

# Signal Provision of Address Systems Identification Friend or Foe

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**Abstract**—The work presents the optimization of the system of signals emitted by aircraft transponders of the Identification Friend or Foe system, which is based on the use of a system of signals, each of which determines specific spatial coordinates of the airspace. That allows, having received the coordinates of an aerial object based on the data of the primary radar and comparing them with the coordinate data obtained from the received signal of the Identification Friend or Foe system, to carry out the identification of the detected aerial objects. Thus, it is possible to implement interference-resistant systems for the identification of aerial objects, built at the network level with distributed information processing and capable of providing reliable information to users of the airspace control system. An algorithm for constructing such a signal system has been developed. It is optimal for the minimum intrasystem interference based on the main signal.

**Keywords**—signal systems, Identification Friend or Foe (IFF), intrasystem interference, noise immunity

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