

director, is the multi-sensorial center with its virtual reality environments. The biggest challenge, according to Braun, was to find content which offered more than mindless violence. “An intense sensory experience does not dictate that higher-level intellectual functions be switched off,” says Braun. “What we want for the Cancun Convention Center, in contrast to current VR amusement, is content which is both exciting and meaningful.”

Meaningful content is exactly what the AquaThought Foundation has brought to the

facility. “Dolphin contact is one of the most intense experiences one can have. To swim with these intelligent beings is pure joy,” says David Cole, Chairman of the AquaThought Foundation. AquaThought has demonstrated, through electroencephalographic studies, that close interaction with dolphins significantly changes the neurological state of the participant. In a field of alternative medicine – only now being taken seriously by the medical community – dolphin interaction therapy has been used for over twenty years to treat severe depression, cancer, Downs Syndrome, autism,

and other disorders. The new relationship with the Cancun Convention Center accomplishes one of AquaThought’s long-term goals: to develop technology that allows unlimited numbers of participants to have the intense and potentially healing experience of swimming with a dolphin, without adversely affecting any dolphins.

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Emergent Technologies from Dolphin-Human Interaction



• Background

Foundation History, Human-Dolphin Interaction Research



• CyberFin

Virtual Reality Dolphin Encounter



• MindSet

Enabling Neuroscience Research

MindSet: Neurological Man/Machine Interfacing, An Emergent Technology From Human-Dolphin Interaction Research

The AquaThought Foundation’s research in neurological imaging has led to the development of MindSet, a low-cost neuro-mapping electroencephalograph that makes advanced EEG research accessible. Designed for research and clinical use, MindSet incorporates the latest EEG signal analysis processes and a complete suite of standard neurological

protocols. It accommodates the novice user as well, with an easy-to-use interface and a hyperlinked neurological anatomy database.

Advanced features of the MindSet system include real-time 2D and 3D topographic visualization, neurometric analysis, routine EEG study, phase coherence analysis, compressed spectral array visualization, inter-electrode interpolation, a hyperlinked neurological anatomy database, MIDlbot™ feedback, neural network feature extraction, a light and sound machine interface, and a visual

programming interface for user-defined analysis (neurohacking). The MIDlbot™ tool allows MindSet users to generate MIDI commands from temporal, spectral, and spatial information within the EEG data.

As an educational resource, MindSet offers the user hyperlinked neurological anatomy information that can be accessed by clicking on a topographic montage. Potential applications for MindSet include clinical neurology, conventional and obscure brain/mind research, man/machine interface research, biofeedback, and discrete biological pattern recognition research.

The Exhibit

MindSet’s primary focus in the this exhibit is man/machine neural interfacing. Using the neural-event and gesture-recognition functions, in combination with the MIDlbot™ interface, users can control a MIDI synthesizer and laser light show. Users also learn

to recognize the appearance of various neurological events as they are visualized on the topographic display. EEG data are collected throughout the exhibit and compiled into a QuickTime/AVI movie entitled, “Minds on The Edge” or a before-and-after topographic still compilation entitled, “This is your brain... This is your brain on SIGGRAPH.” Also on display: several research projects that have been made possible by MindSet, including AquaThought’s own human-dolphin interaction research. Attendees can examine how neuroscience is converging with visual and musical art, consciousness research, and virtual reality.

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