

Title (en)  
VISION-ASSISTED CAMERA POSE DETERMINATION

Title (de)  
KAMERAPOSEBESTIMMUNG MIT SICHTHILFE

Title (fr)  
DETERMINATION DE LA POSE D'UNE CAMERA A ASSISTANCE VISUELLE

Publication  
**EP 1068489 A2 20010117 (EN)**

Application  
**EP 99971239 A 19991119**

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• US 9927483 W 19991119  
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Abstract (en)  
[origin: WO0034803A2] A completely passive and self-contained system for determining pose information of a platform is disclosed. The system comprises a motion sensing device and an imaging device, both operating together in a known temporal relationship, so that each of the images generated from the imaging device corresponds to a set of motion data provided by the motion sensing device. In a preferred embodiment, the motion sensing device and the imaging device are integrated together and/or operate synchronously. The imaging device senses the surrounding scene from which features are extracted and tracked to determine the imaging device motion. Hence no advance information regarding the scene or no special scene preparation is required. Further, a statistic estimation process, such as the Kalman filter, is employed to assist the feature tracking. To determine the pose information, the features and the motion data propagated by a strapdown navigation process are provided to the statistic estimation process. Errors from the statistic estimation process are used to refine the features and the motion data. As a result, the pose information outputted from the statistic estimation process is of high accuracy regardless the accuracy of the motion data and features as well as the associated equipment.  
[origin: WO0034803A2] A completely passive and self-contained system for determining pose information of a platform comprises a motion sensing device and an imaging device, operating together such that each of images generated from the imaging device corresponds to a set of motion data provided by the motion sensing device. The motion sensing device and the imaging device may be integrated and/or operate synchronously. The imaging device senses the surrounding scene from which features are extracted and tracked to determine the imaging device motion. Hence no advance information regarding the scene or no special scene preparation is required. Further, a statistic estimation process, such as the Kalman filter, is employed to assist the feature tracking. To determine the pose information, the features and the motion data propagated by a strapdown navigation process are provided to the statistic estimation process. Errors from the statistic estimation process are used to refine the features and the motion data.

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**G01S 5/16** (2013.01)

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