

A proposal of *J-CORES* onboard test during *Joides Resolution* transit from Expedition 309 to 311

DRAFT

Shigemi MATSUDA and Kyoma TAKAHASHI, CDEX

2005-07-27

This document aims to define methodologies of the onboard test on *Joides Resolution*. Test items are, (1) an input test of operation and curation data by using *J-CORES* applications *Operation* and *Curation*, (2) an input test of visual core description data by using *J-CORES* application *VCD*, (3) uploading tests of instrumentally measured data by using *J-CORES* application *Uploader*, (4) micropaleontology by using *J-CORES* application *Stratigraphy*, and (5) a visualization test by using *J-CORES* application *CompositeLogViewer*. This is a proposal that *CDEX* wish to do on *Joides Resolution*. A final methodologies and procedures are discussed by *USIO* people and *DMCG* before the proposed cruise.

Test (1) input of operation and curation data by using *J-CORES* applications *Operation* and *Curation*

J-CORES has applications *Operation* and *Curation* which allows us to input data of expedition, site, hole, core, section and sample along onboard core flow. However, they have not fully demonstrated yet to work successfully along actual core flow. We request that several dummy cores (no actual rock or sediment needed; core liner tube of 10 m long is sufficient) flow simulative along the actual core flow during the transit; from catwalk, cut into sections, split to working and archive halves, and sampling from sections. Expedition, site, hole, sample requests and codes are also tested to organize by using applications *Operation* and *Curation*. We will have a test that shipboard evaluation party (including *USIO*, *ESO*, *IODP-MI* and *CDEX*) inputs such data into *J-CORES* at actual timing and place onboard.

CDEX will have completed testing them by a desk top exercise before the cruise, and the onboard test focuses just on practical aspects, e.g. timing of data entry.

Test (2) visual core description by using *J-CORES* application *VCD*

For the test, shipboard evaluation party will describes some actual cores by

using *J-CORES* application *VCD*. *CDEX* requests *USIO* to provide the test cores; real sediments and rocks; hopefully one core of 9.5 m long, 7 split sections; from which smear slides and thin sections can be taken (several halves, smear slides, and thin section slides of Leg 206).

J-CORES VCD has been demonstrated its capabilities by the ODP data migration test from *USIO*'s paper barrel sheets and *AppleCore* diagrams into *J-CORES*, which *CDEX* reported recently to *IODP-MI*. However, practical core description has not been tested using stylus pen device on the spot. So *CDEX* will bring one tablet PC onboard.

Test (3) uploading instrumentally measured data by using *J-CORES* application *Uploader*

CDEX will bring data files measured by various equipments on the *CHIKYU*. On the *Joides Resolution* board tests are conducted to upload them by using *J-CORES* application *Uploader*. The equipments are, (i) whole core MSCL, (ii) split core MSCL, (iii) spectrophotometer, (iv) image line scanner, (v) pass through type magnetometer, (vi) Kappabridge, (vii) CHNS/O element analyzer, (viii) coulometer, (ix) X-ray CT-scanner, (x) XRF core logger, (xi) spinner magnetometer, (xii) gas chromatography (ECD/FID/NGA/TCD,FID), (xiii) gas mass spectrometer, (xiv) ICP mass spectrometer, (xv) liquid chromatography, and (xvi) thermal conductivity.

For a couple of instrumentally measured data, people (perhaps lab. tech.) enter the data by using human interfaces; (xvii) interstitial water and (xviii) moisture and density.

Test (4) micropaleontology by using *J-CORES* application *Stratigraphy*

This test consists of two major steps; taxa list development and occurrence chart processing. To develop taxa list, ascii text files in a specific format are loaded into *J-CORES* by using application *Stratigraphy*. *CDEX* will prepare such text files as similar to the Test (3). Application *Stratigraphy* is capable to input fossil occurrence informations, and the function would be tested onboard.

