

Title (en)  
SYSTEM AND METHOD FOR DETERMINING THE THREE-DIMENSIONAL LOCATION AND ORIENTATION OF IDENTIFICATION MARKERS

Title (de)  
SYSTEM UND VERFAHREN ZUR BESTIMMUNG DER DREIDIMENSIONALEN POSITION UND AUSRICHTUNG VON IDENTIFIKATIONSMARKIERUNGEN

Title (fr)  
SYSTÈME ET PROCÉDÉ DE DÉTERMINATION DE L'EMPLACEMENT ET DE L'ORIENTATION TRIDIMENSIONNELS DE MARQUEURS D'IDENTIFICATION

Publication  
**EP 3104802 A1 20161221 (EN)**

Application  
**EP 15703774 A 20150209**

Priority

- US 201461938033 P 20140210
- EP 2015052664 W 20150209

Abstract (en)  
[origin: WO2015118157A1] A three-dimensional position and orientation tracking system comprises one or more pattern tags (77), each comprising a plurality of contrasting portions (1222, 1322, 1332), a tracker (508, 610) for obtaining image information about the pattern tags, a database with geometric information describing patterns on pattern tags; and a controller (210) for receiving and processing the image information from the tracker, accessing the database to retrieve geometric information, and comparing the image information. The contrasting portions are arranged in a rotationally asymmetric pattern (1224) and at least one of the contrasting portions on a pattern tag has a perimeter that has a mathematically describable curved section (1236, 1326, 1336). The perimeter of the contrasting portion may comprise a conic section, including for example an ellipse or a circle. The pattern tags may be borne on tracking markers (12) that have a three-dimensional shaped surface. The tracking system may be implemented in a surgical monitoring system in which the pattern tags are attached to tracking markers or are themselves tracking markers. In other embodiments, the contrasting portions are implemented as contrasting pattern elements (333) on a close-packed tiled background (35) of tiles (334) of at least two mutually contrasting colors.

IPC 8 full level  
**A61B 34/20** (2016.01)

CPC (source: EP)  
**A61B 6/03** (2013.01); **A61B 6/0492** (2013.01); **A61B 6/51** (2024.01); **A61B 34/20** (2016.02); **A61C 1/082** (2013.01); **A61C 9/0053** (2013.01); **A61B 6/12** (2013.01); **A61B 6/5294** (2013.01); **A61B 10/0233** (2013.01); **A61B 2034/2065** (2016.02); **A61B 2090/3983** (2016.02)

Citation (search report)  
See references of WO 2015118157A1

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 2015118157 A1 20150813**; CA 2938359 A1 20150813; EP 3104802 A1 20161221

DOCDB simple family (application)  
**EP 2015052664 W 20150209**; CA 2938359 A 20150209; EP 15703774 A 20150209