



Shinsei-maru Cruise Report KS-25-J06C

DONET maintenance

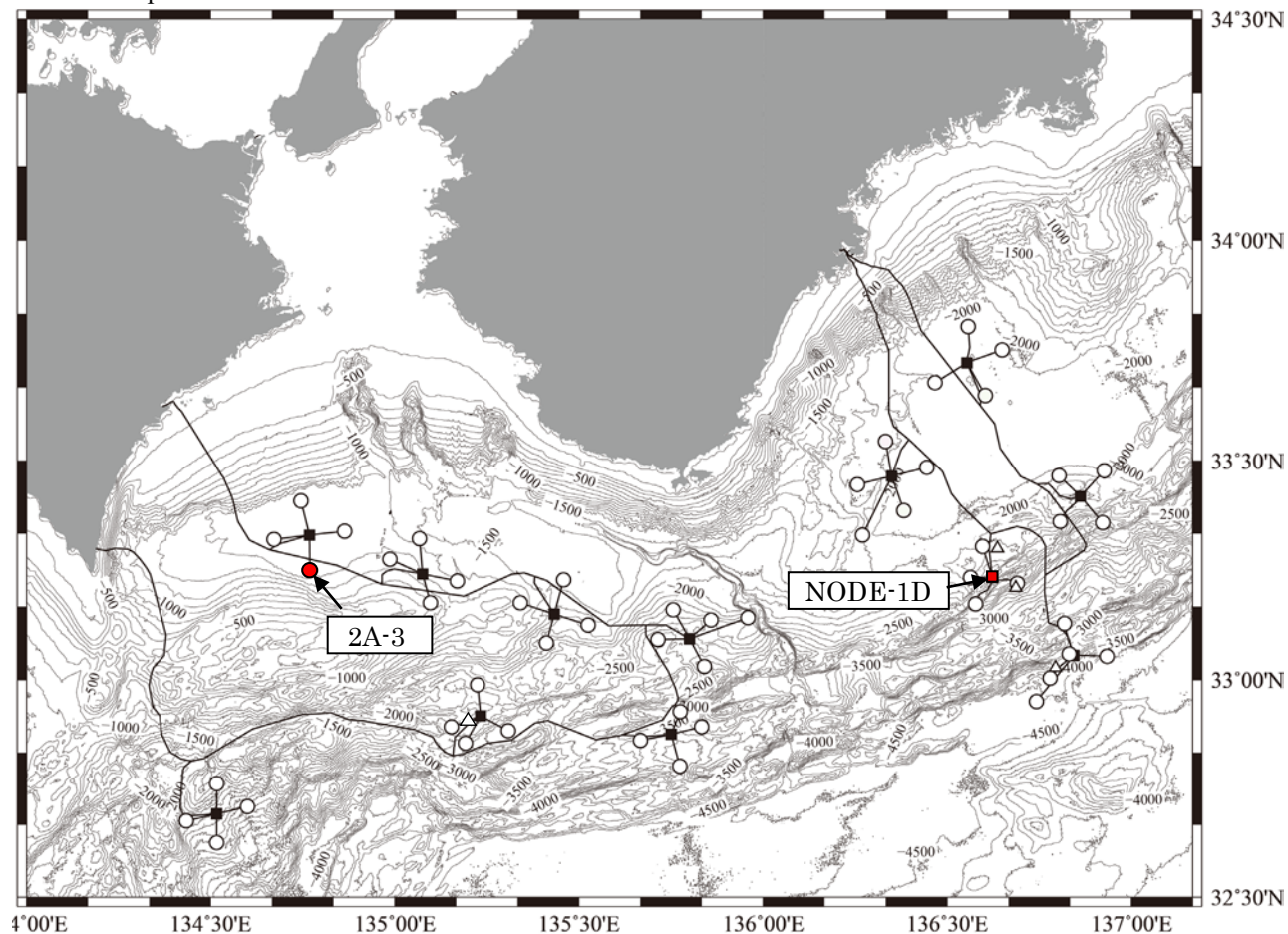
Kumano-nada
Off Kii-channel

June. 6, 2025- June. 14, 2025

Japan Agency for Marine-Earth Science and Technology
(JAMSTEC)