Test (5) visualization by using *J-CORES* application *CompositeLogViewer*

In this test, VCD data entered by the Test (2) and instrumentally measured data are visualized and printed out by *J-CORES* application *CompositeLogViewer*. Before the onboard test, instrumentally measured data corresponding to the cores for the Test (2) are prepared by the same method employed by the previous migration test from *Janus Web* to *J-CORES*, i.e. migrating data in *Janus Web* into *J-CORES* by using some scripts.

Test preparation and requirements

We would perform the following preparation for the onboard tests before the cruise. We are greatly appreciated *USIO*'s helps.

- Dummy cores preparation for the Test (1); *USIO* would prepare some dummy cores to simulate onboard core flow
- Test core preparation for the Test (2); *USIO* would provide some actual cores, and let *CDEX* know which cores and slides would be available
- Instrumentally measured data loading; *CDEX* would provide the test data files; *USIO* Lab Techs. would load them using *J-CORES* application *Uploader*
- *J-CORES* server PC on *Joides Resolution*; *CDEX* will send a PC including *J-CORES* server and a tablet PC for *VCD* as well as all the *J-CORES* application programs and user manuals to *Joides Resolution*. *USIO* would prepare onboard network connectivities for the server in order to connect it from PCs onboard.

Onboard schedule

Onboard test procedure are the followings.

- 1st–2nd day (2 days): installation of *J-CORES*, kick-off meeting
- 3rd–5th day (3 days): Test (1); user training (total 1/2 day), tests (2 days), sum-up (1/2 day)
- 6th–10th day (5 days): Tests (2) and (5); user training (1 day), tests (3 days), sum-up (1 day)
- 11th–13th day (3 days): Test (3); user training (1/2 day), tests (2 days), sum-up (1/2 day)
- 14th–15th day (2 days): Test (4); user training (1/2 day), tests (1 day), sum-up (1/2 day)
- 16th day (1 day): sum-up, bulk report
- 17th day (1 day): uninstallation of *J-CORES*, shipping PCs



IODP
INTEGRATED OCEAN
DRILLING PROGRAM

J-CORES Test Cruise on the JR

Summary Report



IODP-MI Sapporo
September, 2005

IS-DM-0008
Draft Version

Table of Content

Participants	ii
Executive Summary	1
Process	3
Operation, Curation and Sample	5
Functionality	5
Testing Summary	5
Uploader	6
Functionality	6
Testing Summary	6
Visual Core Description (VCD).....	7
Functionality	7
Testing Summary	7
Stratigraphy.....	9
Functionality	9
Testing Summary	9
Composite Log Viewer.....	10
Functionality	10
Testing Summary	10
D-Tunes	11
Functionality	11
Testing Summary	11
IODP Curation Management System (ICMS)	12
Other Discussions	14
Action Items	16
Conclusion	17

Participants

Name	Affiliation	Title
Blum, Peter	USIO	Supervisor of Analytical Services
Brandt, Lisa	USIO	Marine Laboratory Specialist: Chemistry
Bronk, Tim	USIO	Assistant Laboratory Officer
Deardorff, Jason	USIO	Marine Laboratory Specialist: X-ray
Fackler, David	USIO	Application Developer
Firth, John	USIO	Curator
Foster, Paul	USIO	Applications Developer Administrator
Hawkins, Lisa	USIO	Marine Laboratory Specialist: Core
Henderson, Jennifer	USIO	Marine Laboratory Specialist: Paleomagnetism
Johnston, Karen	USIO	Marine Laboratory Specialist: Underway Geophysics
Matsuda, Shigemi	CDEX	Deputy Group Leader of Information Management
Miller, Jay	USIO	Staff Scientist
Mithal, Rakesh	USIO	Supervisor of Databases and Archives
Miville, Bernard	IODP-MI	Data Management Specialist
Paul, Heather	USIO	Marine Laboratory Specialist: Physical Properties
Rumford, Phil	USIO	Marine Curatorial Specialist
Takahashi, Kyoma	CDEX	Information Management Coordinator

Note: Participants from ESO were also invited but because of Visa restrictions, they could not make it for the departure date of the JR.

