ID: Type: **Poster**

undersea observatory based on Ethernet

In 2015, the University of Tokyo deployed 4th seafloor cabled system. It is 2nd cabled system in the off-Sanriku region, the northwest Pacific, and 2nd generation of Internet Protocol (IP) based observatory. We employed standard Transmission Control Protocol/Internet Protocol (TCP/IP) with a speed of 1 Gbps for system control and monitoring, and data transmission. It helps us to reduce cost and brings flexibility and expandability. It is also important to achieve availability and reliability. Redundant system is an easy and effective way. The new system has 3 observation nodes with one external port, which use Underwater Mateable Connector and Power over Ethernet technology. Each node has a CPU, FPGAs and dual switching hub. The system has dual-ring and partial mesh topology with 4 fibers. IEEE-1588 (PTP) is also implemented to synchronize a real-time clock. Furthermore, other 2 fibers are dedicated for precise timing. This system works well, and record many events such as 2016 off Fukushima earthquake (M7.4) and its tsunami.

Primary author: YAMADA, Tomoaki (Japan Meteorological Agency)

Presenter: YAMADA, Tomoaki (Japan Meteorological Agency)

Track Classification: Risk mitigation in design, installation and operation of submarine cabled systems