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http://cubic.asu.edu

WIRELESS HAPTIC BELT
A Social Interaction Assistant Device

The Haptic Belt is a vibro-tactile presentation device worn around the waist that can be used as an alternate form of information communication (compared to the traditional forms that include vision and audio) through the use of touch. Haptics is a growing area of research in human machine interaction and communication.

Our project goal is to create a wireless "haptic belt" which will, through the use of multiple vibrating motors placed around the waist, assist the user in locating persons who are near or approaching them. The belt accomplishes this by vibrating motors with variable pulse rhythm and magnitudes. The ultimate goal of this project is to enable further research on the use of haptics technology and publish the findings.
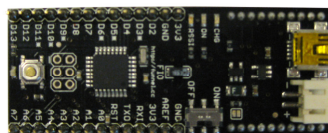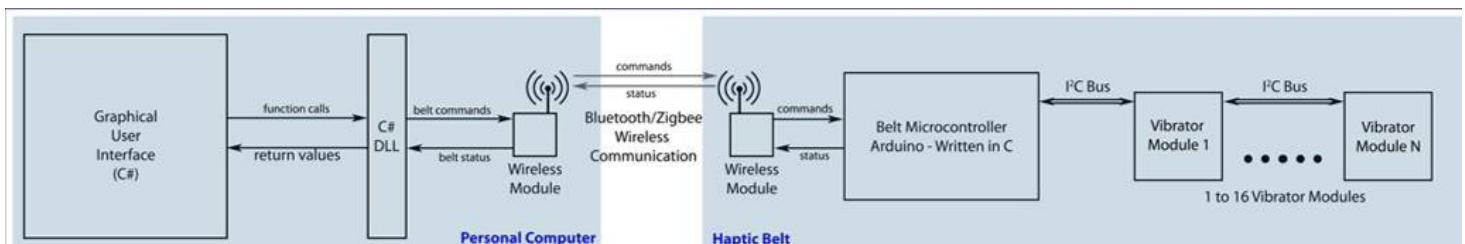
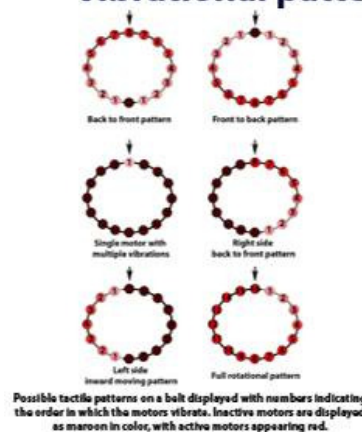

Arduino ATmega168 Microcontroller

ZigBee Wireless Protocol
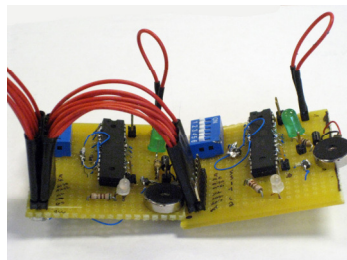
Prototype Vibrator Modules

Combination of the two – Vibrational patterns to convey information

Possible tactile patterns on a belt displayed with numbers indicating the order in which the motors vibrate. Inactive motors are displayed as maroon in color, with active motors appearing red.

Tactile patterns appearing on a belt

Possible to communicate fairly large amounts of data through touch

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