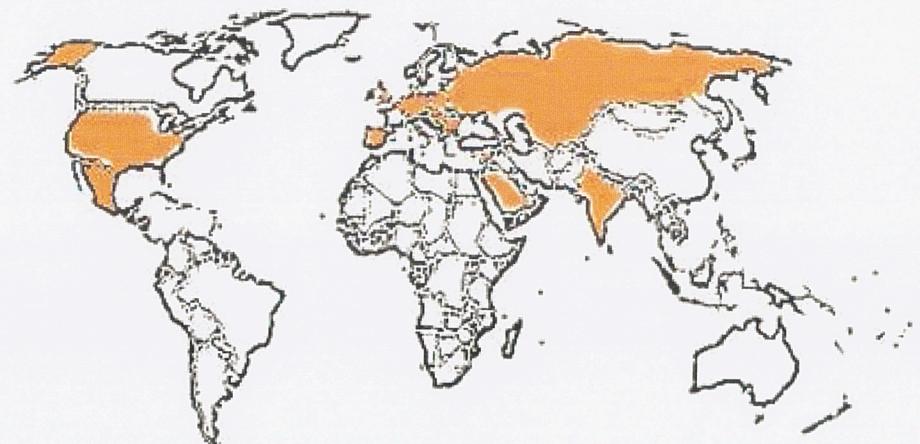
CLIENTS AND PARTNERS

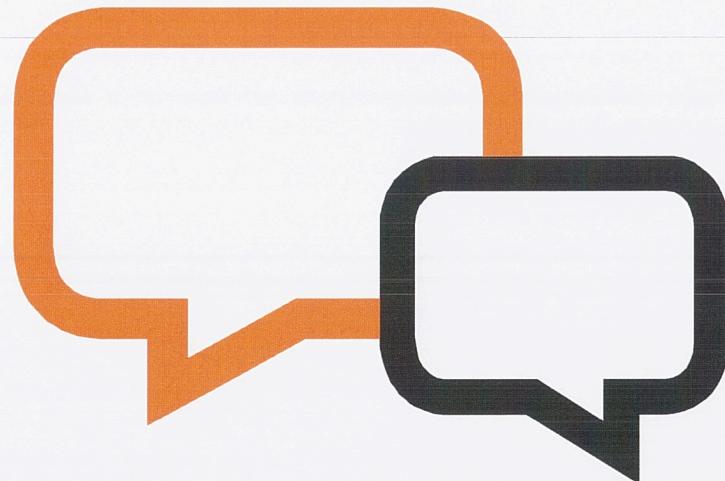
Customers and partners:

- Security and defense agencies
- Call centers
- IT integrators
- HW suppliers
- TV and radio stations (audio archive indexing)
- Universities
- Customers on several continents:
USA, Russia, UK, Germany,
France, Czech Republic, Poland,
Slovakia, India,
Spain, Israel,
Mexico, ...



Ministerstvo obrany
České republiky



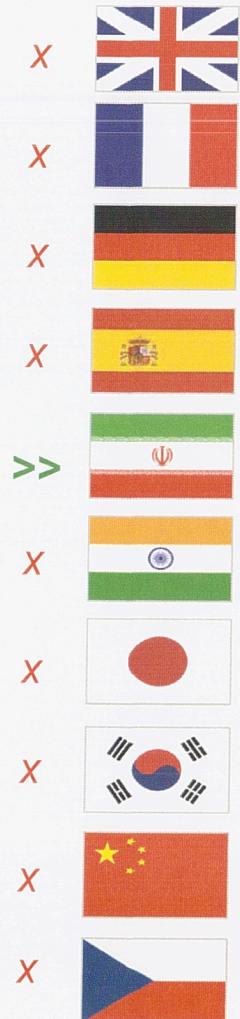


Phone*x*ia

TECHNOLOGY VIEW

LANGUAGE RECOGNITION

- Crime is caused by some minorities very often
- Call record forwarding based on lang./dialect (to operator / other technologies / archive ...)
- Language validation / Analysis of the audio archive



Technology:

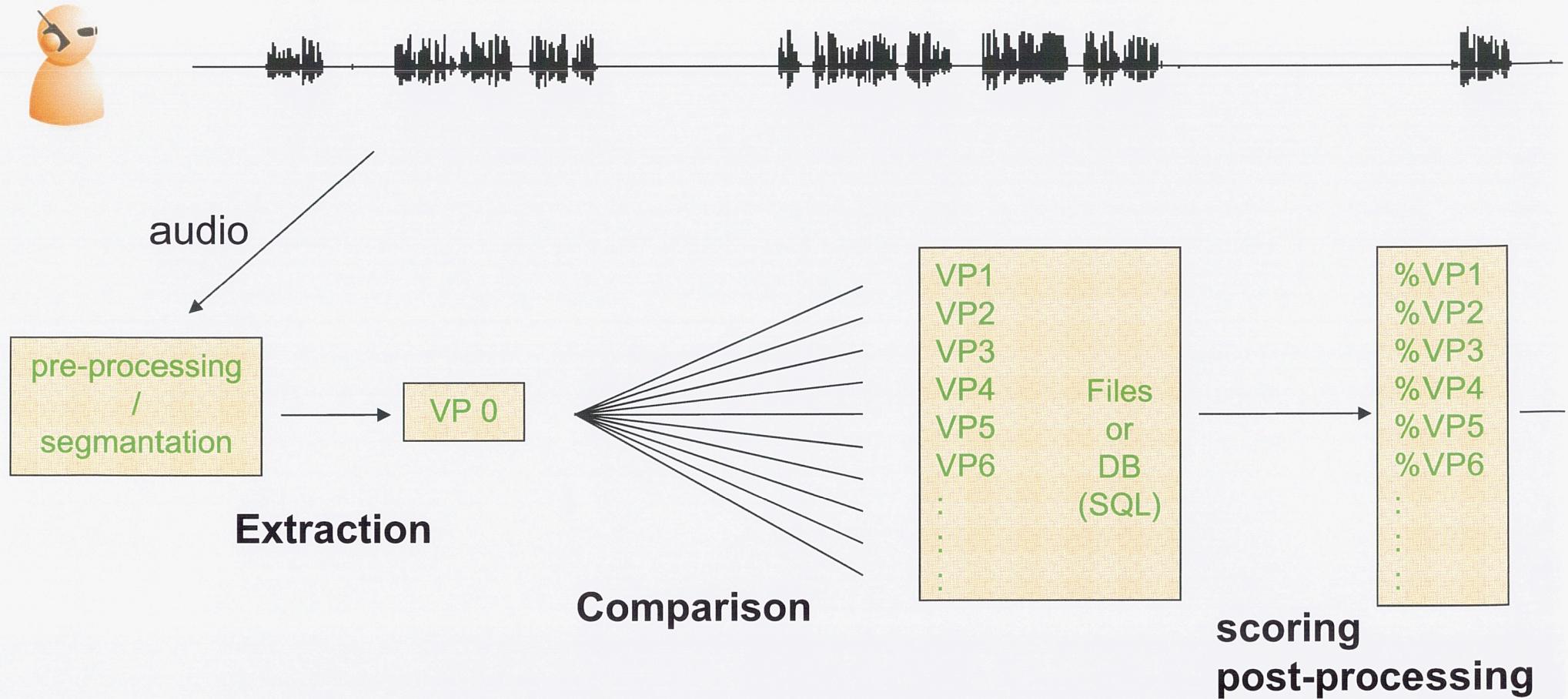
- 50+ languages & customer can add new (20h)
- User based calibration
- iVector based technology, discriminative training, acoustic channel independent

