ABSTRACT

This research proposed a methodology for specifying the location of an object with image processing. The objectives of this methodology are to capture the target area, which is used for object detection and to specify the location of the object by using image processing as the main part of the methodology. To determine whether the object is on the target area or not. In order to locate the dropping object on the image plane efficiently, consecutive images are analyzed and a threshold operation is proposed. Because the accuracy of the dropping object location on the difference of consecutive images image plane is usually influenced by noise; hence, an effective noise filter by threshold operation is invoked to remove it. Moreover, transformation unit is adopted to map the XY coordinate on image plane into the world coordinate for an accuracy of the dropping object's position. After we get the actual XY coordinate of the dropping object, we can find the distance from the target point (center) and clock direction of the dropping object related to the center also. In addition, by using one digital video camera set on the tower and pan to capture the image on the target area to detect the dropping object from the air to the ground. It made the proposed methodology provide easier portability to detect the dropping object in any area by only move the camera to capture on any desire area on the ground. Otherwise with the effective transformation unit, it can be adapted to specify the XY coordinate, distant from target point, and clock direction of the dropping object related to the center on rise and tilt area also.