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**СИСТЕМНЫЙ АНАЛИЗ, УПРАВЛЕНИЕ КОСМИЧЕСКИМИ АППАРАТАМИ, ОБРАБОТКА ИНФОРМАЦИИ И СИСТЕМЫ ТЕЛЕМЕТРИИ**

# Analysis of the Results Obtained over Three Years of Operation of AIS Vessel Monitoring Equipment Based on the Resurs-P No. 2 Spacecraft

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**Abstract.** In recent years, space systems for ship monitoring based on receiving AIS signals from the vessel equipment are actively developed worldwide. In this work, the analysis of the results of operation of the first Russian space-based AIS signal receiver during the period of 2015–2017 is carried out. The receiver operates in session mode, up to 5 times a day for 30–60 seconds. The demodulation and decoding of the recorded AIS signals is performed at the ground facilities.

The main areas of operation are the Black, Norwegian, Barents, Kara, Bering and Okhotsk seas. During the given period, more than 480 thousand messages from around 23 thousand unique ships were received. The possibility of receiving messages of type 27, specifically designed for satellite AIS, is confirmed. Messages from class B low-power AIS transmitters were also registered.

Based on the obtained array of regular observations, the probability of repeated detection of the same vessel is calculated. For the mentioned above receiver operation mode, the probability of observing the same vessel for the next day is 0,33–0,45, for two days it is 0,44–0,61, and the probability is 0,72–0,81 for observation during one week. The next generation satellite receiver will receive and decode AIS and ASM messages on-board.

**Keywords:** vessel monitoring, AIS, satellite AIS