SPEAKER RECOGNITION

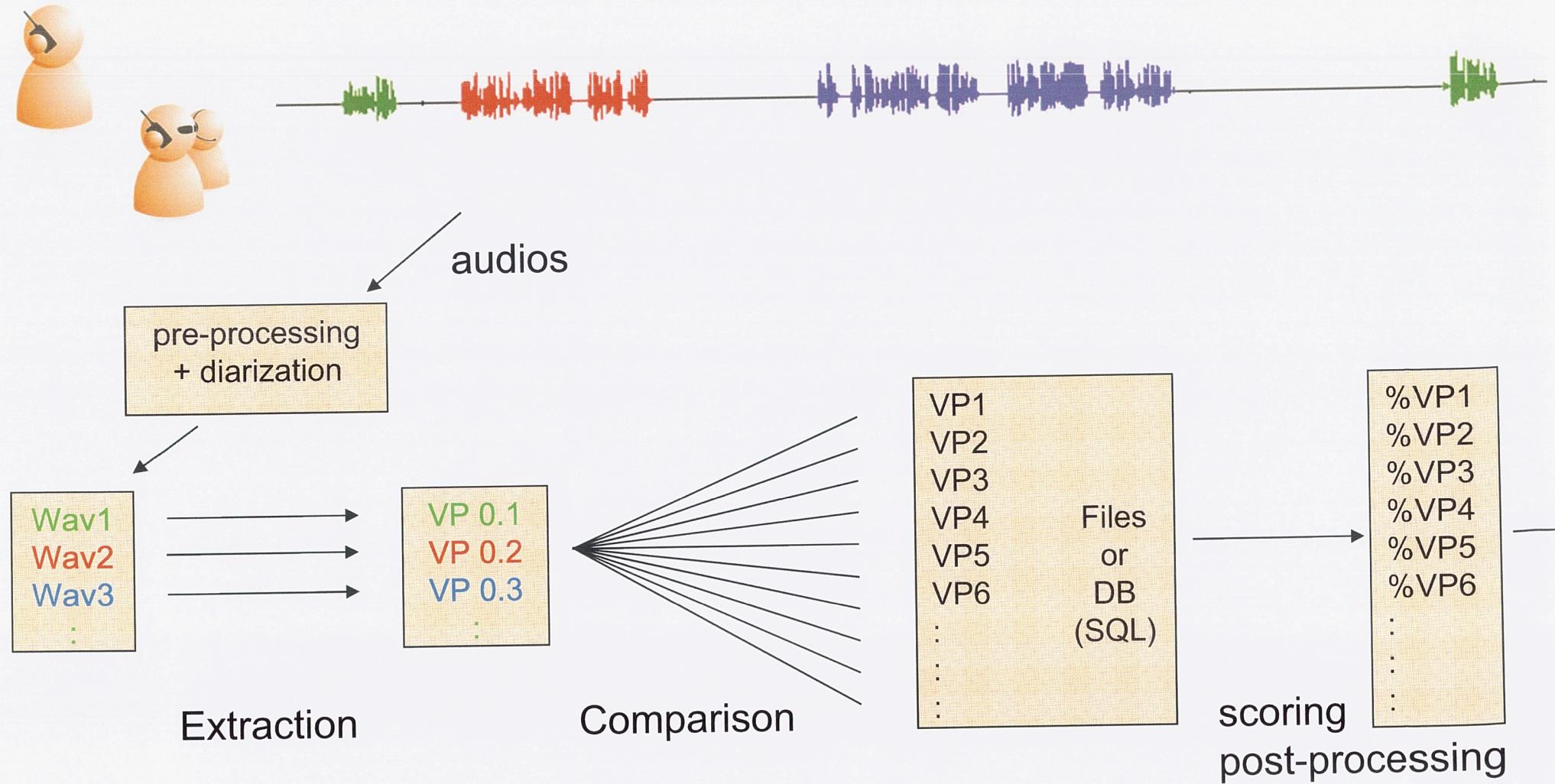
- Speaker verification / search / spotting / clustering, link/pattern analysis
- Acoustic channel and language independent technology, noise and channel distortion robust technology
- Based on iVectors algorithm
- Voiceprint extraction and comparison
- Compact voiceprint representation (<1kB)
- Millions of comparisons in fraction of seconds
- Diarization (speaker segmentation)
- User based system training, user based calibration



HOW DOES IT WORK?



SEVERAL SPEAKERS



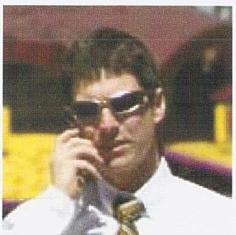
EXAMPLE



Audio record 15 sec
DB of 50.000 voice prints of the suspects

- time to extract one voice-print : 0.25 sec
- time to compare the voice-prints : 0.0625 sec

TOTAL time:

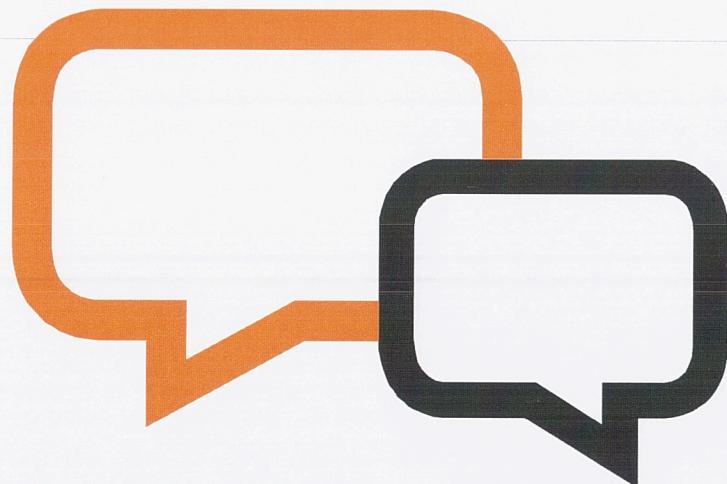


0.3125 sec



phone^x.io

WHAT FOR?



