common reference, such as a horizontal, as shown in FIG. **4** by the angles (ϕ1 and (ϕ2. The angle between the two motion vectors is the absolute value of the difference between the angles, and the motions are considered aligned if

$$|\phi_1-\phi_2|<\theta_a \quad (1)$$

[0041] Similarly, the motions are considered opposed if

$$|\phi_1-\phi_2|>\theta_o \quad (2)$$

[0042] In the preferred embodiment of the invention, $\theta_a=\theta_o$, That is, any pair of motions M**1** and M**2** is classified as either aligned or opposed. In this instance, only one of the two tests described in Equations 1 and 2 need be performed. If the test for aligned motion is performed and the criterion is not satisfied, the motions are considered opposed. Conversely, if the test for opposed motion is performed and the criterion is not satisfied, the motions are considered aligned.

[0043] In an alternative embodiment of the invention, $\theta_a\neq\theta_o$, providing an angular region of dead space ($\theta_a\geqq\phi\leqq\theta_o$) within which the motions are neither aligned nor opposed. In this embodiment, both tests described in Equations 1 and 2 must be performed. If neither criterion is satisfied, the gesture identification module remains in the Tracking Two state.

[0044] In the Zooming state, the gesture identification module identifies a zooming gesture and issues a zoom command to the display control module that, when executed by the display control module, alters the magnification of the displayed imagery. Specifically, with each update of contact information, the magnification of the screen is scaled by the factor

$$K=\frac{d}{d_o} \quad (3)$$

where d_o is the distance between C**1** and C**2** prior to the most recent update, and d is the distance **330** between C**1** and C**2** after the most recent update If either the first or second contact is terminated, U**1** or U**2**, the gesture identification module enters the Was Tracking Two state (FIG. **3**; **3040**). If either or both of the first and second contact continue to move, M**1** or M**2**, the gesture identification module remains in the Zooming state to identify another zooming gesture and issue another zoom command to the display control module. Zooming thus continues until the first contact is terminated.

[0045] In the Was Tracking Two state, the gesture identification module identifies no gesture and issues no display command to the display control module. The gesture identification module awaits the termination of the remaining contact, U**2** or U**1**. Upon termination of the remaining contact, the gesture identification module returns to the Idle state.

[0046] Although the invention is described herein with reference to the preferred embodiment, one skilled in the art will readily appreciate that other applications may be substituted for those set forth herein without departing from the spirit and scope of the present invention. Accordingly, the invention should only be limited by the Claims included below.

1. A method for identifying user gestures, comprising the steps of:

a touch sensor determining contact information that describes locations at which a user contacts a touch sensitive surface corresponding to a display;

said touch sensor providing said contact information to a gesture identification module;

said gesture identification module using state information to identify a user gesture and, responsive thereto, issuing an associated display command to a display control module; and

said display control module updating said display based on display commands received from said gesture identification module.

2. The method of claim 1, wherein said touch sensor is physically coincident with said display.

3. The method of claim 1, wherein said touch sensor and said display are physically separate.

4. The method of claim 1, said touch sensor determining contact information using a set of infrared emitters and receivers arrayed around a perimeter of a projection surface, oriented such that each emitter emits light in a plane that is a predetermined distance above said projection surface, wherein a location where a user is touching said projection surface is determined by considering which emitters are and are not occluded as viewed from each of said receivers.

5. The method of claim 1, said touch sensor incorporating a substantially continuous set of emitters around a perimeter and three receivers, each positioned in a corner of a projection surface.

6. The method of claim 1, said touch sensor incorporating a resistive touch pad placed beneath a flexible display surface, said resistive touch pad comprising at least two layers of plastic that are separated by a compressible insulator, with a voltage differential maintained across said separated layers; wherein when an upper layer is touched with sufficient pressure, it is deflected until it contacts a lower layer, changing a resistive characteristics of an upper to lower layer current pathway; wherein from said changes in resistive characteristics a location of contact is determined.

7. The method of claim 1, said touch sensor incorporating a capacitive touch pad.

8. The method of claim 1, further comprising the step of:

providing contact information from said touch sensor to said gesture identification module; wherein said contact information is updated over time at discrete, regular intervals.

9. The method of claim 1, further comprising the steps of:

providing contact information from said touch sensor for up to two contacts at each update; and

said gesture identification module identifying gestures based on initiation, termination, position, and motion of said up to two contacts.

10. The method of claim 9, wherein for touch sensors providing information for more than two contacts, said gesture identification module ignoring additional contacts initiated when two current contacts are presently reported by said touch sensor.

11. The method of claim 1, further comprising the step of: said touch sensor explicitly indicating within contact information that a contact has been initiated or terminated.