Executive Summary

The major goal of the J-CORES test cruise that took on the JR from August 28 to September 14 2005, was to assist CDEX performing a full sea-trail of the J-CORES before their upcoming drilling operation. It was mainly proposed to assess the existing functionality of the J-CORES data tools by having experienced users be trained and then use the following tools on a number of different ODP cores:

- Operation, Curation, Sample
- Uploader
- Stratigraphy
- Visual Core Description (VCD)
- Composite Log Viewer (CLV)
- D-Tunes (Partial test)

A secondary goal was to give the opportunity for other IO's to become aware of existing data tools that have been created by actually using them. This was aimed at highlighting the potential of having common data tools in the future.

During the cruise, daily meetings, sometimes several times a day with training sessions from CDEX, demo and discussion sessions and test wrap-up sessions were held. We tested one tool at a time and everybody was entering their comments electronically (Excel and Word files).

The testing went very smoothly and everybody provided detailed and constructive review comments. On top of assessing the J-CORES functionalities per se, participants drawing on many years of sea going experience were also able to provide CDEX with information on how the work flow is being done on the JR and how scientists and technicians conduct their work.

In general the tools were very user friendly and most users were capable of using them right after the training with minimum help. However, some of the user manuals critically need technical editing in order to be useful, but for most tools they were in fact not really needed.

The tools did what they were designed to do but did not always match what the participants were expecting. The VCD was the most complex tool. The participants quickly realized that this was a Core Summary tool and not, as expected, a Description tool. However it is a, by itself, a major achievement as it is the first tool to be capable of storing digital core description data into a database. The CLV proved to be a very useful tool to immediately view the data after being entered into J-CORES. Some limitation exists in providing publication quality output. There were also some significant concerns with performance of the VCD and CLV as they work too slow for real time use.

The J-CORES database and the code itself were viewed by the participants as being very clean and easy to administer, identify problems and fix them.

The USIO is considering using some of the code related to the J-CORES user interfaces for their own future development of ship board tools. CDEX is planning to have the J-CORES source code available as open source by the end of March 2006. CDEX hope to have similar test onboard the Chikyu to be arranged for other untested modules and a follow up on updated version of the modules tested on the JR.

The first draft of the requirements for the future IODP Curation Management System (ICMS) were also developed during the cruise. This document will be distributed to all IO's for comments before moving to the next step. Once the specification document is completed and agreed upon, each IO's will have a defined role in the development of the system and IODP-MI will oversee the management of the project.

During the cruise, we also took the time to have a short discussion about the future Information Portal for IODP (IPI). The functionalities of existing Geosciences metadata portal were demonstrated in order to clarify the future possibilities with the IPI. For IODP, metadata at the Hole level is probably the best approach as suggested at the Edinburgh meeting last June. IODP-MI is in the process of developing the IODP metadata profile.

Overall the test was a success and surpassed the original goal of simply testing J-CORES. It provided an excellent opportunity for CDEX, USIO and IODP-MI to share operational experience and laid the foundation for future collaborative work in IODP data management.

This report gives a summary of the process and comments collected during this test cruise. All the detailed comment documents are available on the Data Management Coordination Group web site:

http://turonian.cris.hokudai.ac.jp/dmcg/index.php?m=tasks&a=view&task_id=13&tab=2

Username: guest

Password: metadata1

IODP-MI greatly appreciates all the help the USIO provided in making this test a reality. CDEX provided us with great training and full support while testing the J-CORES tools. We would also like to thank all the participants for their enthusiastic and professional work throughout the testing cruise.

Process

In this section we are describing the steps we took during the cruise in terms of planning, testing and collecting the comments.

We first had an initial meeting on the day we embarked on the JR to discuss the schedule and agreed on a daily plan for testing. The plan changed during the cruise to accommodate the different testing progress.

