

'Ubice': Nokia builds a touchscreen made of ice (w/ Video)

November 23 2010, by Lin Edwards



(PhysOrg.com) -- Nokia researchers in Finland have created a massive touchscreen display from a wall made of blocks of ice, dubbed ubiquitous ice or "Ubice."

Scientists at the Nokia Research Center in Tampere in Finland projected images on a wall made of blocks of ice 25 cm thick and 50 cm square, and used near-infrared projectors and cameras to determine the position and movements of the hands of users, who saw what looked like flames or colored lights in the ice.

The aim of the project was to demonstrate "ubiquitous computing," the



principle of incorporating computers into everyday objects. In Finland, river ice is in plentiful supply in winter, and the researchers hired a local contractor at Oulu to collect a tonne of river ice, which was then chopped into square blocks using a chainsaw and ice sculpting tools. The blocks were then assembled to create a wall of ice two meters wide and 1.5 meters high. Water or snow was applied to the joints, and then a heat gun (like a paint stripping gun) was used to smooth the ice wall surface.

An array of near-infrared lights, near-infrared cameras, and a digital projector were positioned behind the ice wall and focused on the front surface. When a user places a hand on the front of the ice wall the invisible near-infrared light is reflected back to the cameras, which transmit the signals to a nearby computer. The computer then uses information from the signals to track the precise position, size and movements of the hand. The digital projector then projects an image of colored light or flames that appears to the user to be in the ice beneath the hand.

The system worked best with bare hands, but also worked with gloved hands. The cold ambient temperature (-15°C) kept the ice wall intact even in the face of the heat generated by the projector, and team member Antti Virolainen said it was much more interesting seeing what looked like flames inside ice than in a plastic screen.





Nokia scientist Jyri Huopaniemi said the team had been asked to explore novel interfaces, multimedia and software approaches, and while the experiment was "playful" it showed interactive computing interfaces could be built anywhere. The concept could be used in cold countries as interactive ice sculptures, by <u>ice</u> hotels such as that in Jukkasjärvi in Sweden, or for advertising.

The Ubice <u>touchscreen</u> was introduced last week in Saarbrucken, Germany at the Interactive Tabletops and Surfaces conference.

© 2010 PhysOrg.com

Citation: 'Ubice': Nokia builds a touchscreen made of ice (w/ Video) (2010, November 23) retrieved 28 April 2024 from https://phys.org/news/2010-11-ubice-nokia-touchscreen-ice-video.html

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.