

Comparative Analysis of Methods for Processing Data Transmission Information Codes by Secondary Radar Channels

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Abstract—The paper presents a comparative analysis of the quality of request signals processing of secondary radar systems of the international mode RBS, regulated by the ICAO standard, as well as the method of transmitting flight data from an air object using ATC information codes. It has been shown that when receiving encoded request signals, the operations of decoding and inter-period processing of pulses can be carried out in two ways: decoding with preliminary inter-period processing of input pulses and decoding with subsequent inter-period processing of decoded pulses). It is shown that the information code of the ATC mode is more noise-resistant in comparison with the information code of the RBS mode when implementing integer processing logic. With fractional processing logics, the RBS mode code is more noise-resistant.

Keywords—secondary surveillance radars (SSR); Identification Identify Friend or Foe (IFF); Chaotic impulse noise (CIN); ATC; ICAO; ADS-B; RBS; analys; method

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