Date	Activity
28-Aug	Boarding ship, Initial set-up of J-CORES, Initial meeting
29-Aug	Kick off meeting, Core flow tour, User training in afternoon for Operation, Curation and Sample tools
30-Aug	Operation, Curation and Sample (Test 1) – Test
31-Aug	Operation, Curation and Sample (Test 1) - Test - Sum up
1-Sep	Uploader (Test 3) - Training – Test
2-Sep	Uploader (Test 3) - Test - Sum up
3-Sep	VCD (Test 2) - Training – Test
4-Sep	VDC (Test 2) – Test
5-Sep	VCD (Test 2) - Test - Sum up
6-Sep	Stratigraphy (Test 4) - Training – Test
7-Sep	Stratigraphy (Test 4) - Test – Sum up
8-Sep	CLV (Test 5) - Training – Test
9-Sep	CLV (Test 5) - Test + Sum up
10-Sep	Extra test, meeting as needed
11-Sep	Extra test, meeting as needed
12-Sep	Sum up Discussion
13-Sep	Uninstallation - Packing up
14-Sep	Leaving ship – Actually left on the 15

A second meeting was called on the next day to discuss how we will actually do the testing and decide who will be coordinating the actual test.

J-CORES tools	Coordinator	Main Participants
Operation, Curation and Sampling	John Firth	John Firth, Mike Storms and Technicians
Visual Core Description	Jay Miller	Peter Blum, Jay Miller
Uploader	Rakesh Mithal	Rakesh Mithal, David Fackler and Technicians
Stratigraphy	John Firth	John Firth, Peter Blum
Composite Log Viewer	Peter Blum	Jay Miller, Peter Blum
D-Tunes (Partial test, added later)	Paul Foster	Paul Foster

We decided to have a morning briefing every day to discuss the plan and making modification as needed. We also had wrap-up meeting at the end of each day to discuss any issues that came up during the testing. The wrap up sessions were longer when a tool was finished being tested. These extended wrap up sessions allow the participants to discuss their experience and present their overview comments. When appropriate we also had mid-day meeting where users were showing demo of what they have done.

Several technicians working during the transit cruise in preparation for the 311 expedition, were invited when possible to participate in the test. They provided unique insight and very useful comments.

Prior to testing any tool, Kyoma was providing training by distributing documentation and doing demonstrations.

Each J-CORES tool was tested by spending several days doing individual and group testing when appropriate. Every participant was requested to enter their comments electronically in Word and Excel documents.

During the same cruise we took the opportunity to discuss other issues such as IODP measurement, Lithology and Micro-Paleontology dictionaries but most importantly we also worked together in defining the first draft version for the requirements for the future IODP Curation Management System (ICMS).

The following section gives a summary of each tool based on the comments received from the participants and a summary of our discussion about other topics. All comments files are available on the Data Management Coordination Group:

<http://turonian.cris.hokudai.ac.jp/dmcg/>

J-CORES: Operation, Curation and Sample

Functionality

The Operation tool provides functions for entering information related to the current expedition, sites, holes, surveys and cores identification.

The Curation tool functions include editing the corelog, the miscellaneous material, the sample code and the sample request.

The Sample tool is designed to be used by the curator where sample identification can be entered.

The Curation tool depends on the Operation tool. If an expedition is not created by the Operation tool then nothing will show in the Curation tool. Similarly with the Curation and Sample tool.

Testing Summary

Basically the tools work and do what it is supposed to do, but some of the editing method (multiple windows, no tab editing, etc.) are inadequate and time consuming to most users. Especially the need to open many windows for entering data quickly becomes confusing.

For some of the tools, much more data is entered by the USIO using their own tool than what is possible in J-CORES (e.g. Ship port, departure dates, etc.).

There were also some issues about user privileges or access. From the participant's point of view, most users would need to have access to everything and not be limited to only some functionalities.

The participants liked a lot the consistent clean look of the applications and most of the time they were able to use them right after the training without having to refer back to the manuals or any other help.

Overall the tools perform well except for a lot of unusual editing functionality. The tools are clearly designed for the Chikyu operation and dependent on the J-CORES database structure, which is what the interfaces were designed for. The participants liked the quality of the interface and could become the starting point for sharing the code once it becomes open source.

