



A cabled long term observatory to investigate carbon and methane fluxes by using teleoperated vehicles

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The International Research Consortium on Continental Margins (IRCCM) is developing a cabled long term observatory to investigate carbon and methane fluxes by using teleoperated vehicles. Ocean observatory networks will provide Marine Sciences with a new view of the oceans. It will offer innovative approaches to both the discovery and testing of oceanic processes and to new kinds of monitoring capabilities around offshore installations. These observatories are identified as key instrumentation required to address scientific questions of continental margin research. The seafloor observatories to be installed will use newly developed junction boxes and fiber-optic cable protocols. IRCCM is actively involved in four major programs dedicated to cabled long-term observatories: a US and Canadian approaches for the investigation of a whole tectonic plate in the NE-Pacific, the NEPTUNE program; the US MARS program, which develops a near-shore deep-sea observatory as a proof-of-concept site for future cabled observatories and the preparation of an EU program, with stations monitoring European waters. In 2004 the first prototypes of three internet-operated vehicle (IOV) with the ability to move on the seafloor by web-cam control and to carry out detailed investigations were built and tested. The IOV is connected to the internet within an underwater network or via an Ethernet/power connection to a ROV or offshore installation and will remain on the seafloor for extended periods of time.