PhoneeXia

INTEGRATION

INTEGRATION - CMDLINE

- The command line version (Win or Linux for 32/64 bits, ...).
- Good for automatic processing.
- Using skripting languages
(bat/shell script, Perl, Python ...)
- Possible inputs: one audio file / list of the files / folder

```
vpextract -c settings\extract.bs -v -d example -e wav -h example\vprints
```

```
vpcompare -c settings\compare.bs -l -o score.txt list1.txt list2.txt
```

INTEGRATION - PSIP

Phonexia Speech Intelligence Platform (PSIP)

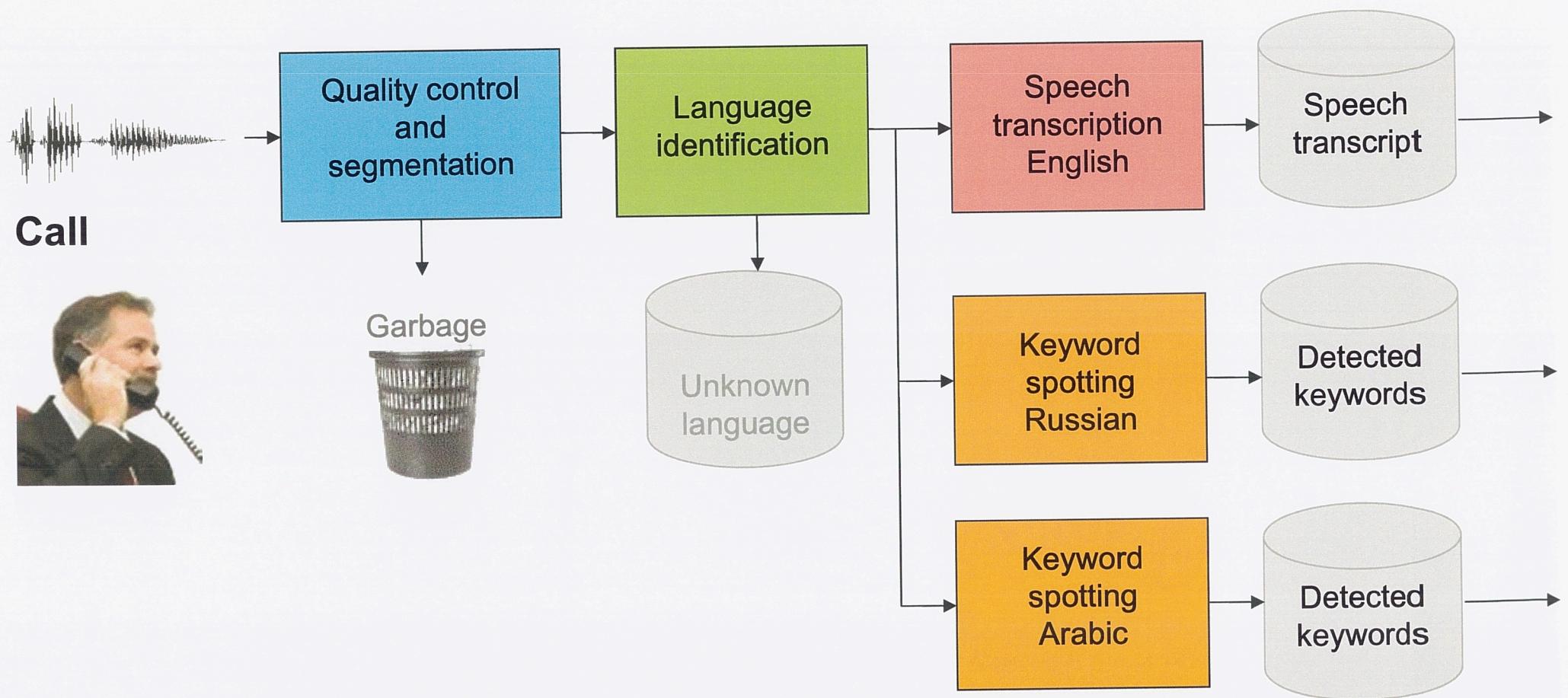
Configuration example

```
<speaker_id>  
  <name>sid</name>  
  <tag>sid</tag>  
  <input>list</input>  
  <list1>list1.txt</list1>  
  <list2>list2.txt</list2>  
  <scoring>score.sco</scoring>  
</speaker_id>
```