Uploader

Functionality

The Uploader parses data files acquired by instrumental measurements and upload them into the database. The tool is designed to accept data files from instruments present on the Chikyu, but can be configured to add any other instrument.

Testing Summary

Main issue with the Uploader is the time spent on some part of the software in entering information before the actual Upload occurs. Other than that the software performed as expected and was quite stable. Other issues are related to the actual software editing method (not tab editing, double clicking, etc.)

The Uploader was designed for the instruments on the Chikyu but can be configured to accept other instruments. The participants mentioned that the times it takes to enter the data into the uploaded is probably equivalent to the time it takes to enter the same data into Excel. It might be a bit faster in Excel because of the capability of quickly adding rows, doing cut and paste etc. The participants would like to see the editing functionality on the Uploader to be more like a spreadsheet type of data entry.

Visual Core Description (VCD)

Functionality

The VCD allows sedimentologists, petrologists and structural geologists to enter visual core description by creating “digital barrel sheet” by using stylus pen devices on a tablet PC or a mouse on a regular computer.

Testing Summary

The participants with experience were able to use the software to its full capability within 3 to 4 days. For less experience users who never used a VCD package, it might take longer to become expert in using the software.

An issue with the user manual came up. The manual needs to go through a technical editor and major re-writing and organizing. As it is now, it is very confusing and hard to use.

There is also the issue that to fully view what was entered, you always need to go back to the Composite Log Viewer (CLV), that means that the system should probably work on 2 screens or make it in such a way that it does not need to CLV.

Jay started by presenting some positive comments about the tool and some other important issues he has with the tool. The tool is very complex but fairly user friendly. An experienced core describer can use the software within a few days of using it. Data entry is fairly straightforward, however sometimes there are up to 16 windows that need to be opened to get a final result. Both Jay and Peter pointed out that the VCD is not a Core Description tool but really a summary tool. Basically you need to describe the core first somewhere else and then enter the summary information to display the data visually. So all the data needed to be able to make a summary has to be entered or collected somewhere else in order to make the proper decision on doing the Core summary. It basically replaces the paper barrel sheet that are use to enter the information by hand with the distinct advantage that the summary data is kept in a database and can be visualized later using your own preference.

It seems that a tool to enter the needed information is needed to make the VCD a more complete package. Currently on the JR the data that is required is entered in an Excel spreadsheet, maybe that data could be imported in the future in the VCD to create an initial VCD graphic?

Another important issue was about the performance of the VCD. It was basically unusable on the MAC and very slow on PC because of the amount of refresh needed in order to view the data and also view it in the CLV.

USIO pointed out that they would like to create requirements for a VCD based on their experience. Matsuda-san showed us the original requirements for their VCD and they were very generic and may not have captured and convey the full spectrum of the community needs. Once the initial requirements are created and commented by other IO's, there could be an IODP wide meeting including knowledgeable scientists for refining these requirements. Then the J-CORES VCD, which is considered as an initial prototype, could be assessed again against these requirements.

Stratigraphy

Functionality

The Stratigraphy tool allows the shipboard stratigraphers to develop stratigraphy and geochronology.

Testing Summary

Only one user can do Stratigraphy at any one time. That is something that needs to be changed as different people might have to enter different part of the Stratigraphy at the same time.

One aspect that keeps coming up is that the software is not intuitive at all making it difficult to use it. The import function is seen as something that is very useful and is the right way to go. The participants would like to be able to enter data directly in cells, just like in a spreadsheet, instead of having to move around boxes and other complicated manipulation. So more universal way of entering data would make it easier for scientist to accept the tool.

There was also a discussion about having a central digital library of taxa, fossil group etc. so everybody can have a standard base to start with for importing into the software. The USIO is very concerned with the CDEX intent to make data entry very free style and mission specific. STP specifically recommended in the last meeting in Bremen (July 11-13, 2005) that there should be digital taxonomic dictionaries for microfossil taxa linking DSDP-ODP and current taxonomic concepts. Without keeping track of taxa, it will make it very difficult to implement standards for global searchability. Following STP recommendation, there is a need for a workshop or meeting with experts in the field in order to get recommendations on what is the best method to keep track of data entry.

