

**19.** A method for extracting multiple degrees of freedom of hand motion from successive proximity images representing successive scans of a plurality of proximity sensors of a multi-touch surface, the method comprising:

tracking, through successive proximity images, a plurality of groups of pixels associated with a plurality of fingers on or near the multi-touch surface;

computing a translation weighting for each finger;

computing a translational velocity for each finger;

computing a translational velocity average from the computed translational velocities and the computed translation weightings; and

transmitting the computed translational velocity average as a control signal to an electronic or electromechanical device.

**20.** The method of any one of claims **13-19** wherein transmitting the computed velocities further comprises filtering the computed velocities prior to transmission.

**21.** The method of claim **13-19** further comprising transmitting an orientation of an ellipse fitted to a thumb contact to an electronic or electromechanical device.

**22.** The method of claim **20** further comprising transmitting an orientation of an ellipse fitted to a thumb contact to an electronic or electromechanical device.

**23.** The method of any of claims **13-19** wherein at least one of the fingers is near but not on the multi-touch surface.

**24.** The method of any one of claims **23** wherein transmitting the computed velocities further comprises filtering the computed velocities prior to transmission.

**25.** The method of claim **24** further comprising transmitting an orientation of an ellipse fitted to a thumb contact to an electronic or electromechanical device.

**26.** The method of claim **23** further comprising transmitting an orientation of an ellipse fitted to a thumb contact to an electronic or electromechanical device.

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