Press Releases

Real-time Ocean Bottom Tsunami Monitoring System Using Vector TsunaMeter Successfully Completes Trial Observation

As already announced in the press releases ("Identifying the Source Location of the Giant Tsunami Generated by the 2011 Tohoku Earthquake" dated October 4, 2013 and "A New Ocean Bottom Tsunameter Based on the Ocean Dynamo Effect" dated January 8, 2014), Japan Agency for Marine-Earth Science Technology (JAMSTEC; Asahiko Taira, President) has demonstrated the effectiveness of the new ocean bottom Tunameter (The Vector TsunaMeter: VTM), which can estimate the tsunami propagation vector based on the ocean dynamo effects.

Towards building a real-time observation system using this device, a trial observation was carried out by placing the VTM on the bottom of ocean, which successfully transmitted real-time data to the land via a Wave Glider, an autonomous ocean-going platform.

On the early morning of April 3, this system successfully caught the tsunami waves propagating towards the Japanese coasts in real time after the earthquake struck off the coast of northern Chile on April 2 (Japan Time).
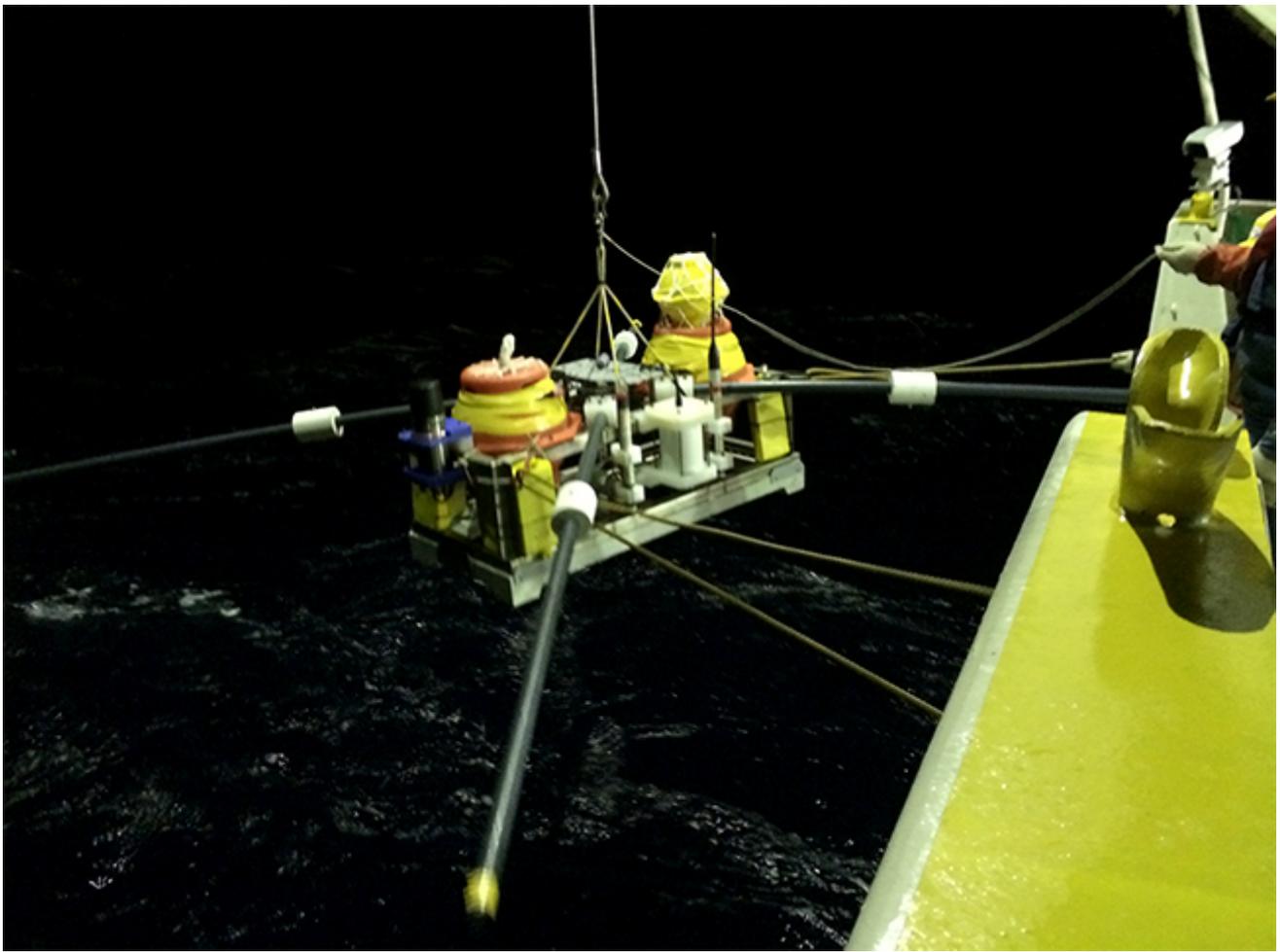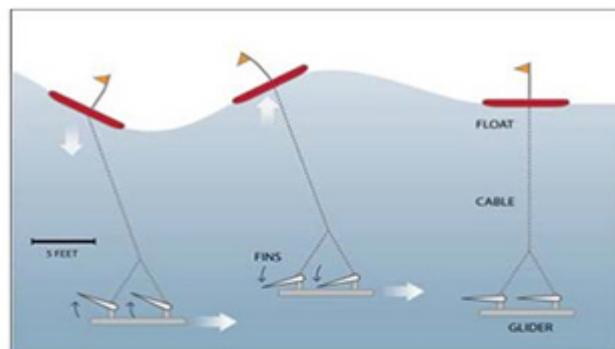
Figure 1. Vector TsunaMeter (VTM)

