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Abstract

Reference-free positioning system with suppression of blocking effects

A positioning apparatus includes a directional RF transceiver and also an IR sensor. The two sensors are swept through an angular range while the RF transceiver transmits RF signals and receives RF reflections, to enable a positioning algorithm to occur. The IR sensor is used to identify likely instances of human blocking of the RF signals, and to modify the positioning algorithm to reduce the likelihood of the positioning algorithm failing. Specifically, the processing algorithm is modified to take into account how the received reflected RF signals will be changed by passing through a human body and/or to reduce the effects of reflections from the human body. In cases where the RF reflection is strong, even though the IR sensor detects a warm object, it is determined that the warm object is not a human body, so that modification of the positioning algorithm is unnecessary.

[Fig. 3]