A§E®

Psychoacoustic Test Suite

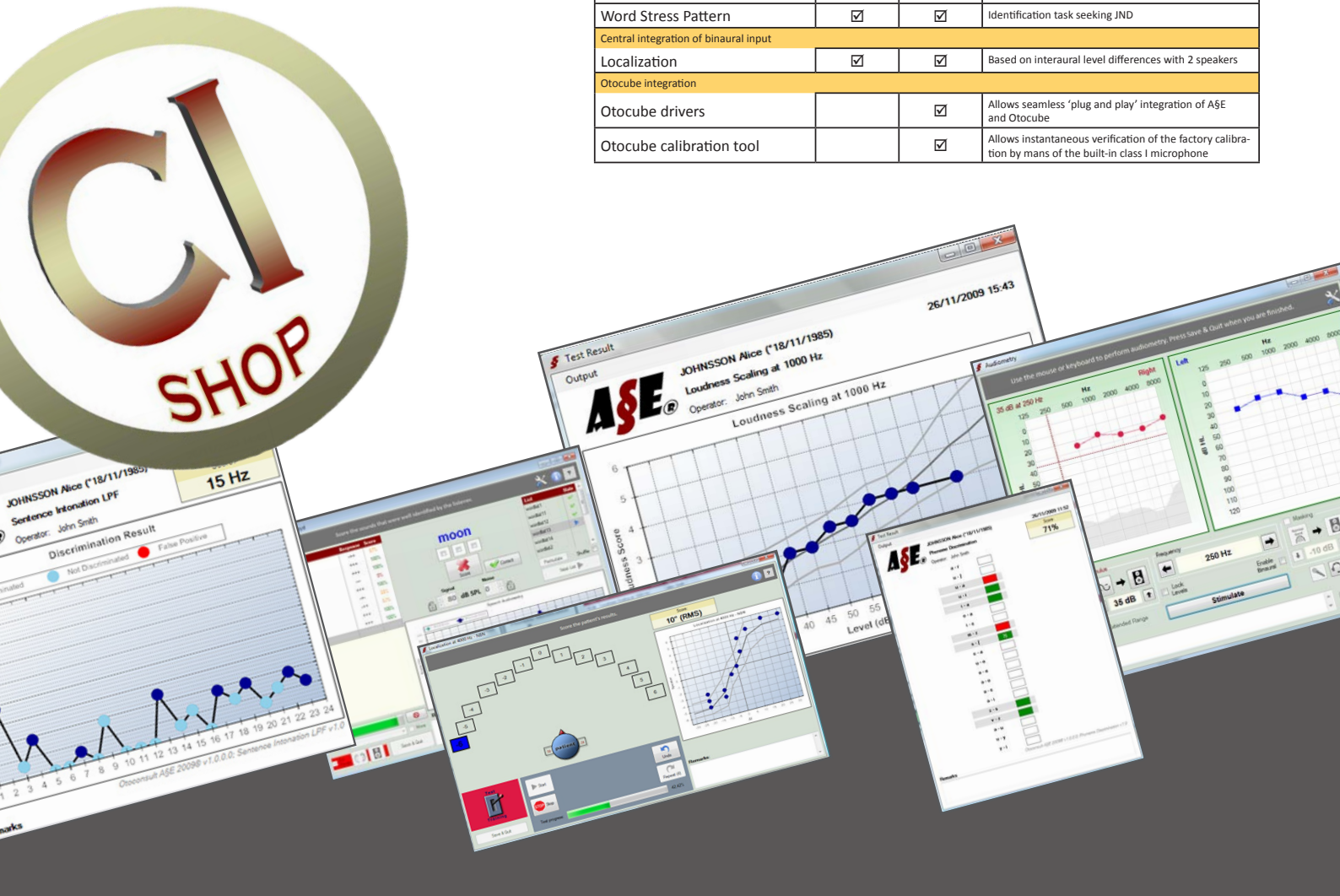
because the cochlea is more than audiometry alone...

