Covert-Glass: A Wearable that Enables Surreptitious 911 Video Calling

Punyashlok Dash, Carman Neustaedter, Alissa N. Antle,
School of Interactive Arts & Technology, Simon Fraser University, Canada
{punyashlok_dash, carman, alissa_antle} @sfu.ca

Covert Glass uses vibration motors for haptic feedback. Two vibration motors are attached on each side of the glasses.

In the future, emergency calls to the number 911 in Canada will include the ability to make video calls. Yet it can be hard for callers to surreptitiously capture a scene involving criminals without others knowing about the 911 video call.

We introduce 'Covert-Glass', technology enhanced glasses that aid callers in conducting a surreptitious 911 video call. 911 call takers send remote signals to the user's glasses and these appear as haptic vibrations on either side of the glasses, shown as marked numbers in the figure to the left. The caller can then adjust the direction of their mobile phone's camera to capture the information desired by the 911 call taker.

A common scenario like an attempt at burglary, where an observer will call 911.

A user wears Covert-Glass and calls 911 using a video call. The phone is held close to the body so the criminal doesn't know about the call taking place.

The 911 call taker sends a vibration to the glasses, indicating that the user should move the phone to the right so the call taker can see the situation better.

Implementation and Rationale

Covert-Glass is composed of software that allows two users to communicate with each other using a custom-developed video-calling application. A call taker can send signals over the internet to any of the actuators that are attached to the glasses.

The signals are vibrations that have unique patterns and durations and let the caller know of the intended direction of phone movement.

Contributions

(1) We built a mechanism of guidance where users can feel different haptic feedback patterns when they wear Covert-Glass.

(2) We explore a design space where future 911 call operators can receive video calls and guide callers remotely to perform appropriate camera work.

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