

Virginia Tech "Zach" Team Solution - Koala Phone



Image: Illustration of touchscreen smartphone, with line drawing of hand holding it

Koala Phone is a smartphone designed for secure grip and control using either right or left hand alone. A sensor embedded in the high-grip sides of the device detects which hand is being used and adjusts the thumb-swipe user interface accordingly. Location of the camera lens in the top center of the back facilitates ease of use regardless of which hand is used. An adjustable armband accessory allows the one-handed user to keep the device handy while performing other tasks.

The shape is thicker and heavier at the bottom to house the battery and fit the palm, as well as to provide a cue to proper orientation. The phone's interface is designed to establish a hierarchy of applications, so that primary applications can be accessed most quickly.

Persona Zach:

Zach is a 24 year old army veteran who suffered a head injury and lost the use of his right (dominant) arm due to an IED explosion two years ago. This injury also affected Zach's equilibrium and balance. A federal contractor has offered him a job that requires field work with mobile wireless technology for communication, as well as for tracking jobs, filing reports, etc.

The contractor's current employees use a wide variety of commercial smartphones for these tasks, but Zach's prospective employer (and Zach, too) wonder if he could handle any of these. They're also concerned that Zach's balance limitations might put him at risk while in the field. Learning to do things with his left hand only has been literally a juggling act for Zach, especially handheld devices like video game controllers, cell phones, and remote controls. He's dropped and broken more than a few already. The contractor is willing to make whatever reasonable accommodations are needed to help Zach do this job.

The challenges Zach faces aren't unique to those with limitations resulting from head injuries. Multitasking has become as typical in the workplace as it is at home, at play, and at school. This lifestyle can overload both the mind and the body, putting both at risk. Tasks that are simple with two hands can be difficult or dangerous when attempted by right-handers using only their left hand. Walking on an uneven surface while paying attention elsewhere can cause falls. With constant repetition, even low-risk tasks can cause long-term injuries, especially to backs, necks, and upper extremities. As wireless devices are used for more tasks and in more situations and environments, designing to avoid these risks becomes even more important.



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