

ABSTRACT

The invention relates to a method and a system for inside-out optical-inertial tracking of a movable object. The method includes the following steps: (a) providing emission of IR light by a plurality of markers; (b) reading a picture from an optical sensor physically connected to the movable object and detecting pixels satisfying predefined conditions in the read picture by a first data processing device; (c) detecting marker blobs, based on the detected pixels, and determining parameters of the marker blobs by the first data processing device; (d) reading a data from at least one inertial sensor physically connected to the movable object by the first data processing device; (e) generating a consolidated data flow comprising the parameters of the marker blobs and the data of the at least one inertial sensor by the first data processing device, and transmitting the consolidated data flow by a first communication device to a second communication device; (f) receiving the consolidated data flow by the second communication device and determining a tracker positioning data in a coordinate system of a motion area of the movable object by a second data processing device, based on the consolidated data flow; (g) validating a mathematical model of a tracker motion path, based on the tracker positioning data, by the second data processing device; (h) extrapolating the tracker positioning data onto an extrapolation horizon, based on the validated mathematical model of the tracker motion path, by the second data processing device.