

Implementation of the Auditory Profile on OMA

Oldenburg Measurement Applications

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HörTech gGmbH, Oldenburg

Workshop Hearing Screening and Technology, Brussels 28 January 2009



What is OMA?

OMA & HearCom

Auditory Profile Tests on OMA

CE-certified versions of OMA

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What is OMA?

Software system for audiological assessment

Software development started in 1990

Audiometer development

1995: first version for Microsoft® Windows®

- standard interfaces
- standard soundcards

1998: first research version available



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OMA today

More than 30 measurement modules

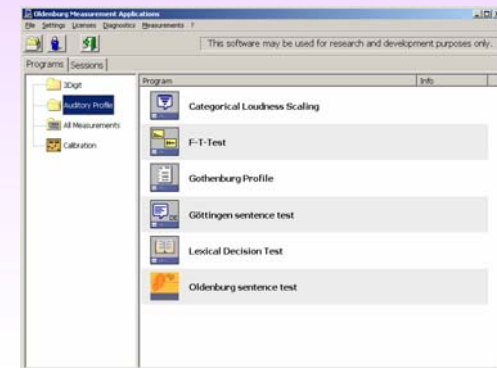
Multi-language support

Shared database, hardware, 'look-and-feel'

Modular system

Highly flexible

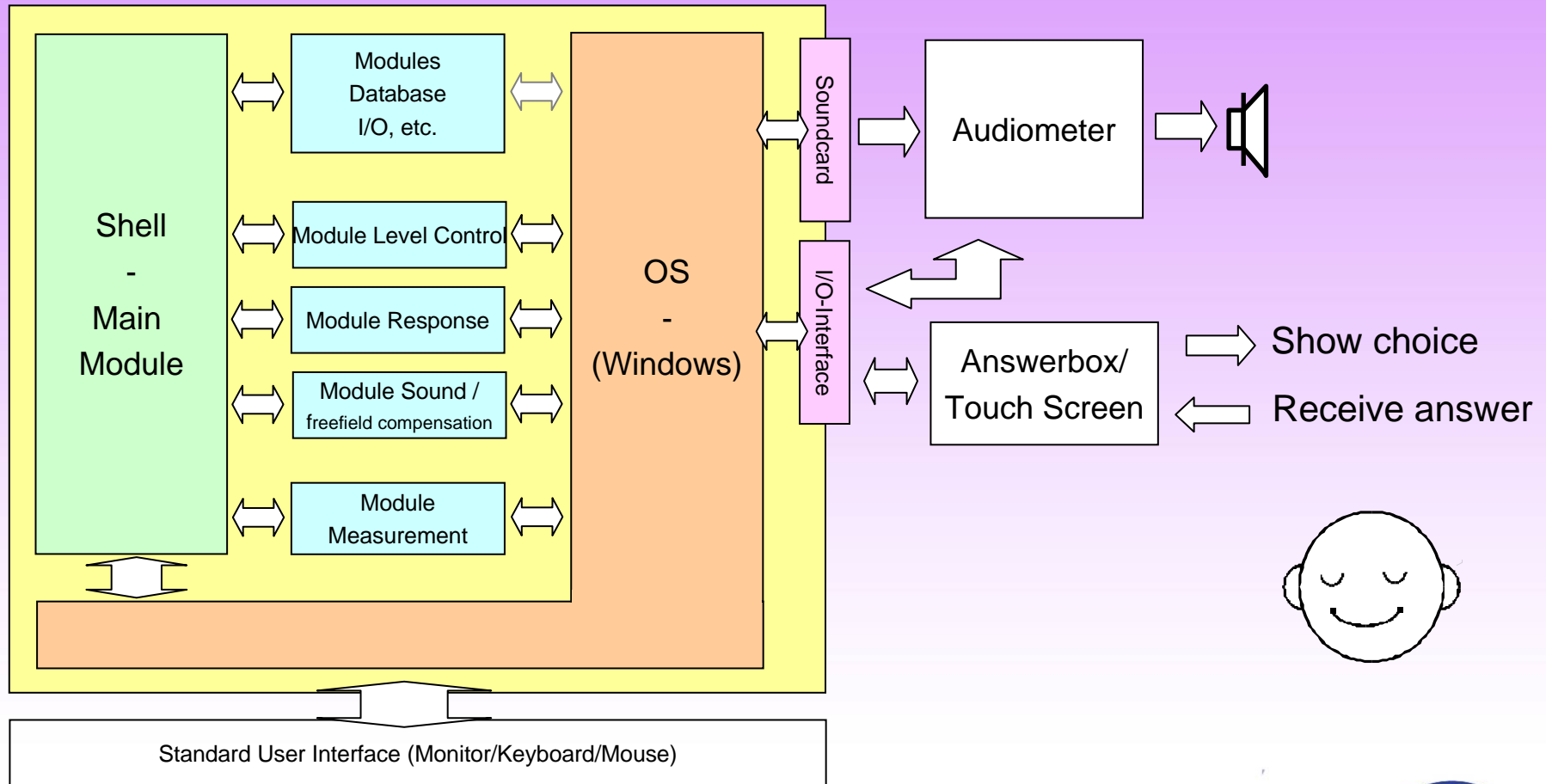
- scripting interface
- plugin interface
- measurement tool classes



