

Challenge to Future Deep-Water Mapping: Unmanned Bathymetric Survey Competition "Shell Ocean Discovery XPRIZE"

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Unmanned survey technology is utilized in the world of bathymetric survey in the present age, when unmanned technologies are developing in various fields. Especially Autonomous Underwater Vehicle (AUV) is actively used in order to acquire high resolution bathymetric data in the deep waters. The technological innovation is needed to further advance the unmanned and automated deep-water mapping, including AUV operations of launch and retrieval. In order to encourage such innovation, an international competition of unmanned deep-water mapping, "Shell Ocean Discovery XPRIZE" has been held for 3 years.

The University of New Hampshire actively develops many hydrographic and oceanographic survey technologies that will open a new era, and as a part of these efforts GEBCO-NF Alumni Team challenges the international unmanned deep-water competition. The author has been strongly pushing the research and development of technology of bathymetric survey for this challenge as a member of this team, who was studying abroad to this university until 2017 to learn the latest hydrographic survey technologies. This team had passed through Round 1 (semi-final: ~ 2000 m) held in November 2017, and challenged Round 2 (final: ~ 4000 m) as one of the finalists in the last November. In this paper, we report our efforts and achievements of the GEBCO-NF Alumni team, including those in Round 2.

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