

detecting a layout homing gesture when all five fingers of a hand are placed on the surface in a partially closed posture;

measuring during the layout homing gesture the position offsets of the homing hand and fingers with respect to the predetermined default finger positions;

translating the key regions normally typed by the hand by the measured hand and finger offsets such that each home row key region lies at approximately the measured position of its corresponding finger; and

updating the displayed positions of the key region symbols on a visual display embedded in the surface.

103. The method of claim 95, wherein the layout of key regions defined on the surface is morphed to fit the user's hand size and current position, the method comprising the following steps:

identifying what hand part each surface contact comes from;

detecting a layout homing gesture when all five fingers of a hand are placed on the surface in a partially closed posture;

measuring during the layout homing gesture the position of each finger on the surface;

translating each home row key region and its neighboring keys by an amount such that the new position of the home row key region is approximately the same as the measured position of its corresponding finger; and

updating the displayed positions of the key region symbols on a visual display embedded in the surface.

104. The method of claim 95, wherein typing while the fingers mostly rest on the surface is made easier by not requiring finger liftoff quickly following each press of a key region, the method comprising the following steps:

measuring the relative impulsiveness or forcefulness of finger touchdowns;

producing key symbols from liftoff and impulsive or forceful touchdown of a finger while most fingers on the same hand are resting on the surface even if the finger continues to rest on the surface without quickly lifting back off the surface; and

not producing key symbols when finger touchdowns are gentle or synchronous with other fingers.

105. The method of claim 95, wherein typematic or automatic key repetition when a finger is held on a key is emulated despite the fact that fingers which stay on the surface for extended periods are normally ignored to support hand resting, the method comprising the steps of:

issuing a first keypress signal after a holding finger has touched down and remained on a desired key region for at least a hold setup time interval and all other fingers on same hand leave the surface within a release setup time after holding finger touched down;

periodically issuing additional keypress signals every repeat time interval subsequent to the second keypress signal as long as the holding finger continues touching the desired key region; and

ceasing repetitive issuance of the additional keypress signals when the holding finger lifts off the surface.

106. The method of claim 105, wherein touchdown, resting or liftoff of hand contacts identified as palms on either hand does not affect the typematic state.

107. The method of claim 105, wherein the cycle of keypress signal generation continues irrespective of whether other fingers touch down and rest on the surface subsequent to issuing the first keypress signal.

108. The method of claim 105, wherein the repeat time interval is continuously adjusted to be inversely proportional to current measurements of holding finger proximity or pressure.

109. A method for choosing what kinds of input signals will be generated and sent to an electronic or electro-mechanical device in response to tapping or sliding of fingers on a multi-touch surface, the method comprising the following steps:

identifying each contact on the surface as either a thumb, fingertip or palm;

measuring the times when each hand part touches down and lifts off the surface;

forming a set of those fingers which touch down from the all finger floating state before any one of the fingers lifts back off the surface;

choosing the kinds of input signals to be generated by further distinctive motion of the fingers from the combination of finger identities in the set;

generating input signals of this kind when further distinctive motions of the fingers occur;

forming a subset any two or more fingers which touch down synchronously after at least one finger has lifted back off the surface;

choosing a new kinds of input signals to be generated by further distinctive motion of the fingers from the combination of finger identities in the subset;

generating input signals of this new kind when further distinctive motions of the fingers occur; and

continuing to form new subsets, choose and generate new kinds of input signals in response to liftoff and synchronous touchdowns until all fingers lift off the surface.

110. The method of claim 109, wherein all sets or subsets which contain the same number of fingertips choose the same kinds of input signals, such that sets or subsets are uniquely distinguished by the number of fingertips they contain and whether they contain the thumb.

111. The method of claim 109, wherein all sets or subsets which contain the same combination of thumb, index, middle, ring, and pinky fingers choose the same kinds of input signals.

112. The method of claim 109, wherein the method is applied to contacts identified as left hand parts independently from contacts identified as right hand parts.

113. The method of claim 109, wherein no input signals are generated after a set or subset is formed without further distinctive finger motions, to support resting of fingers on the surface.

114. The method of claim 109, wherein one of the distinctive finger motions is synchronized liftoff of a finger