

Title (en)

SYSTEM FOR DETECTING INTERACTIONS WITH A SURFACE

Title (de)

SYSTEM ZUR DETEKTION VON INTERAKTIONEN MIT EINER OBERFLÄCHE

Title (fr)

SYSTÈME DE DÉTECTION D'INTERACTIONS AVEC UNE SURFACE

Publication

**EP 3973376 A1 20220330 (EN)**

Application

**EP 20742856 A 20200519**

Priority

- IT 201900007040 A 20190521
- IB 2020054720 W 20200519

Abstract (en)

[origin: WO2020234757A1] System for detecting interactions with a surface, said surface being substantially flat, said interactions involving contact with or vicinity to the surface by one or more objects, said system comprising: - a number of optical sensors (C1,.....C5) aligned in front of one side of said surface (S), capable of generating view cones (FW) that are partially overlapped, independent and provided with computational capacity, generating a continuous detection zone (Z) in front of the surface, which is adapted to effect said interaction detection; - means in each independent sensor, adapted for analysing the signals coming from said optical sensors and configured for executing successive detection, recognition and event generation operations, so that said sensors can be grouped into independent modules adapted to be applied to the surface to be made interactive; - said detection operations comprising: pre-filtering, convolution and "feature- based" algorithms adapted to determine the position of said one or more objects within said continuous detection zone (Z) and to determine the type thereof by discerning among hands, fingers and objects entering a field of view of the sensors; - said recognition operations comprising: triangulation with windowing for computing the positions of the interactions among said positions, hierarchical clustering for determining the interaction type, tracking of said positions to define the variations of said positions within a period of time; - said event generation operations comprising: transformation of said positions and time variations into displayed events, thereby detecting said interactions.

IPC 8 full level

**G06F 3/042** (2006.01); **G06F 3/14** (2006.01); **G06F 3/16** (2006.01)

CPC (source: EP)

**G06F 3/0428** (2013.01); **G06F 3/1423** (2013.01); **G06F 3/165** (2013.01); **H04N 9/3147** (2013.01); **H04N 9/3194** (2013.01)

Citation (search report)

See references of WO 2020234757A1

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

**WO 2020234757 A1 20201126**; EP 3973376 A1 20220330; IT 201900007040 A1 20201121

DOCDB simple family (application)

**IB 2020054720 W 20200519**; EP 20742856 A 20200519; IT 201900007040 A 20190521