Figure 2.

An underwater glider harnesses the wave energy to move the float and umbilical cable. It requires no refueling.

Wave Glider ™ manufactured by Liquid Robotics Inc. It comprises the Float connected via a 6 m (20 ft) umbilical cable to the Glider (Sub), the underwater component.

An autonomous Wave Glider travelling over the ocean
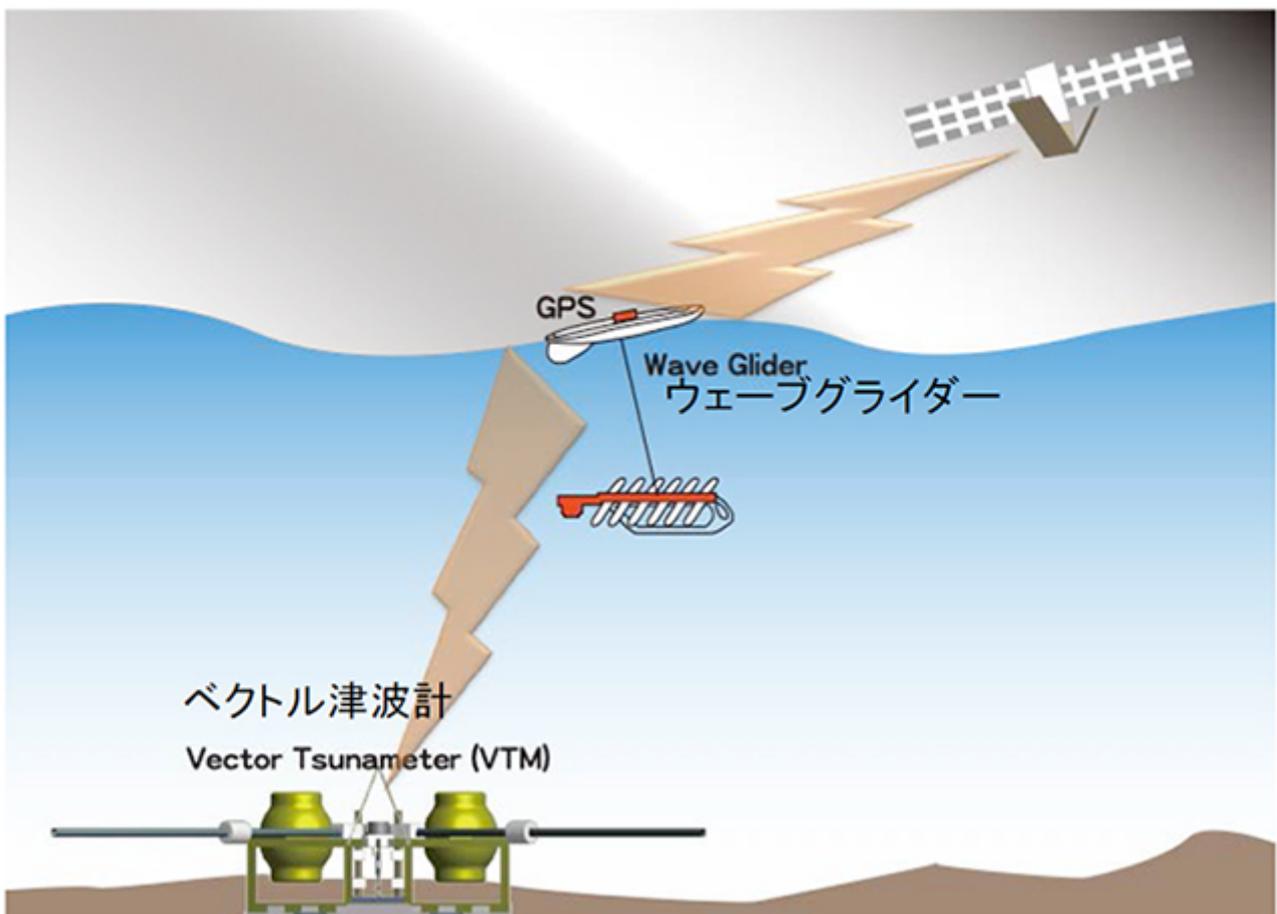