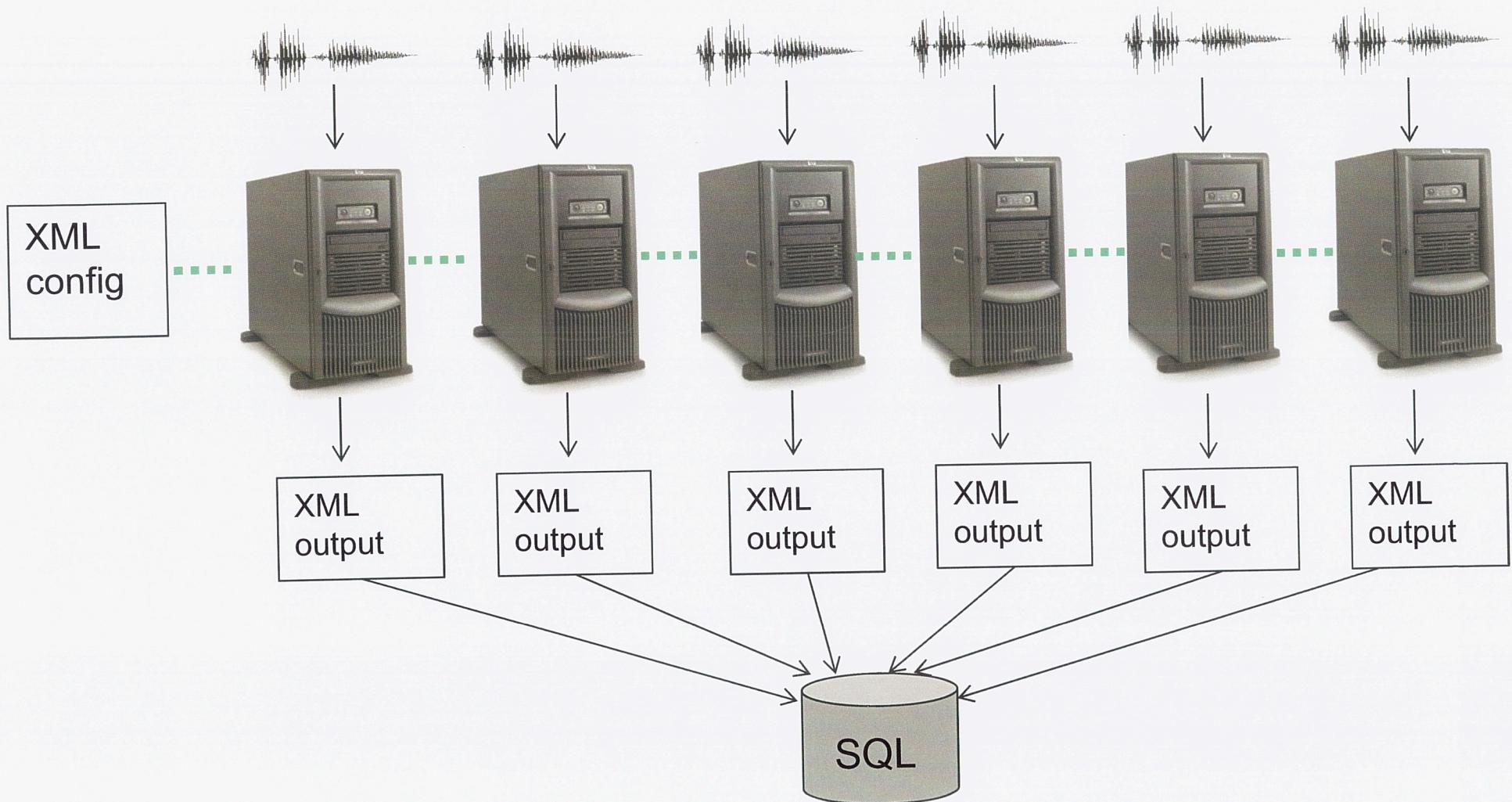
Output example

```
<sid>  
  <name>sid</name>  
  <type>speaker_id</type>  
  <speech_length>3.840</speech_length>  
  <best_speaker>John</best_speaker>  
  <best_score>94.021</best_score>  
</sid>
```

