Gesture Control Evolves in Consumer Tech

New opportunities abound as tech moves into a more touchless world.

Gesture control, sometimes called touchless applications, represents a new opportunity for the way we interact with consumer technology in and out of our homes. Gestures are used today in many applications including automotive, drones, robotics, personal computing and gaming.

The technology is applicable to numerous applications with mobile products, IoT devices, wearables, displays/kiosks, and touchscreens/panel stands. Industries such as health, education and transportation are exploring ways to incorporate gesture control technologies for inclusive design.

Keep it Simple

Usability is key for the growth of gesture control. Gesture control technology should strive to be intuitive and convenient. It should leverage analogies from the physical world and previously learned skills. It should be discoverable and have cross cultural understanding. The technology should strive to avoid unintended interactions and include mechanisms to confirm "success" of the gesture through visual, haptic, or auditory confirmation.

Additionally, it should be developed with the mindset towards inclusive design to ensure accessibility and to include appropriate fallback mechanisms and flexibility.

Promoting the Technology

To help enable the growth of this technology, CTA's Technology Council formed a Technical Project Group on
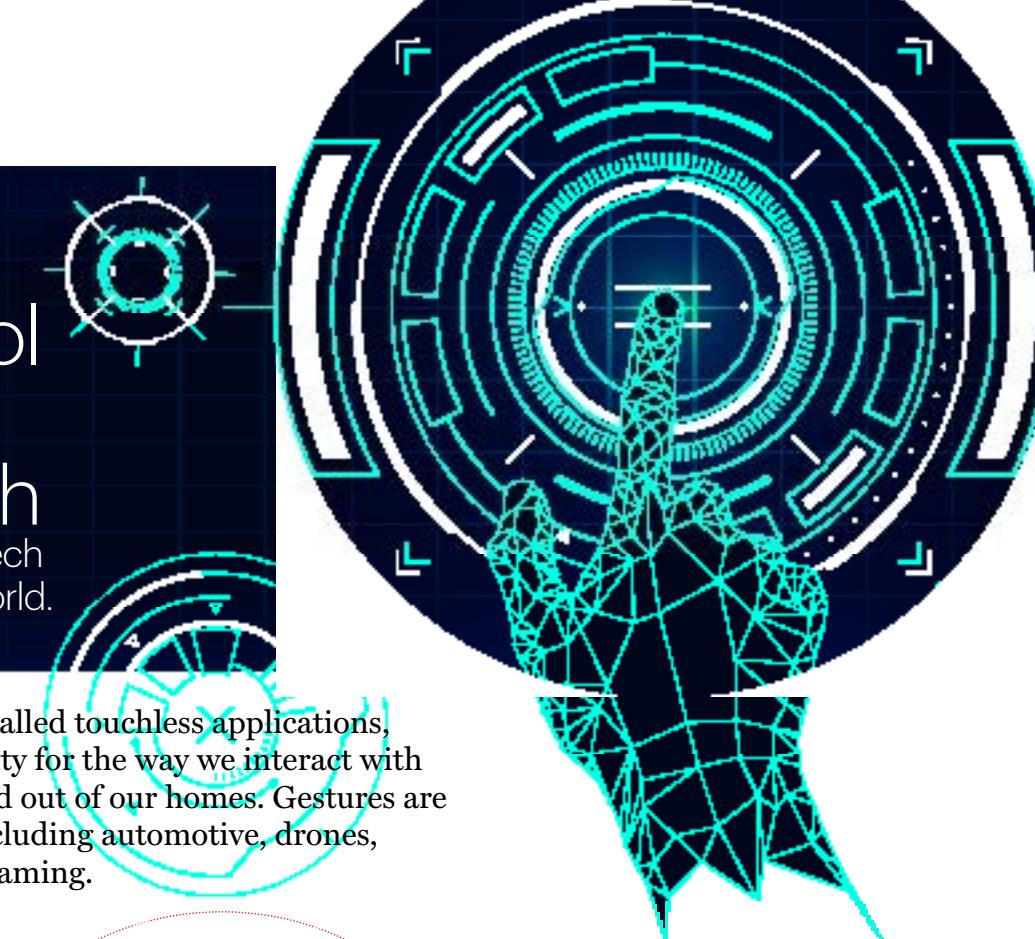
CTA's Technology Council formed a Technical Project Group on Gesture Control which is developing a handbook on the usability challenges of gesture technology.

Gesture Control which is developing a handbook on the usability challenges of gesture technology, such as cross-cultural gesture differences, disability, privacy and unintended interactions.

The handbook will cover touchless controls — gestures — by the hands and upper limbs of a user, suitable for use at specific ranges from a sensing device. However, sign language and gesture sets, such as those used for fingerspelling, are considered conversation interfaces and will not be in the scope of the work.

The handbook will strive to ensure that gesture control technology can be consistent through a variety of applications by using common concepts such as pinch, grab, fist, finger extension and rotation. These basic hand and arm positions are then combined with actions like waving, wafting, flicking and resting. These positions and actions will be assigned to a series of gesture control categories such as binary events, discrete steps, spatial actions and compound gestures that can correspond to actions across application domains.

One example of a binary event would be to confirm a selection or dialog. This can be accomplished with a click or tap like movement of the index figure. An example of a spatial action might be to increase or decrease something — such as "audio volume" — based on a continuous hand movement proportional to the amount of increase or decrease desired.

As we move into an ever more touchless world, gesture control technology represents exciting new opportunities for the way we interact. To learn more about this work or get involved, please contact standards@CTA.tech. ■