1. Cruise Information

- Cruise ID KS-25-06C
- Name of vessel R/V Shinsei-maru
- Title of cruise DONET Maintenance
- Chief Scientist [Affiliation] Takashi YOKOBIKI [JAMSTEC]
- Cruise period 6-June, 2025 – 14 June, 2025
- Ports of departure / arrival Kobe port – JAMSTEC Yokosuka
- Research map



ODONET observatory Δ Long term borehole Monitoring System

Observatory No.	Latitude	Longitude	Depth [m]
NODE-1D	33-13.998°N	136-37.350°E	2,080
2A-3	33-14.940°N	134-46.148°E	1,352

2. Research Proposal and Science Party

- Title of proposal
- Representative of Science Party
- Science Party (List)

DONET Maintenance	
Takane HORI	[JAMSTEC]
Takashi YOKOBIKI	[JAMSTEC]
Takeshi KATAYAMA	[JAMSTEC]
Kyohiko MITSUZAWA	[JAMSTEC]
Fumito SAKURAGI	[NME]
Masanori TOKUNAGA	[NME]
Kazuki TANIGUCHI	[NME]

3. Dive summary

3.1 DIVE#2270 on 7 June 2025: Preparation for Recovery of NODE-1A.

Preparations for the recovery of Node-1A were carried out during this dive. The ROV *Hyper Dolphin* commenced its descent at 08:21 and reached TU-1A at 09:42. First, the connector on Port 8, which was connected to the DONET Sensor at observation site 1A-4, was disconnected and placed on the seafloor near NODE-1A. Subsequently, the connectors associated with observation site 1A-1 (Port 2), 1A-2 (Port 1), and 1A-3 (Port 3) were individually disconnected and placed on the seafloor. Finally, the connection between NODE-1A and the termination unit TU-1A was disconnected, then reconnected to the parking port on NODE-1A to complete recovery preparations. Miniature transponder ID 54 was successfully retrieved, and the ROV ascended from the seafloor at 13:15

