Intergovernmental Oceanographic Commission
Reports of Meetings of Experts and Equivalent Bodies

IODE Steering Group for Ocean Teacher

Second Session

Southampton, UK, 29 April -1 May 2003

UNESCO

IOC/IODE-SG-OT-II
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English only

Abstract

The IODE Steering Group for Ocean Teacher was established to support the IODE Ocean Teacher Project. Ocean Teacher is the IODE training and resource tool for oceanographic data and information management and is used in all IODE data and information management capacity building activities. During its Second Session, the Steering Group reviewed the current status and drafted an expanded structure for the Resource Kit that will include all data and information reference material referenced in the training manual. The Steering Group assessed the progress of data and information training for the ODINAFRICA project and finalised arrangements for the final ODINAFRICA-II training workshops, review workshop and conference. The Group also assessed progress of the ODINCARSA project. The Group discussed the future priorities for Ocean Teacher and developed the goals and objectives for the Ocean Teacher project. Potential e-learning solutions for Ocean Teacher were also considered. The Group discussed the possibility of developing a a university curriculum on data and information management that will increase awareness amongst students for the importance of quality ocean data and information management.

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1. INTRODUCTION

The Session was opened on Tuesday 29 April at 09:30 by Mrs Pauline Simpson, host of the meeting. Mrs Simpson welcomed the participants to the Southampton Oceanography Centre.

The Technical Secretary for the meeting, Mr Greg Reed, outlined the objectives of the meeting and presented the provisional agenda for the meeting. The Group adopted the agenda.

Mr Reed informed the Steering Group of the meeting held the previous day (28 April) with the Bilko Steering Committee to discuss possible collaboration between Ocean Teacher and Bilko. Noting that the IODE Committee at its 17th session had requested the Steering Group for OceanTeacher (SG-OT) to develop modules on advanced ocean data and information management, covering delayed-mode as well as operational oceanographic data and an increasing number of requests for training in management of remotely sensed data it was decided to hold this joint meeting to explore possible synergies between the two products.

The discussions between the Bilko Steering Committee and SG-OT resulted in the development of a list of possible lessons that could be included in OceanTeacher. The topics to be addressed include: (i) conversion from level 2 to level 3, (ii) data formats (iii) geometric correction, (iv) re-sampling and re-gridding, and (v) data validation using in-situ data. This would require the development of a number of new Bilko lessons which could be used in IODE ocean data training activities. However this would require additional funding and it was agreed to investigate how this could be best achieved.

2. CURRENT STATUS OF OCEAN TEACHER

The current structure of Ocean Teacher comprises two components, (i) the Resource Kit, and (ii) the Training Manuals. The current focus of the Resource Kit is on data management only. The Kit is a resource tool ('encyclopaedia') for newly established Oceanographic Data Centres, designed to assist managers and staff members to acquire or recollect the skills to set up and run IODE centres. It contains a range of marine data management materials, including software, quality control and analysis strategies, training manuals, and relevant IOC documents. It provides a broad spectrum of background information on global data and information archiving activities, specifications for data storage in standard formats, and the software tools to perform many quality-control, sub-setting, and analysis procedures.

The Training Manuals have now been developed for both data management and information management. Two training manuals have been prepared for information management (Year 1 and Year 2) with a third manual under development. There are three data management training manuals – Year 1, Year 2 and a Data Short Course manual written for remedial workshops. In the case of the data management training manuals, all training material is referenced from the Resource Kit. There is no Resource Kit for information management yet.

The Group agreed that the content of the Resource Kit should be expanded to include the information management content material, which is currently embedded in the respective training manuals.

After some discussion, the Group agreed to an **expanded structure for the Resource Kit**:

1. Ocean Research and Monitoring
    - Challenges for Humanity
    - Global Programs
        - Science Plans

2. Data and Information Management Systems
    - Introduction
    - Ocean Data
        - ICSU/WDC
        - IOC/IODE
        - WMO/CBS
        - Major Programs Data Units
        - Satellite Agency Systems

- Marine Information
  - International (IAMSLIC, IFLA)
  - Regional (EURASLIC)
  - National
- Policies and Guidelines

3. Data and Information Concepts
   - Basic Concepts
   - Knowledge organization

4. Establishing a Data or Information Centre
   - Evaluating the need
   - Formulating a Business Plan

5. Data and Information Technology
   - Introduction
   - Computer Systems
   - Database Technology
   - Information Technology
   - The Internet (email)
   - Geographical Information Systems

