



MELANIE

Intelligence Environment

Speech Detection
Language Identification
Speaker Identification

MELANIE - Intelligence Environment

Why Speech Classification?

The increasing quantity of speech signals needs an effective and high quality means for the analysis of audio data.

Obtaining support from an automated software tool is highly appreciated by operators working with the analysis of speech files.

MELANIE can help support the operator with:

- Automated analysis of incoming speech signals
- A means for analysis of incoming speech signals using the results of the MELANIE classifiers.



What Can Be Analysed?

MELANIE provides a software library for the classification of incoming speech signals referring to

- **Speech Detection:**

The parts of audio signals containing speech are marked. For storing the incoming signals, only those parts containing speech may be stored.



- **Language Identification:**

All incoming audio signals are classified according to the speech prevailing in the audio files. All languages of the world can be identified as soon as training material is available.



- Speaker Identification:

Speakers in incoming audio signals can be identified. The algorithm is independent of the spoken language, thus a speaker can be found also when communicating in another language.

Training material for the speaker to be analysed is necessary, a rejection of unknown speakers is made.



Product Description

For these classifiers, training, testing, and automatic production can be performed. For each application, libraries of software functions are available, together with a standardized and open interface (CORBA).

- Training environment: Classifiers can be trained optimally for the domain of the user. In a simple script-based training, the user can build the classifiers according to his domain and data material.
- ELAMAN offers trained models for some applications, the user does not have to train the classifier's parameters.
- Production environment: This environment automatically classifies all incoming audio signals using the available classifiers. A simple standardized interface is given for the automatic production 24/24h. The production environment is available as PC license or as site license.

The classifiers can be used via the CORBA interface. They can be integrated into PC-based OEM applications.

Classifiers are available for the following applications:

<i>SQ Speech</i>	Detection and Language Identification
<i>MP Language</i>	Identification
<i>GMM Speaker</i>	Identification

Technical Data

Input format Real signal comprising

- Sample Rate: 8, 16 kHz
- Data Type: PCM, A-law, μ -law

Also available as options, routines for processing other data formats.

Output	<p>The classification result can be accessed from the output interface. The output is provided as:</p> <ul style="list-style-type: none"> • Classification results in equidistant configurable time segments, e.g. for generating a label track (maximum score, individual score for all classes) • Classification results for the entire signal up to the signal end (maximum score, individual score for all classes)
Interfaces	<p>Standard interface CORBA enables the access to all results of MELANIE.</p>
Performance	<p>The classifiers show reliable classification accuracy combined with a high processing speed. Realtime factor: Depending on the type of classifier and the amount of classes (such as languages, speakers), ranging from 1/7 to 1/20 with e.g.:</p> <ul style="list-style-type: none"> • Hardware: P4; 3 GHz; 1GB RAM • Different Classes: 10

Company Principles and Policy

Technology

... in development and company management is state-of-the-art, and represents only the best.

Quality

... in all areas of our company is regarded as the almost requirement for risk-free and successful cooperation with our customers, and business partners.

Market Position

... we are the specialists in the field of signal and data processing as well as pattern recognition, and we are glad to face competition.

Colleagues

... form the roots of our company, and give the performance required for maintaining and building the technical base, and close personal cooperation we have with our clientele.

Growth

... we strive toward a healthy, stable foundation at home and abroad.

Services

... are comprehensive and complete. As a full-system company we offer standard equipment, systems, and services.

Trust

... in the relationships to our business partners, and within our own company forms the basis of our business.



If you would like further Information about ELAMAN,
or would like to discuss a specific requirement or project, please contact us at:

Elaman GmbH
German Security Solutions
Seitzstr. 23
80538 Munich
Germany

Tel: +49-89-24 20 91 80
Fax: +49-89-24 20 91 81
info@elaman.de
www.elaman.de