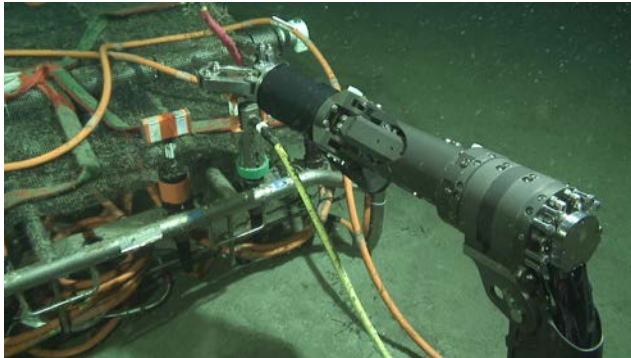


Photo 3.1-1 1A-4 disconnection from Port 8

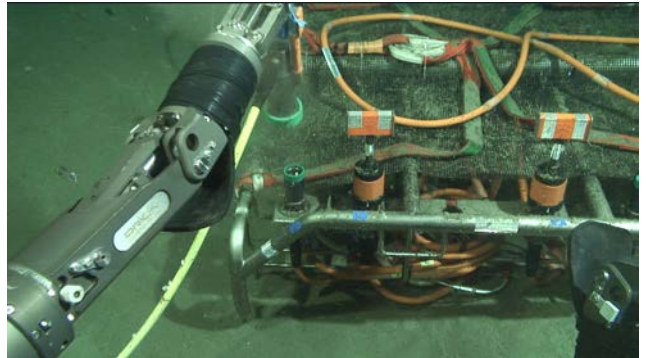


Photo 3.1-2 1A-1 disconnection from Port 2

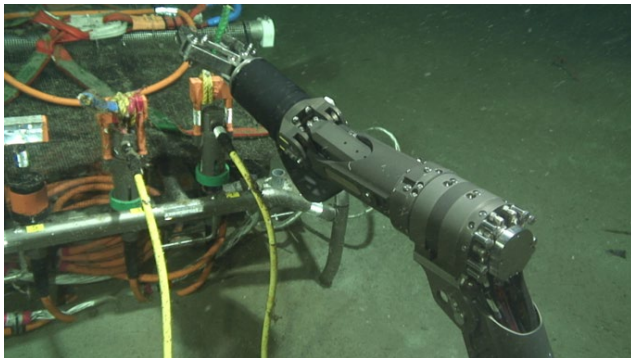


Photo 3.1-3 1A-2 disconnection from Port 1



Photo 3.1-4 1A-3 disconnection from Port 3

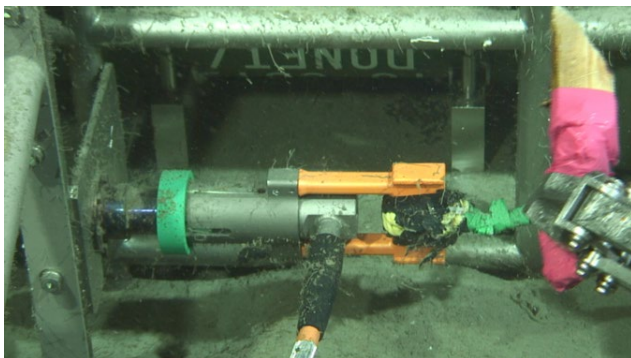


Photo 3.1-5 Disconnection of NODE-1A from TU-1A.

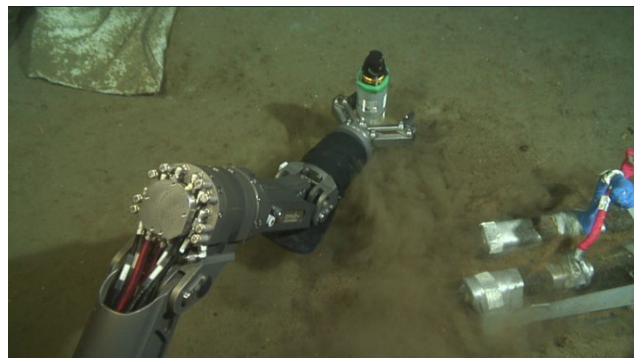


Photo 3.1-6

3.2 DIVE#2271 on 8 June 2025: Recovery of NODE-1A.

The recovery of NODE-1A was conducted during this dive. The ROV initiated its descent at 08:33 and reached the seafloor at 10:11. A dust cap was first installed on the connector of the termination unit TU-1A. The ROV then proceeded to NODE-1A, where it connected its recovery line to the pre-installed sling. Departure from the seafloor occurred at 11:43

