Model and Method for Detecting Request Signals in Identification Friend or Foe Systems

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Abstract—This paper suggests a new model and method for detecting request signals in an Identification Friend or Foe (IFF) aircraft responder. It is proposed to separately accumulate the detected components of a request signal coming from the spaced antennas of an aircraft responder and then decrypt these accumulated components. The comparative analysis of request signal detection shows that the proposed model and method can improve the quality of detection as compared to that achievable with the currently used model and method based on the decryption of request signals received from the spaced antennas of an aircraft responder.

Keywords—IFF, ATC, aircraft responder, request signal, detection probability, false alarm probability, Neumann-Pearson criterion, likelihood ratio.

REFERENCES


DOI: 10.1109/CADSM.2019.8779322
https://ieeexplore.ieee.org/document/8779322