6. Ocean Data Fundamentals
   - Introduction to Atmospheric and Oceanographic Data
   - Data Collection and Instrumentation
   - Oceanographic Primer
   - Quality Control
   - Data Formats

7. Operational Oceanography
   - Remote Sensing

8. Resource Exploitation / Finding Data and Information
   - Information Seeking
   - Resources in Ocean Science
   - Online resources
   - Offline resources

9. Building and Organising a Collection

10. Metadata
    - Introduction
    - MEDI
    - Library
    - Metadata Mappings/Crosswalks

11. Products and Services
    - Data Products
    - Research Support Services
    - Skills Training and User Education Techniques

12. Document Production

13. Managing Institutional Information

14. Building and maintaining the profile

15. Developing Connections

16. Continuous Professional Development

17. Software Toolbox

18. Glossary

19. List of Resources

The Group acknowledged the vast amount of work needed to restructure the Resource Kit and the completion of this activity would be dependent on available resource.

3. OCEANTEACHER USE IN ODINAFRICA AND ODINCARSA PROJECTS

3.1 ASSESSMENT RESULTS

The Steering Group discussed the results of the assessment exercise of both the data and information manager for the ODINAFRICA project.

Information Management. It was acknowledged that despite the organization of two training courses in 2001 and 2002 there were still substantial differences in competence between the participants. In addition it was noted with regret that several institutions had changed the information managers, thereby wasting the invested training effort. A few institutions had not sent trainees to one or even both training courses.

The SG-OT recalled that assessments had been undertaken on information technology, cataloguing and business plan development.

These had resulted in the following three groups:

- Insufficient
  - Cameroon
  - Madagascar (*)
  - Togo (*)
  - Gabon
  - Guinea
  - Morocco (*)
- Weak but remediable
  - Mauritania
  - Benin
  - Kenya (change of trainee)
  - Mauritius (change of trainee)
  - Comores
- Good
  - Tanzania
  - Tunisia
  - Seychelles
  - Nigeria
  - Ghana
  - South Africa
  - Senegal

(*) Note: these countries will be visited by Arame Keita (to Togo and Morocco) and Josette Confait (to Madagascar) for one-to-one INMAGIC training in May 2003. Their experience and

observations will be taken into consideration to leave these countries in the 'insufficient' category or move them to the 'Weak but remediable' category.

National Coordinators of trainees in the 'insufficient' category will be contacted by IOC to inform them of the problem and recommending to them that the trainee should not be invited for the upcoming training course, as the resource persons cannot see any benefit of further training and observing that their participation will only hamper progress of the other participants. National coordinators for such cases will also be recommended to investigate further action.

Data Management. The data management follow-up support provider, Dr. Murray Brown, reported that the remedial course organized in Accra, Ghana (14-18 April, 2003) had revealed that the individual weaknesses that had resulted from the data management assessment, were not necessarily caused by the trainees but by institutional problems that had hampered the trainees in putting into practice the knowledge acquired during the 2001 and 2002 training courses.

The Steering Group requested IOC to contact all national coordinators and strongly request them to do all the necessary to ensure full access to all resources made available by the project for data management (equipment, internet access) as the insufficient results of the data centres may result in exclusion of the data centres from the project and from future ODINAFRICA projects.

The data management follow-up support provider summarized the assessment results of data managers and identified the following countries as 'insufficient':

- Mozambique: since the departure of Mr. O. Sitoe, no replacement has been proposed by the national coordinator and no further information has been provided on progress;
- South Africa: no further information has been received from Mr. M. Van den Berg;
- Morocco: no specific data management trainee has been identified;
- Gabon: since the 2002 Limbe review and planning workshop no information has been received on a data management trainee. As such Gabon has received no data management training.

As the above cases cannot remedied in the remaining few months until the end of the project and these data centres (or at least the institutions hosting the facility that was to become a data centre) cannot provide ocean data management capability, the Steering Group recommended that the above data managers should not be invited for the 2003 training courses and other events, and requested IOC to inform the national coordinators accordingly.

3.2 REMEDIAL ACTIONS: OPTIONS AND STATUS

It was recommended to pair the more advanced and less advanced students at the September training course. The following pairings were proposed, taking into consideration as much as possible, the working language of the trainees:

Information Management

- Tunisia/Mozambique
- Mauritania/ Senegal
- Comores/ Seychelles
- Kenya/ Tanzania
- Mauritius/ South Africa
- Nigeria/ Benin or Ghana/ Benin

Total: 13 countries

Data Management. As already mentioned under 3.3 a remedial course was organized in Accra, Ghana (14-18 April, 2003) with participants from Ghana, Nigeria, Bénin, Guinée, and Côte d'Ivoire.. Further action was also described under 2.1.

