

Fusion the Coordinate Data of Airborne Objects in the Networks of Surveillance Radar Observation Systems



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Abstract In this paper, we provide a classification of surveillance radar surveillance systems of airspace, which are among the main information sources of the airspace control system and air traffic control. A brief description of the information processing process in survey radar systems for observing airspace is given and it is shown that the complexity of the processing system does not allow formalization and analysis of its robots as a whole; therefore, it is necessary to preliminarily divide the system into elements and study their functioning separately. The tasks of information processing at the stage of signal processing are considered, as well as a brief description of the primary, secondary and tertiary data processing. It is shown that the fusion of information from the same air objects can be carried out at all stages of data processing. It is shown that the transition to the assessment of the four-dimensional location (4D) of an airborne object changes the procedures for merging individual measurements carried out by various radar observation systems with different rates of data output. This is due to the fact, that from the output of the primary data processing by monitoring systems, an airborne object form is issued, which includes the time to estimate the coordinates of the airborne object with the necessary accuracy.

Keywords First keyword · Second keyword · Third key surveillance systems · Air object · Secondary surveillance radar · Data processing · Multi-radar data processing

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