

ABSTRACT

Method for estimating the position and speed errors of an inertial platform with the aid of an SAR imaging radar

The subject of the invention is a method for determining the position error and the speed bias of an inertial platform aboard a carrier pursuing a trajectory towards a target, characterized in that it furthermore comprises the following steps:

- acquiring aboard the carrier a series of SAR-type images of the target;
- utilizing the said images to measure on the basis of each of the images a measurement of the distance and a measurement of the Doppler of the target;
- estimating the precise position of the carrier with respect to the target and the speed error (corresponding to a bias over a small duration), on the basis of the measurements of distance and of the Doppler of the target with an estimator filter.

The invention can also comprise a step of determining the shape of the trajectory which optimizes the performance of the estimator filter.

The fields of application of the invention are:

- the precise guidance of a missile onto a fixed target on the basis of an SAR "Synthetic Aperture Radar" seeker.
- the resetting of the inertial platform of an aircraft carrying an SAR "Synthetic Aperture Radar" radar.