The data management follow-up support provider, Dr. Murray Brown, will contact all data managers (except excluded group) requesting them to identify further needs (equipment, training,…) that will enable effective and efficient operation of the established NODC/DNA.

Follow-up support coordination. It was noted that whereas effective follow-up support was organized for the data management group through the contracting of Dr. Brown, the same had not been possible for information management due to the absence of an available expert.

Mrs Linda Pikula agreed to assume a coordinating role for help requests (that will be channelled to Bella Odendaal, Paul Nieuwenhuysen, Pauline Simpson or Murari Tapaswi). Mrs Pikula will provide personal assistance with regard to Business plan questions. Mika Odido and Peter Pissierssens will be kept informed of help desk consultations.

The SG-OT recommended contracting Ms Bella Odendaal for INMAGIC assistance.

It was further recommended to develop an assignment progress monitoring web page for the marine information managers, similar to the data management page developed by Dr Brown for this purpose.

3.3 ODINAFRICA 2003 EVENTS

Prof. Nieuwenhuysen recalled that LUC, during the Limbe review workshop (2002) had tentatively offered to host the final training courses and review workshop. However due to an international cultural event that will take place in Limburg, Belgium in September 2003, LUC regretfully had to withdraw its offer. VLIZ had subsequently considered hosting the events but had to decline due to the absence of suitable facilities in Oostende. IOC had then requested Prof. Nieuwenhuysen to host the training courses and had approached the Flemish Government to host the Review Workshop. At that time it was also suggested to organize a major event to highlight the successes of the ODINAFRICA-II project, back-to-back with the review workshop. The Flemish Government had agreed to host the two events and it was proposed to hold the 2003 review workshop on 8 and 9 September 2003 at the Markiesgebouw in the centre of Brussels. The event (Symposium) will be held on 10 September at the same venue.

Prof. Nieuwenhuysen informed the Steering Group that his institution (Free University of Brussels) would be able to host the two training courses (data management and information management). Some costs will need to be covered by the project.

In order to better assess the duration of the courses and technical requirements the Group then discussed the programme of the two courses:

Information Management Course. It was agreed that the MIM training course will be composed of 4 modules, and made recommendations for the lecturers:

- Cataloguing principles: 1.5 days: Murari Tapaswi or Jan Haspeslagh
- INMAGIC training: 1.5 days: Bella Odendaal
- Electronic resources: 1 day: Paul Nieuwenhuysen
- Discussion on progress and problems: 1 day (all)
- New material: continuous professional development, developing connections, marketing techniques

Total required days: 6

It was agreed to organize the MIM training course between Monday 1 September and Saturday 6 September 2003.

IOC will obtain the necessary logon details for access to online ASFA (CSA IDS).

IOC will provide valid serial numbers to enable installation of the INMAGIC software on the PCs before the end of July 2003.

Data Management Course. It was agreed that the Data Management course would be composed of:

- Student presentations outlining data centre achievements, products generated, national networking and problems encountered during the course of the project (3 days)
- Metadata training exercise using MEDI (1 day)

- Student requests (1 day)

2003 Review Workshop. The 2003 Review Workshop will be attended by the national coordinator, data managers and information managers.

The Steering Group recommended that each country should be invited to prepare a short presentation on both data management and information management achievements after three years of ODINAFRICA and that these should be presented by respectively the data managers and information managers. The presentations should be not longer than 10-15 minutes each and should focus on (i) results achieved; (ii) problems and their solution (if solved).

It was noted that course programmes have not yet included presentation skills. Accordingly it was decided that training material on presentation skills, as prepared by Prof. Nieuwenhuysen, would be distributed by email, together with a draft template for a powerpoint presentation. Participants will be requested to submit a draft presentation by the end of July for review by Mrs. Linda Pikula.

ODINAFRICA Symposium. The Steering Group was informed that the objective of the Symposium will be to demonstrate to the invitees (donor representatives, ambassadors of ODINAFRICA partner countries, press,…) the achievements of the ODINAFRICA project at the national, regional and global scale.

The Symposium will include attractive presentations by selected national coordinators (on eg. specific data or information products, on how the acquired capacity has assisted in coastal management, on raising awareness for the importance of the oceans and coastal areas,…), as well as exhibits (posters, software and other product demos,…).

