An efficient method for high-res deep ocean mapping newly developed in the international unmanned survey competition

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Recently, with the spread of high-resolution deep seafloor mapping using Autonomous Underwater Vehicles (AUVs), it has become possible to obtain detailed bathymetric maps at deep waters, as well as those at shallow waters. In the future, in order to further improve the efficiency of deep seafloor mapping, including unmanned launch and recovery of AUV, technological innovation is necesssary. To promote such technological innovation, the Shell Ocean Discovery XPRIZE, an international unmanned bathymetric competition at deep waters, had been held for three years. The GEBCO-Nippon Foundation Alumni team, led by alumni of the bathymetric survey training program at the University of New Hampshire, has won the championships of teams around the world. Through participation in this competition,the team has developed new technologies for creating detailed seafloor bathymetric maps in deep water areas. This paper introduces the technical activities of the GEBCO-Nippon Foundation Alumni team throughout the "Shell Ocean Discovery XPRIZE", and specifically describes the efficient high-resolution deep sea mapping method developed by this team,including its features and advantages.

Keywords: Shell Ocean Discovery XPRIZE, GEBCO-Nippon Foundation Alumni Team, Bathymetric Survey, Autonomous Underwater Vehicle / Unmanned Surface Vessel, Multibeam Echosounder / Synthetic Aperture Sonar, Bathymetric Data Processing / Analysis