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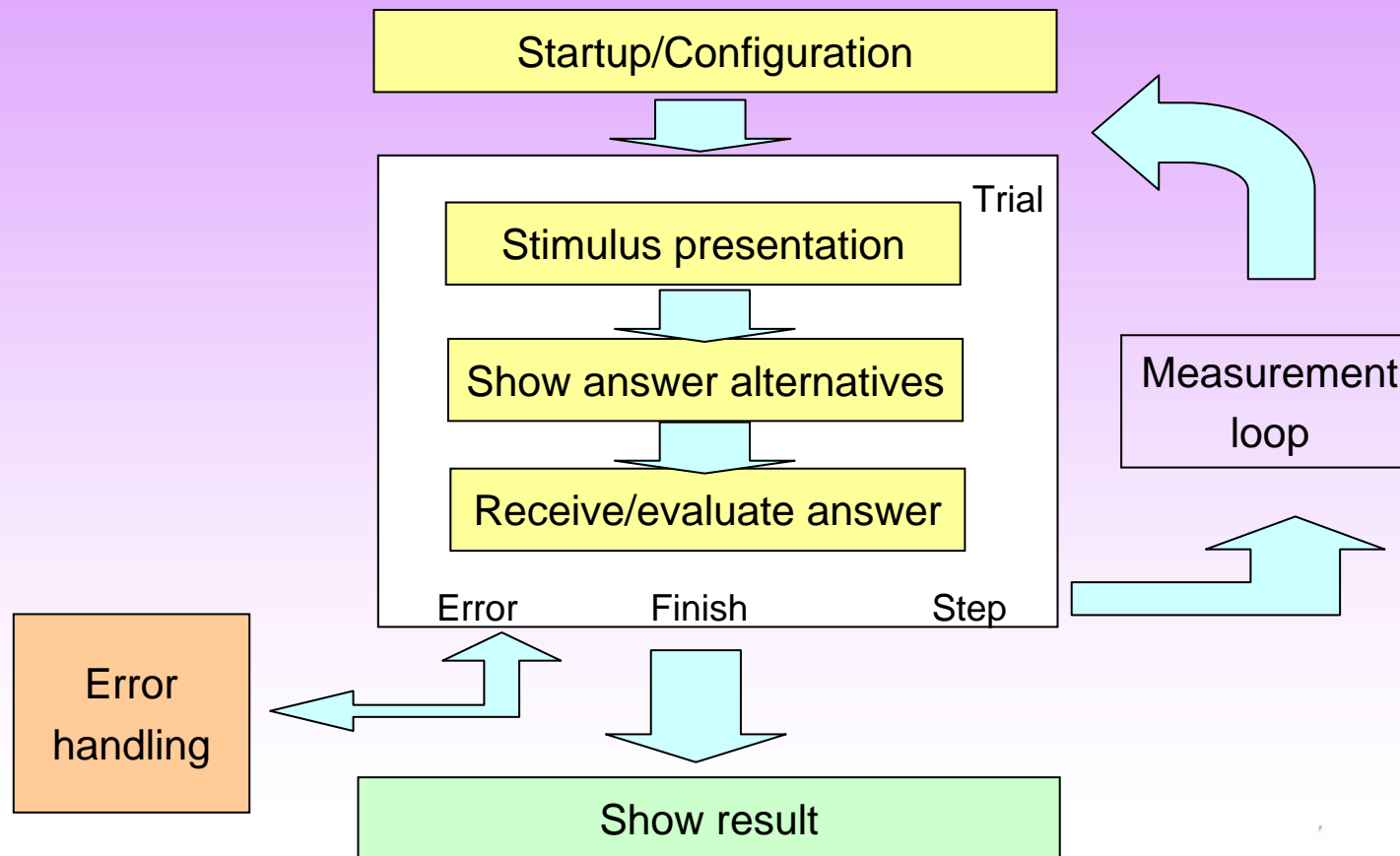
The OMA Platform



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Measurement procedure



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OMA & HearCom

OMA introduced by HörTech as preexisting know-how

Extension of multi-language support

Extension of demo version support

Evaluation and prototyping

Implementation of screening and diagnostic tests



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Auditory Profile Tests

ACALAOS (DE, NL, UK, SE, ...)

