Current status of J-CORES, a scientific data management system to collect and visualize science data acquired on Chikyu

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J-OCRES' Profile

J-CORES development was initiated in 2000. The first version 0.1 (2002-02) contains CompositeLogViewer which connects to Janus clone database. From J-CORES 0.2 (2003-02), it was started to develop VCD, Uploader and Stratigraphy with data model contains a lot of original tables and Janus clone. In J-CORES 0.3 (2004-01), VCD has capability to describe sedimentary, hard rock, and deformation structures, and gradated or alternated lithology. Uploader can load files of magnetometries.

J-CORES 0.4 (2005-04) contains Applications Operation, Curation, Sample and User. The data model became that of J-CORES. Stratigraphy is capable to develop references of chrono-, magneto-, bio-, and lithostratigraphic unit and horizon, and bibliography. Uploader can load files of geochemical measurements. J-CORES 0.5 (2005-08) includes Application D-Tunes, and the capability of Uploader to load extra data in CSV file. Data model of stratigraphic horizon recognition and age model was also built as well as file format specifications. Application microBio is included by version 0.6 (2005-10-03). Version 0.7 (2005-10-31) has the capability to store XRD measurement.

J-CORES test on Chikyu

In November 2005 J-CORES version 0.7 was installed on the science server of Chikyu in order to utilize J-CORES in the real core flow conducted during Offshore Hachinohe test drilling cruise. J-CORES 0.7 collected the data of (1) operation; site, hole, and core drilling: (2) curatorial ones; section, and sample: (3) measurements; GC-NGA, X-ray CT scannogram, whole core MSCL, split core MSCL, colorimetry MSCL, image MSCL, SQUID magnetometry, shear strength, XRF core logging, moisture and density, XRD, and visual core description.

Users entered data by using J-CORES human interfaces for operational and curatorial data as well as visual core description. For the most of measurements except for NGR and Vane Sear, the laboratory technicians loaded the data by themselves on the each PC connected to different instrument. Therefore, time lag between data acquisition and data load was fairly small. And J-CORES data visualizer worked well.

Future plan

During JFY2006 (2006-04 to 2007-03),interfaces will be developed to process depths and to recognize stratigraphic horizons and to build age-model as well as the final modifications will be done ready to the coming Chikyu operation. Current development phase and outsourcing contract will finish with J-CORES 1.0 at the end of JFY2006. Shift to free software: It is under consideration that At the end of the current development phase (2007-03), the J-CORES 1.0 will be available as a free software. Before that, some releases will be done under a free software license (as soon as possible, 2006-03 as estimated)
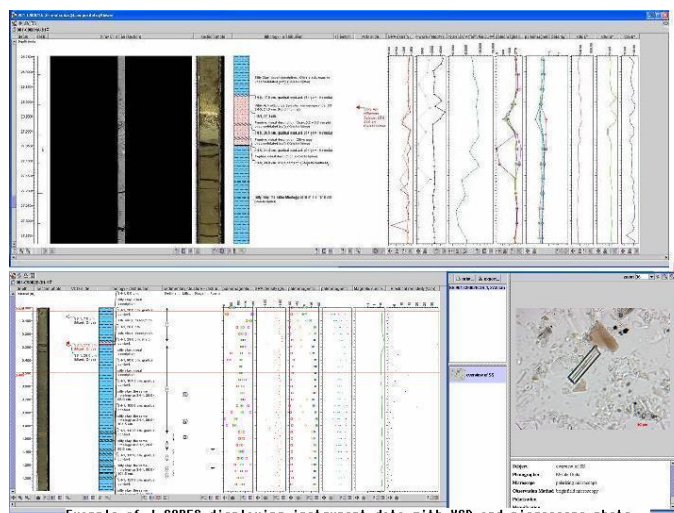
Example of J-CORES displaying instrument data with VCD and microscope photo
(core data of Offshore Hachinohe drilling '05 Nov)