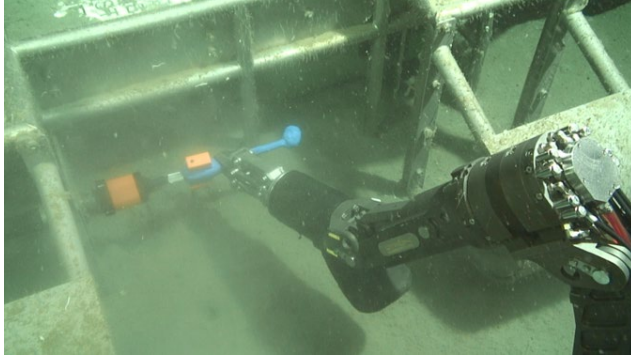


Photo 3.2-1 Dust cap installation

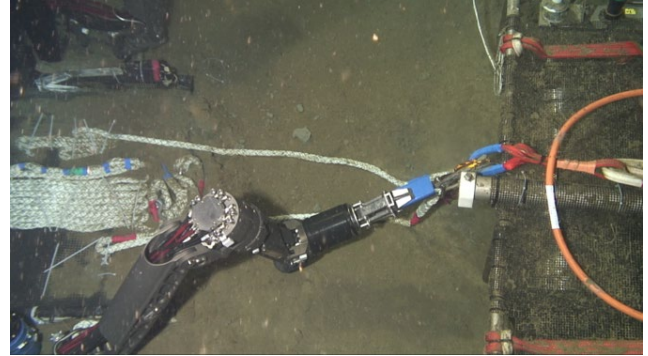


Photo 3.2-2 Recovery line connected to NODE-1A

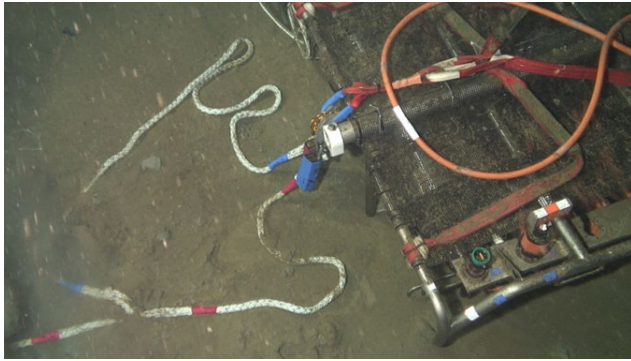


Photo 3.2-3 Beginning ascent.



Photo 3.2-4 Recovered NODE (Unit A010)

3.3 Dive#2272 on 10 June 2025: Installation of NODE-1A(Unit A040)

The refurbished NODE (Unit A040), serviced on land prior to deployment, was installed during this dive to resume observation operations. The ROV began its descent at 08:28 and landed on the seafloor at 09:34. Upon reaching the designated installation site, the ROV operated its hydraulic cylinder to release and install the NODE. After connecting NODE-1A (Unit A040) to the termination unit TU-1A, the following observation devices were connected: 1A-4 to Port 8 at 11:37, 1A-1 to Port 2 at 12:02, 1A-2 to Port 1 at 12:24, and 1A-3 to Port 33 at 12:53. One parking port was recovered, and the ROV left the seafloor at 13:10.

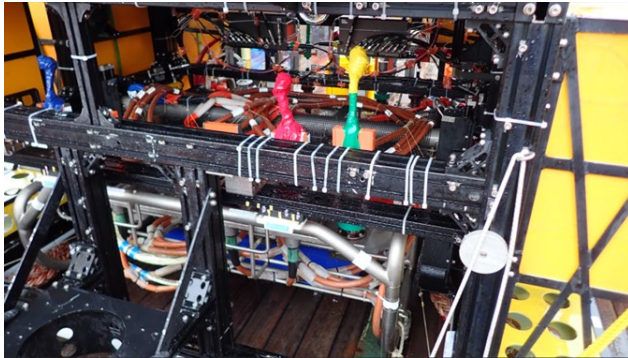


Photo 3.3-1 NODE (unit A040) mounted in ROV



Photo 3.3-2 NODE A040 connected to TU-1A

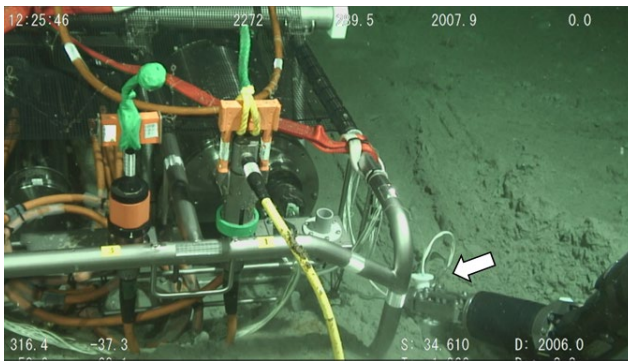


Photo 3.3-3 Installed Sea Earth

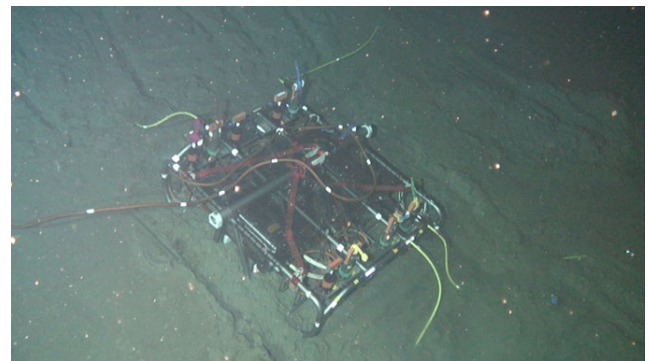


Photo 3.3-4 Installed NODE-1A on seafloor

3.4 Dive#2273 on 12 June 2025: DONET Sensor unit recovery at the Observatory Site 2A-3.

During this dive, the DONET sensor unit—comprising the ground motion sensing system and the pressure sensor package—was recovered due to a malfunction in the broadband seismometer. The pressure sensor package is linked to the ground motion sensing system via a cable. Both the extension cable from the science node and the cable from the battery equipment were connected to the pressure sensor package using underwater mateable connectors (UMC).