OtoCube
www.otocube.com

A§E Diamond

A§E *(pronounced* /eɪs/ *like the play card ace)* is a comprehensive set of psychoacoustical tests to be used by the professional audiologist. It is conceived to test hearing impaired children and adults who are typically aided with a conventional hearing aid, cochlear implant or other device.
Most tests are speech- and language independent and supraliminal (above-threshold). No additional equipment is required. A§E works with your conventional audiometer (calibrated for free field), but can also be used with a separate amplifier and loudspeakers or even with nothing else than a set of high quality multimedia loudspeakers.
The diamond version is made for seamless integration with Otocube. It contains Otocube drivers, a calibration and monitor tool and a module for pure tone audiometry.

Feature	A§E 2012	A§E 2012 Diamond	
Clinical audiology			
Pure Tone Audiometry		☑	
Speech Audiometry	☑	☑	Module to upload your own speech lists. Can be prepared by us.
Intensity coding			
Loudness Scaling	☑	☑	Scoring on a 6-level visual-analog scale
Spectral coding			
Phoneme Detection	☑	☑	
Phoneme Discrimination	☑	☑	Oddity paradigm
Phoneme Identification	☑	☑	Closed set picture pointing
Temporal coding			
Harmonic Intonation	☑	☑	Same/Different discrimination task seeking JND
Disharmonic Intonation	☑	☑	Same/Different discrimination task seeking JND
Harmonic Complexes	☑	☑	Same/Different discrimination task seeking JND
Sentence Intonation	☑	☑	Same/Different discrimination task seeking JND
Word Stress Pattern	☑	☑	Identification task seeking JND
Central integration of binaural input			
Localization	☑	☑	Based on interaural level differences with 2 speakers
Otocube integration			
Otocube drivers		☑	Allows seamless 'plug and play' integration of A§E and Otocube
Otocube calibration tool		☑	Allows instantaneous verification of the factory calibration by mans of the built-in class I microphone



Speech audiometry

This module turns speech audiometry into fun! Just have your speech lists presented at the level of your choice, see the words appear on your screen, score either per phoneme or per word and let A§E calculate and plot the scores. You are no longer constrained to the timings of a CD with pre recorded speech. Save time and increase accuracy. Your speech lists are uploaded once and then readily available at any time.
We can provide you with pre-loaded lists for many languages, like : Arabic, Dutch or Flemish, English, French, German, Hebrew, Indian (Hindi, Malayalam, Marathi, Tamil), Italian, Portuguese and any other list on your demand.

Pure Tone Audiometry

This module contains all typical features to perform tone audiometry. It takes over control of the output device, which can be Otocube, or digital audiometers like Aurical(GN Otometrics) and Equinox/Affinity (Interacoustics). With Otocube, sounds(pure tones, pulsed tones, warble tones, narrow band noises, etc) are presented in Free Field condition from 15 to 100 dBHL.

Intensity coding

The loudness scaling module assesses the loudness growth function of the (aided) cochlea. The test stimuli are narrow band noises centered at 250, 1000 and 4000 Hz presented at different levels. The results provide useful feedback for the programming of the hearing device (hearing aid or cochlear implant).

Central integration of binaural hearing

The localization test is a binaural localization test for which only 2 loudspeakers are required. It is based on interaural level differences (ILD's) roving around presentation levels of 70 dB SPL. The localization test assesses the localization capacity of the listener, giving an indirect view on the central integration of the binaural signal.

Spectral coding

This comprises tests at the level of detection, discrimination and identification. Phonemes are used that are common in many languages. All phonemes have equal duration and loudness. For the discrimination and identification tests intensity roving is applied in a range of ±3 dB, meaning that a random gain ranging from -3 dB to +3 dB is applied to a given phoneme when it is presented. This eliminates any possibly remaining intensity cues.

Temporal coding

These tests aim to assess low frequency pitch perception with special interest for the temporal fine structure. They contain low frequency intonation cues, basically a shift of the fundamental frequency ΔF0, either alone or together with the harmonics 2F0, 3F0 and 4F0. The reference F0 = 200 Hz for all tests. The presentation level is 70 dB SPL with roving of ±3 dB.

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