Meaningful sentence tests (DE, NL, UK, SE, PL, F)

Matrix sentence tests (DE, NL, UK, SE, F including ILD/BILD with virtual acoustics)

F-T-Test (all languages)

Lexical decision test (DE, NL, UK, SE)

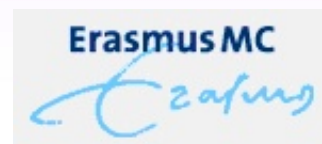
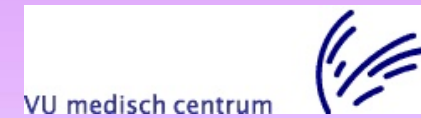
Gothenburg profile (DE, NL, UK, SE)



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Partners



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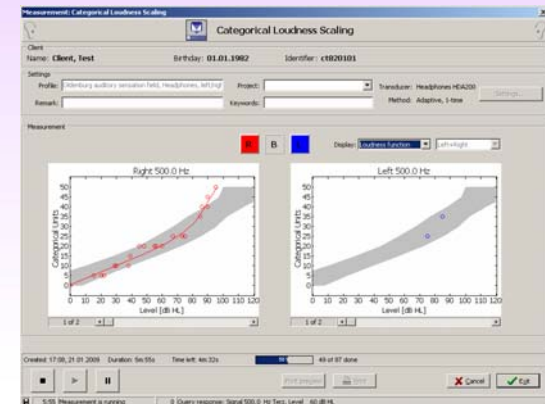
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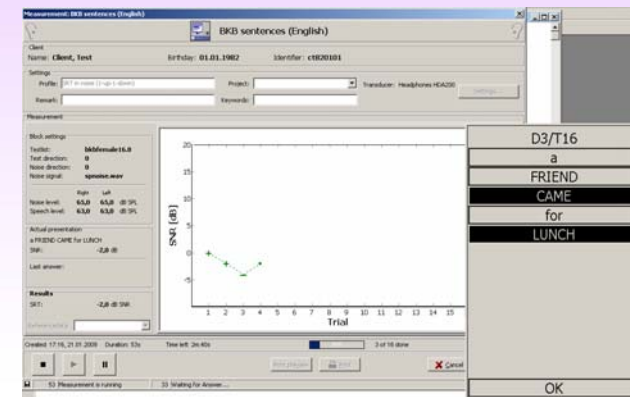
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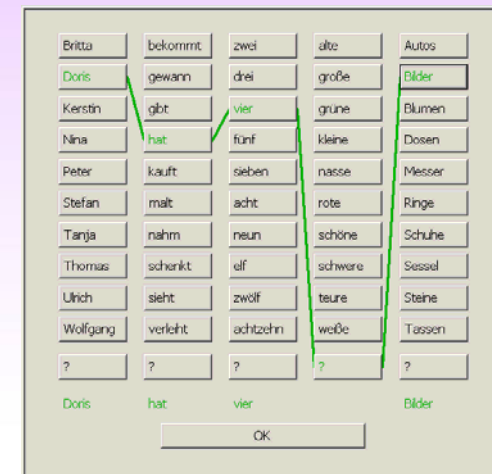
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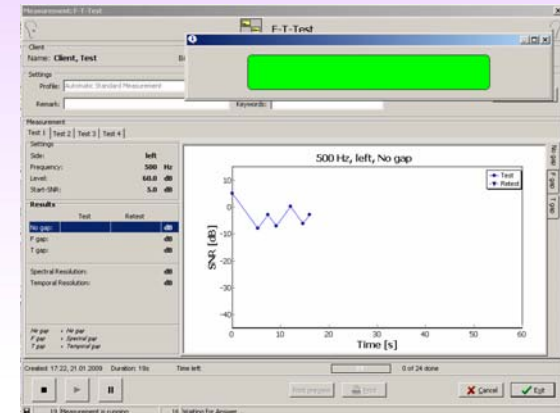
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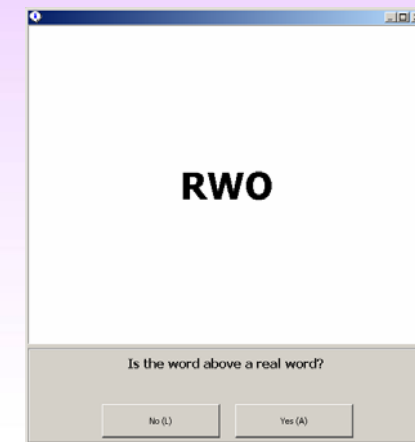
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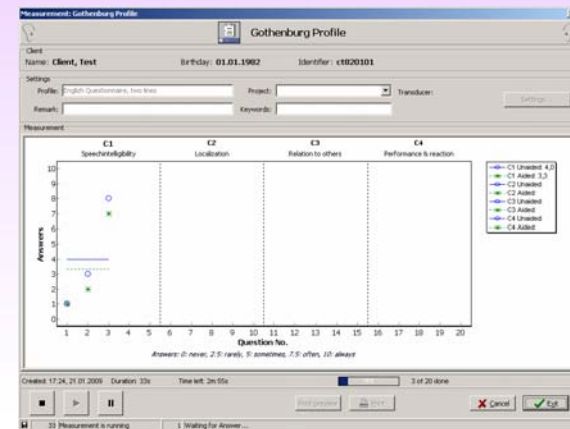
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Auditory Profile Tests