After landing on the seafloor, the ground motion sensing system was extracted from the caisson, followed by the removal of the connectors for the extension cable and battery equipment. Recovery ropes were then hooked onto the ground motion sensing system and the pressure sensor package, respectively. The ROV Hyper Dolphin departed the seafloor at 15:43.

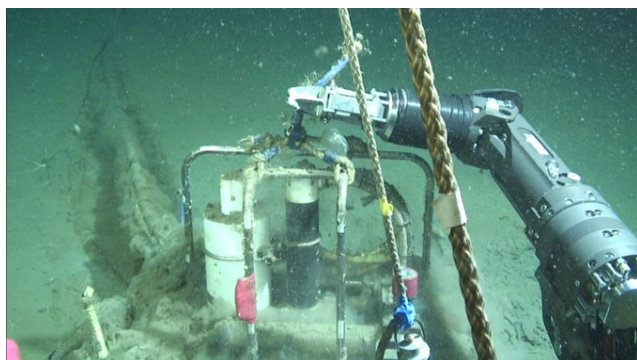


Photo 3.4-1 Pressure sensor package

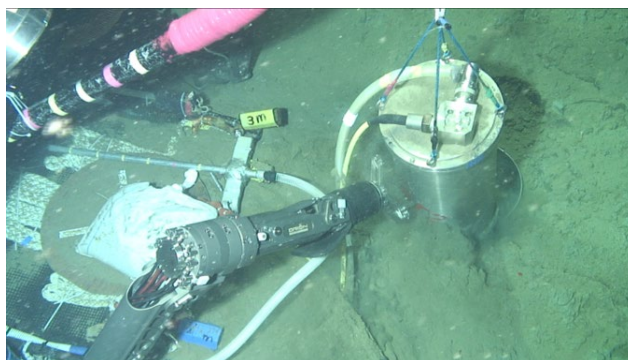


Photo 3.4-2 Ground Motion Sensing system

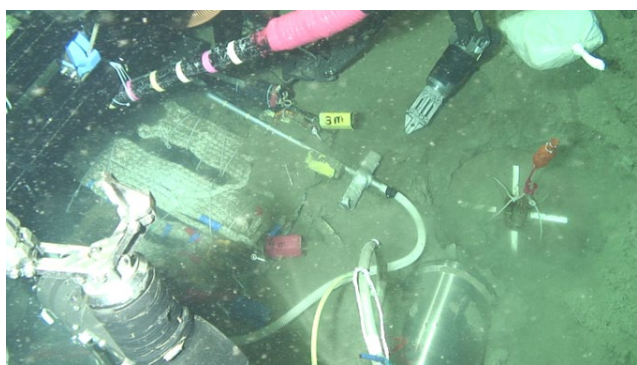


Photo 3.4-3 Placed the lid on the hole

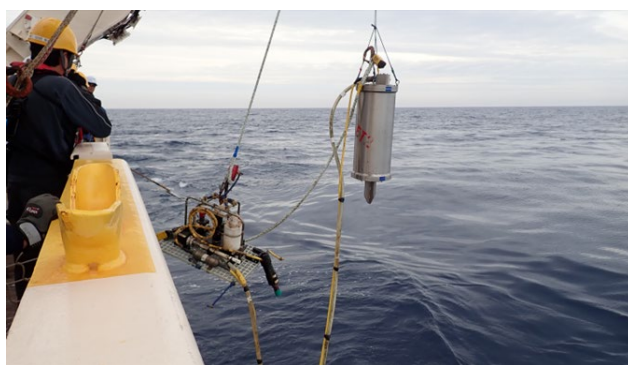


Photo 3.4-4 Recovered DONET sensor

4. Notice on Using

This cruise report is a preliminary documentation as of the end of cruise.

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