The software has other features that are still in development or will be development like the recognition module for depth correlation and the Age model module. Other groups like at LDEO are also working on age model software and could be part of a collaboration effort.

Composite Log Viewer

Functionality

The Composite Log Viewer allows the visualization of multiple data versus depth (Processed or Measured) immediately after the data was entered in the database by other applications.

Testing Summary

One of the issues that came up is the capability of producing publication quality output. The current version of the software can not reproduce the current set up used in the Publication showing VCD images per section. The tool should have more functionality to edit titles adding legend, etc. for making quality output for inclusion in publication.

It would be useful to be able to export data for every column showing in the CLV instead of having to do it one by one.

Configuration (display look, table order, etc.) would be practical to be user based. It takes a fair amount of time to set up the exact look of the display and it would be very practical to be able to save the set up.

The tool is running slower on MAC than on PC. The performance problem keeps coming up not only on MAC but also on PC.

D-Tunes

Functionality

The D-Tunes functions include editing processed depth (e.g. mcd, rmcd, imbsf). The functions in the Composite Log Viewer application rely on the processed depth data entered in D-Tunes.

This application is still in development and only the upload of depth profile was possible at this time. In the final version there will be tools to allow the creation of different depth profiles.

Testing Summary

Kyoma showed us what can be done with D-Tunes and the future development that is still needed. Paul created 2 depth correlation XML files and uploaded them in D-Tunes. The first one worked perfectly and the results showed as expected in the CLV. The second one did not work because there was a misunderstanding on the format of the file. After some explanation from Kyoma, the upload worked fine. In the near future D-Tunes will have an interface to properly construct depth correlation files.

The USIO liked the implementation of the depth map method in D-Tunes. They are looking forward in seeing the full capability of D-Tunes once ready.

The STP at the last meeting in Bremen (July 11-13, 2005) recommends that there is a single IODP wide tool for depth correlation.

IODP Curation Management System (ICMS)

We took this opportunity while on the JR to continue the defining the ICMS requirements started in Edinburgh by the curators (John Firth, Walter Hale and Kasushi Kuriko) and later refined by John Firth.

The ICMS is needed for several reasons:

- IO's stores the core logging and sample information into their own existing databases using their own existing tools and their own database models. These different database models and tools are not fully compatible. JANUS is currently the only operational database that has been proven to work. Until J-CORES and ICMS are online, all IO's will have to send their logging data to the JANUS database.
- Curators are only aware of the content of their own core repositories and need to ask other curators or access other core repositories databases to view the content of each other.
- Sample requestors do not have a centralized IODP location to make a sample request and search what is available.
- Core redistribution geographically will mean that core logging information will need to be transferred from the original collecting database to the database where the core is stored.

Having an IODP wide ICMS will solve all these issues and make it easier for both curators and requestors to manage and request samples.

During our discussion on the JR, we started with John's version and Paul Foster took over and created a more complete draft document.

We had several meetings discussing the content of the document and made every effort to include all requests. By having database managers and developer onboard helped a lot in answering what is realistically possible to achieve.

There are 2 possibilities where the system would pull data from the 3 IO's database or the 3 IO's database would push the data using a yet to be determined format to the curation system. In order for the data to be always up to date on the curation system, we elected to have the push method as part to the requirement.

We had different opinions about having a single common tool for entering sample information. We eventually agreed on the following:

- There will be a central registry for sample request that everybody will use
- There will be a central registry for entering sample info based on common minimum data (probably XML based exchange format). That registry will be capable of receiving data using a common format via an upload method.

- Every IO's would be responsible to push the required common minimum data to the registry. The data would be pushed each time new data is entered or modified, ensuring that the curation system is always up to date.
- IO's will be responsible to do their own sampling using their own tool and will be required to upload their information to the central registry as new sample are created or old one modified.
- Sample done on core located in a repository different from the IO's that collected the data (e.g. Chikyu collected the core but it is stored at the GCP), will need to get the minimum sample information from the sample registry (download the information) and store it in their own database. Sampling will be done using the IO's own existing tools and the newly created information will then need to be uploaded back to the registry.

