An Automated Ground Checkout System for Oceansat-3 Scatterometer

Vetal Akshay Pandit, Chetan Lad, Priyanka Gupta
Space Applications Centre, ISRO, Ahmedabad, 380015
E-mail: vetalakshay@sac.isro.gov.in, chetanlad@sac.isro.gov.in, priyankagupta@sac.isro.gov.in

Worldwide scatterometer missions are mainly used to provide near sea surface ocean wind vector information. ESA has flown C band fan beam scatterometers whereas JPL and ISRO have heritage of flying pencil beam Ku band scatterometers. ISRO has successfully launched two microwave scatterometer missions OSCAT and Scatsat-1 in 2009 and 2016 respectively. Both the mission data especially, Scatsat-1 has been highly appreciated by national and international users. OS-3/3A Scatterometer missions have been planned to provide continuity of Ku-band scatterometer data to the intended users. These two missions are planned to be launched in an interval of six months.

In Oceansat -3 scatterometer mission, size and configuration of reflector antenna has been modified from previous mission in order to cater experimental high resolution along with nominal mode. Flexibility incorporated in ScatSAT-1 for programmability in on– board parameters has been retained in the follow on mission. There is an immense requirement for automated testing and checkout of ground data with minimum manual intervention which provides results with less turn-around-time, considering the launch schedule of the two missions. Ground processor equivalent to on-board processor has been developed to verify functionality of on-board processor. Automatic error report generation along with analysis results, corresponding to various sensor modes are the important features of the developed software. This software has been offered to vast test cases and certified for all test cases.

This paper discusses the algorithm and implementation of an automated GUI based software for processing the digital data acquired through digital acquisition and control system during ground characterization of payload.

Key words: Scatsat, Scatterometer, Oceansat-3