

Micro-Dragon, the microsatellite for observing ocean environment in Vietnam

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MicroDragon is the first 50 kg class microsatellite of Vietnam National Satellite Center (VNSC). It is being developed by VNSC researchers under instruction of the Japanese professors come from five universities including Hokkaido University, The University of Tokyo, Keio University, Tohoku University and Kyushu Institute of Technology. Hokkaido University has been responsible for the development of the science payloads based on the demands and requirements from the scientific point of view.

Mission of MicroDragon is ocean color observation over Vietnam Ocean to provide data for assessing water data by using two imagers being composed of Space-borne multispectral Imager and Triple Polarization Imager onboard and Fluoro probes in the sea for the missions. Micro-Dragon is Sun-synchronous orbit satellite integrated Attitude determination and control system (ADCS) that is able to receive ocean color data over Vietnam Ocean many times per day. Therefore, one of its applications will be a response system to quickly cope with harmful algae (e.g. red tides and harmful algal blooms) over Vietnam Ocean that has damaged human and marine ecosystems. By using the space-borne ocean color observation system and the marine sensor, networks which can detect ocean anomalies in-real time and disaster information. The system are suitable for capturing subtle changes and detect anomalies in ocean environments in real-time. The end of 2017, the development of MicroDragon will be finished. By now, the project is heading to Critical Design Review in September 2016 after three years implementation since 2013.

Keywords: microsatellite, ocean environment, red tides, harmful algal blooms, ocean hazard