We finished a new draft version of the ICMS requirements onboard the JR.

IODP-MI created a mailing list for distributing the requirements documents internally to all IO's for discussion about the requirement. Two weeks for receiving comments and suggestions were given. Paul Foster would remain the main editor and try to add when possible any suggestions received in the mailing list. If there are disagreements about a suggestion, it would go back to the mailing list for further discussion. There will probably be a need for a second round of discussion with the new suggestions added.

After we all agree on the requirements, the specifications document will be created (how the system should work technically). A new mailing will be created with a few representative from each IO's .

The specifications document will be developed by a more limited number of participants from each IO's (developer, database managers, etc). This will also clarify once done the role of each IO in the development of the actual system.

IODP-MI will manage the effort with the collaboration from all IO's.

Other Discussions

Minimum Measurements

STP in July 2005, reviewed the IODP minimum measurements based on the model the DMCG presented to STP after the June 2005 Edinburgh meeting. This task is near completion and a formal IODP document is planned.

Lithology

The VCD and Lithology issue are closely related. CDEX proposed a standard for graphical representation of the Lithology. This will be distributed to all IO's for further discussion. There is a possibility that the topic be part of the agenda at the next STP meeting. STP in July 2005 made some recommendations about core descriptions in connection to images but nothing about standard lithology. IODP-MI will initiate the next step by starting with the CDEX proposal.

MicroPaleontology

It was suggested that there should be a workshop about paleontology dictionaries – should there be IODP-wide standard dictionaries of taxa, datums and zones, with well defined relationships between them, as implemented in the Janus database, or should the scientists on each cruise be free to create their own dictionaries, with no constraints between taxa, datums and zones, as is currently implemented in the J-CORES database. There is a need to plan a workshop or meeting inviting key people and selecting appropriate chair and co-chair. IODP-MI will take the lead in organizing and coordinating the workshop/meeting after discussion with the IO's. The workshop date would likely only occur early 2006.

ICMS Hosting

There were also some concerns about hosting the ICMS and future IPI. There is a need to identify, plan and find funding for secure server location where the systems can be managed and maintained that would be acceptable by all IO's. It would be preferable that the system be hosted by one of the IO's using their either existing or planned infrastructure. IODP-MI will look into the different possibilities.

Information Portal for IODP (IPI)

Bernard showed an example of geosciences metadata catalogue (Global Change Master Directory) in order for everybody to have an idea of what is planned. The suggestion is to first put metadata related to the Hole into the IPI. The Hole being the smallest geographical entity in the 2D plane, it is the perfect level to enter metadata about what has been measured. This implies that all measurements type that have been taken on either a Hole, Core, Section or Sample would have to be indicated as present in the metadata of a Hole. There would also be a need for the typical metadata such as contact info, geographical location etc. and a link to summary or actual data web pages showing up as URL in the metadata. The IO's would be responsible to provide the metadata using a common structure and content based on the ISO 19115.

IODP-MI will start working on the requirements for the IPI and on the IODP metadata that will underpin the system.

During the discussion there were suggestions that it would be simpler if we had only one database, but because of existing infrastructure and investments, this is not currently an achievable goal. Similarly Google was suggested as a possible tool for finding IODP data. Once the community is familiar with the IPI, we hope it would be specialized in providing a quick and one stop entry point for finding all DSDP, ODP and IODP data and related information. The technology for accessing distributed databases currently exists and is being used by a lot of geosciences organizations.

IODP-MI will take the lead in developing the requirements for the future IPI and the needed Hole metadata content and structure.

Action Items

Now that the J-CORES test is over, IODP-MI would like to see a short summary report from CDEX and how they plan to use the comments they received during the test cruise and what they think can be implemented.

There is great potential in further developing the J-CORES tools in collaboration with all the IO's and the IODP Curation Management System will be the first concrete collaboration effort.

