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THE STROBES SIZES JUSTIFICATION DURING IDENTIFYING INFORMATION IN A MULTI-POSITION SURVEY RADARS SYSTEM

Combining information from single system separate sources is a promising direction for accuracy and information content improving. There are a number of works devoted to this area. At the same time, there are cases when information from survey radars, each of which does not continuously track an air target, is subject to consolidation. In this case, information consolidation is possible at the level of combining traces or at the level of combining single measurements, the algorithms of which are discussed in sufficient detail in the relevant literature.

This raises the problem of identifying information received by individual sources of the system. In most works for identification, certain features (polarization, scattering, spatial, high-speed, etc.) are used, which make it possible to separate targets from each other in the corresponding strobe. In this case, the size of the strobe is selected based on the estimates of the primary coordinates measurement errors (range, elevation, azimuth and radial velocity) and the characteristics of the target movement.

However, in practice, there are additionally errors in topographic reference, orientation, leveling and time synchronization of the survey radars included in the system. The influence of the ensemble of the given errors on the characteristics of the system, and in particular, on the strobe size when identifying targets, was not given in the literature known by authors.

The report contains relations characterizing the influence of the above errors on the accuracy characteristics of the system. It is shown that in some cases (a system of highly mobile survey radars, for example), the influence of the corresponding errors can be very significant, and leads to the need to increase the identification strobe size by several times. The algorithm for ―adaptive‖ changes in identification strobes, which allows one to estimate and take into account the errors of topographic location, orientation, leveling and time synchronization, based on the results of previous measurements by the system at the same positions, is presented.