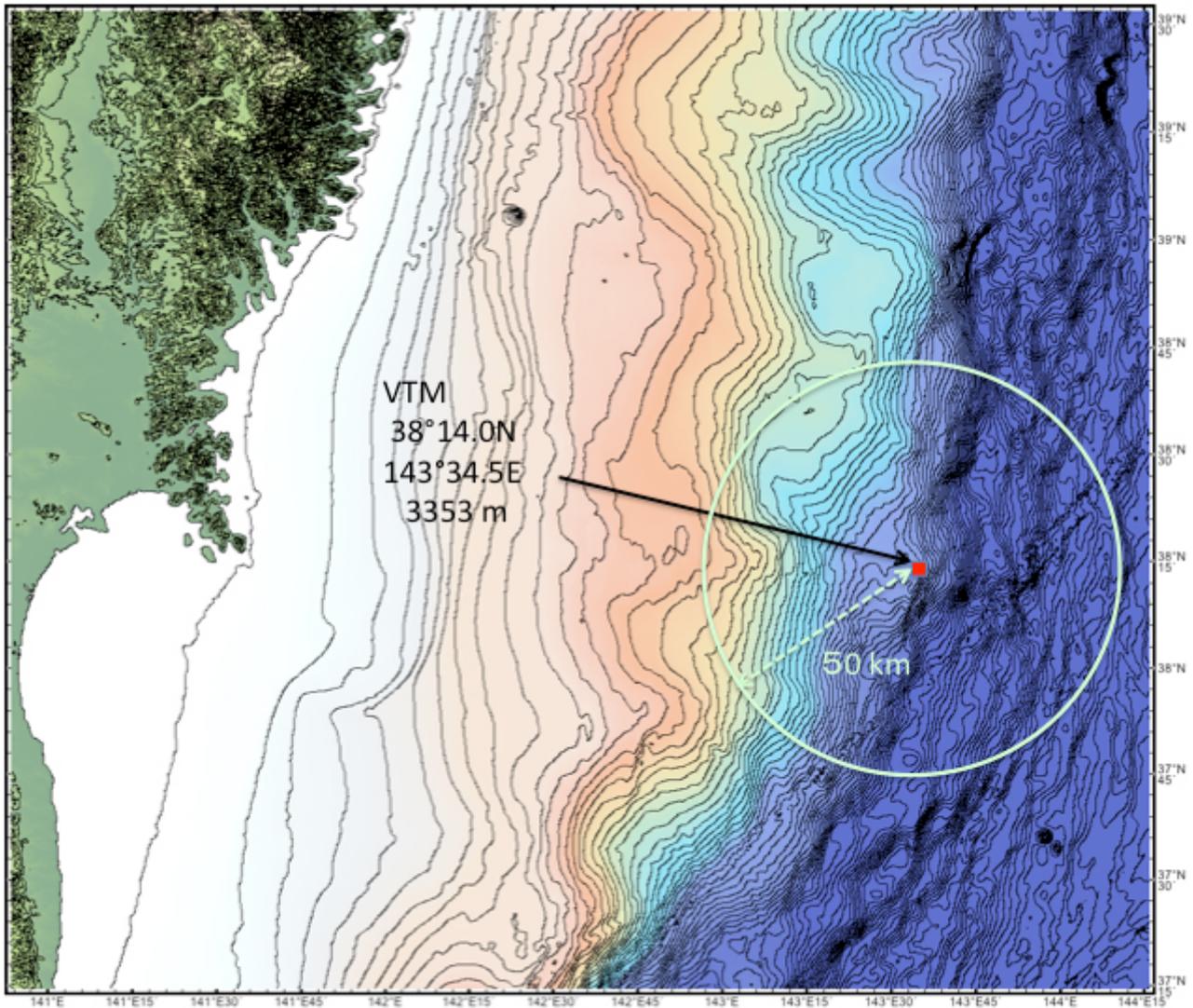Figure 3. Real-time observation system using VTM

Figure 4. Wave Glider Location / 200km east from offshore of Miyagi Prefecture
※ The white circle shows the Wave Glider's traveling area.

VTM
38°14.0N
143°34.5E
3353 m

50 km

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