Here is a list of action items:

- Brief reports from each IO's providing information about their experience in testing the J-CORES tools and the impact on their future development.
- CDEX will prioritize the comments they received and will assess how they can implement some of the suggestions based on their resources availability
- CDEX will release the J-CORES source code as soon as possible (March 2006?)
- VCD requirements based on IODP wide community needs
- IODP-MI will look into a second J-CORES test onboard the Chikyu with some of the tools that were not fully ready (D-Tunes, Microbiology) and maybe some updated one already tested
- IODP-MI will manage the ICMS development with collaboration from each IO's. Each IO will be responsible for some part of development.
 - a. Requirements document: Lead Paul Foster, all IO's participating
 - b. Specifications document: Lead Paul Foster, all IO's participating
 - c. Development: All IO's
 - d. Installation: To be discussed
- IODP-MI will look into the possibility of having a paleontology workshop/meeting in connection with STP recommendation.
- IODP-MI will look into the Lithology status.
- IODP-MI will develop the requirements for the future IPI and metadata standard.

For people who could not participate in the test, all individual comments will be available on the Data Management Coordination Group web site. An e-mail will be sent once all the files are uploaded.

Conclusion

The J-CORES test was successfully completed and achieved the primary objective of providing CDEX with some constructive comments and discussions about the tools they developed.

The testing cruise not only provided detailed useful comments for CDEX, but also allowed the USIO to discover what has been developed and how the tools fit with their own operation.

Many discussions were not only about the tools themselves but also about how the actual work flow is being handled and allowed CDEX, USIO and IODP-MI to exchanged ideas.

The tools were very stable compared to previous demonstration of their use. Most users were able to use the tools after the training with minimum help.

Some editing methods were frustrating to some users. The manuals were not needed most of the time but when needed, like for the VCD, it was discovered that there is a need for major editing and re-writing to become a useful help. The tools did what they were designed to do but did not always match what the users expected them to do or what the USIO actually does on the JR for their own work flow.

The VCD is the most complex tool. The participants quickly realized that this was a Core Summary tool and not as expected a Description tool per se. It does a good job at replacing the paper version of barrel sheet, not the publication version, but the information to make the decision on how to describe the core is not part of this VCD. Putting digital VCD information into a database is certainly a major achievement by J-CORES but more work is needed to fully meet the community requirements. Perhaps an IODP community wide VDC requirements documents should be developed.

For the VCD and CLV tools, there was a major concern about their performance with respect to the time it sometime took for processing information. Their refresh took too long because of the access to many different data and several graphics that needs to be drawn. The CLV has proved to be a very useful tool to immediately view the data after being entered in to J-CORES. Some limitation exists in providing publication quality output.

In general the USIO found the J-CORES database very clean and easy to work with for administrator. The log files from each tool provided an easy way to trace back problems to the database and fix them. The participants generally like the interfaces as being clean, functional and might consider using similar interfaces for their own development of future shipboard data tools. CDEX is planning to have the J-CORES source code available as open source by the end of March 2006. CDEX hope to have similar test on board

the Chikyu to be arranged for other untested modules and revised versions of the already tested ones.

CDEX will analyze comments they received and make appropriate action to improve the functionality of J-CORES.

During the cruise we also worked together in developing the first draft of the requirements for the future Curation Management System. This document has been distributed to all IO's for comments. The next step will also involve all IO's in writing the specification document that will explain how the system will work. The role of each IO in the actual development of the system will come clear in conjunction with the specification document.

There was a short discussion about the IPI and what we see to be the purpose and content. The drill Hole was presented as being the finest entity or granularity that would contain information (metadata) about all the type of measurement that has been done. IODP-MI will work on the metadata requirements after this cruise.

In conclusion this test was a success in both achieving the goals, and keeping good communication between the IO's and with IODP-MI and laid a solid foundation for the future collaboration and integration in IODP data management. Sharing the J-CORES code and developing the ICMS together will be a very good first step towards that goal.