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Theory and Practice of Tangible User Interfaces • South Hall 110 • Tuesday, October 16, 2007

Point & Ping

Description

Point 'n' Ping (PnP) is a system for auditorially drawing someone's attention to an object through gesture. When one user ("The Pointer") points at an object, the other user ("The Listener" or "The Bat") hears a ping that appears to originate from the object, but is actually being simulated by a pair of headphones.

The system includes:
- headphones
- positioning sensor system to determine distance and direction between a pair of users
- augmented glove with range finding and wireless communication

Potential Use Cases

PnP is applicable whenever verbal communication or physical contact are impossible, impractical, or socially inappropriate yet gesturing is stil possible.

Example applications include:
- SCUBA diving
- loud social gatherings (e.g. concerts, clubs)
- hunting
- military applications
- libraries

Why Tangibility?

Several primary modes of communication are unavailable underwater, especially when communicating at a distance or outside the line of sight. A foggy mask can obscure visual cues from the eyes, and keeping a breathing device in the mouth at all times prevents most audible and facial cues. With direct face-to-face contact eliminated, hands and gestures become vital in communication. By allowing hands to augment an audible component of communication, and by augmenting their functionality in direction gestures, we widen the breadth of messages available to underwater divers.

Future Work

- Research available software packages that spatialize sounds by vayring speaker output. Can simulated sound produce our desired experience? How accurately can humans perceive placement?
- How can we expand on the point gesture to add functionality? What is the best way to differentiate between different gestures?
- What are the constraints of an underwater context? Review current and past underwater communication technologies: the challenges existing devices face can help us make our idea more robust.