VALUE OF COMBINATION



SPEECH INTELLIGENCE PLATFORM



INTEGRATION - API

SDK - API (C++, Java, C#), documentation, examples
instruction for other platforms (.Net, Delphi, ...)

```
#include "bsapi.h"

SLIDI *plid = static_cast<SLIDI *>(BSAPICreateInstance(SIID_LID)) ;
plid->Init("default.cfg") ;
plid->SetModelDirectory("languages") ; plid->ActivateAllModels() ;

plid->TestFile("file.wav") ;
int num; char **pplanguages = plid->GetModelNames(&num) ;
float *pscores = plid->GetModelScores() ;

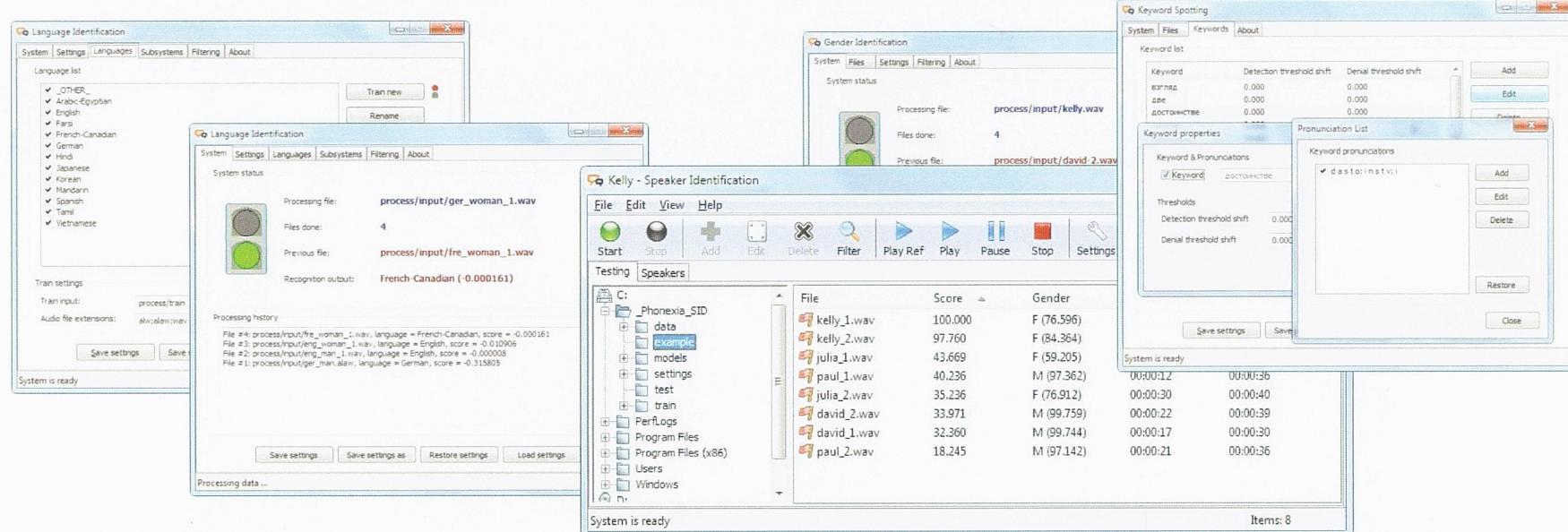
plid->Release();
```

Documentation:
Phonexia.com/download

FOR EVALUATION

www.phonexia.com/download

- SW for Windows/Linux in GUI / cmd-line version.
- The free license file is send to the specified email.



HOW CAN WE HELP?

**Phonexia is
a technology company**

We can offer:

- Consultations
- Speech technologies and solutions
- Custom development.
- Research

The screenshot shows a website for Phonexia. On the left is a sidebar with links: Company, Technologies, Products & Services, Download, Speech@IT, References, People, and Contacts. Below this is a login form with fields for User and Password and a Login button. The main content area has a header "Download Phonexia Demo Applications". It lists four demo applications with descriptions and screenshots:

- Phonexia Language Identification from Spoken Speech Demo**: Describes how it helps distinguish languages spoken over the phone.
- Phonexia Speaker Identification System Demo**: Describes how it searches for speakers in speech records.
- Phonexia Acoustic Keyword Spotting Demo**: Describes how it helps find specific keywords in speech records.
- Phonexia Gender Identification Demo**: Describes how it distinguishes gender in speech calls.

**Get the most
from speech records**

Q & A



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Try it!

www.phonexia.com/download

[www.superlectures.com \(BUT\)](http://www.superlectures.com)