HearCom portal professional section

- demo version of OMA platform (R&D)
- demo versions of all AP tests for OMA

➔ available from HörTech in July



CE certified OMA

Available for Auritec AT900 and Auritec earbox

March 2009: available for Siemens Unity2

March 2009: available for Gravenstein
Interacoustics AC33

Cooperation agreement with GN Otometrics

Cooperation agreement with Maico



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CE certified OMA

ACALOS

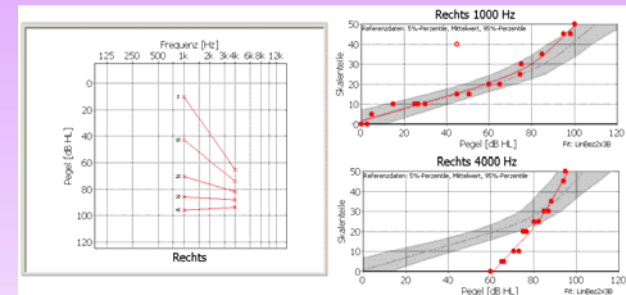
Oldenburg sentence test

Oldenburg children sentence test

Oldenburg children rhyme test

Göttingen sentence test

Freiburg speech test



Britta	bekommt	zwei	alte	Autos
Doris	gewann	drei	große	Bilder
Kerstin	gibt	vier	grüne	Blumen
Nina	hat	fünf	kleine	Dosen
Peter	kauft	sieben	nasse	Messer
Stefan	malt	acht	rote	Ringe
Tanja	nahm	neun	schöne	Schuhe
Thomas	schenkt	elf	schwere	Sessel
Ulrich	sieht	zwölf	teure	Steine
Wolfgang	verleiht	achtzehn	weiße	Tassen

Ok

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OMA R&D Roadmap

support for more audiometers/headphones



implementation of models/predictions

implementation of online directional filtering
(crosstalk cancellation)



multi-channel audio support

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Roadmap CE OMA

➤ Implementation of Auditory Profile Tests

The screenshot displays several windows from the CE OMA software:

- Parameter für die Messung:** A window for setting measurement parameters, including 'Ausgabe des Sprachsignals' (Left, Binaural, Right) and 'Ausgabe des Störsignals' (Left, Binaural, Right).
- Word Selection Window:** A grid of words for selection, including 'Agnès', 'achte', 'deux', 'anneaux', 'blancs', 'Charlotte', 'attrape', 'trois', 'balcons', 'bleus', 'Ernie', 'demande', 'cinq', 'classieurs', 'bruns', 'Ebenne', 'déplace', 'six', 'crayons', 'gris', 'Eugène', 'dessine', 'sept', 'jetons', 'jaunes', 'Félix', 'propose', 'huit', 'lignes', 'mauves', 'Jean-Luc', 'ramasse', 'neuf', 'piens', 'noirs', 'Julien', 'ramène', 'onze', 'piquets', 'roses', 'Michel', 'reprend', 'douze', 'rubans', 'rouges', 'Sophie', 'voudrait', 'quinze', 'velos', 'verts', and 'Ernie', 'dessine', 'six', 'jetons' at the bottom.
- Störparameter-Einstellungen:** A window for noise parameter settings, showing a table of noise types, frequencies, and levels.
- Hörübung Profil:** A window for hearing profile measurement, displaying a graph of hearing level (dB) vs. frequency (Hz) and a table of results.
- Question Window:** A window displaying a question: 'How often does it occur that you cannot hear conversation when speaking to one person at home?' with a progress bar at the bottom.
- Word Window:** A window displaying the word 'CAR' and the question 'Is the word above a real word?' with 'Ja (J)' and 'Nein (N)' buttons.

Seite	Frequenz	Pegel	SNR	Max. Pegel
links	500 Hz	60 dB	5 dB	100 dB
links	3000 Hz	60 dB	5 dB	100 dB
rechts	500 Hz	60 dB	5 dB	100 dB
rechts	3000 Hz	60 dB	5 dB	100 dB

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