It may also be considered for some of the resource persons to give a presentation on the global importance of ODINAFRICA.

The Symposium will be a one-day event on 10 September, organized at the Markiesgebouw. The Flanders Government will sponsor catering (coffee breaks and cocktail party).

Practical Arrangements for 2003 Events. It was requested that VLIZ will take care of hotel arrangements for all participants, and that Paul Nieuwenhuysen will provide a list of possible hotels in the area between VUB and Markiesgebouw.

Prof. Nieuwenhuysen will arrange for participants transport (airport-hotel-airport) and catering (including welcome reception). IOC will arrange a contract for the mentioned services.

3.4 ODINCARSA PLANNING 2003

Data Management. It was agreed that a regional 'train-the-trainer' course should be held for the group identified as 'advanced' as a result of the first data management training course and subsequent intersessional assignments. The participants for the 'train-the-trainer' course would come from Chile, Ecuador, Cuba, Colombia and Argentina. The 5-day course will be held in Cartegena, Colombia in late 2003 (possibly October-November). Once trained, this group would then be able to train fellow participants from the first data management training course in neighbouring countries. The issue of training requirements for the Caribbean members states of ODINCARSA was discussed. Whereas many of the South American countries had well established data centres, many of the Caribbean states and limited expertise and technical infrastructure for data management. It was agreed that these small island states required fundamental training in data management and that an individual course should be considered for the region. This could be held in 2004 if extra-budgetary funds were available.

Information Management. The Steering Group was informed that contracts are being arranged to develop a number of information products agreed upon during the First ODINCARSA Training Course (Mazatlan, Mexico, October 2002). In order to identify contractors Rodney Martinez, ODINCARSA coordinator, has been requested to contact relevant experts in the ODINCARSA region.

4. FUTURE PRIORITIES

4.1 REVISION OF OCEANTEACHER TERMS OF REFERENCE

The Group discussed the need for terms of reference for the OceanTeacher project. Whereas the Steering Group for Ocean Teacher has terms of reference, as defined by IODE-XVI (Recommendation IODE-XVI/7), there were no such terms of reference for the OceanTeacher Project. After some discussion, the Group prepared a mission statement and objectives for the OceanTeacher project.

The **mission** of the OceanTeacher Project is to provide in a single integrated system containing all the training resources for marine data management and marine information management needed by professional ocean data and information managers, as well as to provide ocean researchers and students the necessary knowledge and skills to contribute and exploit data and information resources and to interact effectively with their national oceanographic data and information centres.

In order to achieve this, OceanTeacher will focus on the following **objectives**:

- To define, create and manage a globally recognised training system in ocean data and information management;
- To support and continue development of the ocean data and information management training system by creating a "network of excellence" of recognised authorities and other resource entities;
- To identify and synthesise authoritative resources in ocean information management training that encompass all areas of marine information, including hard copy as well as computer- and Internet-based sources;
- To expand ocean information management training resources to include the applications of new technology and the global virtual information space;
- To identify and synthesise authoritative resources in ocean data management training that encompass all relevant disciplines, including related earth sciences useful for coastal zone research and conservation;
- To expand ocean management training resources to include operational and delayed-mode data, synoptic and climatological data, and in situ and remotely sensed data;
- To implement ocean data and information management training through the use of state-of–the-art distance and self-paced learning technologies.

To achieve these objectives, the OceanTeacher Project will implement the following activities:

- Identify and assemble existing training manuals, guidelines, documents and related ancillary materials;
- Author necessary documents, tutorials and other materials, as required, to supplement existing training materials;
- Establish advisory and review processes to guide in the continued improvement of the training system;
- Through the agency of advisory groups and other authorities, identify editors and authors for a systematic and continuous process of system improvement and expansion, as required;
- Identify, provide and support the use of state-of-the-art integrated library management system software, as well as supplemental tutorial materials that instruct student information managers in their proper use;
- Assist and train new information managers in the broad spectrum of library services that deal with identification, location, provision and documentation of all anticipated information resources in ocean sciences;
- Focus all information training and resource provision on the highest levels of technology integration, with particular reference to electronic object delivery;
- Identify, provide and support the use of state-of-the-art date management software;
- Identify and provide documentation for major marine data formats;
- Identify and assist users in obtaining major global, regional and national ocean-related datasets;
- Provide information and training in modern ocean data programs;
- Provide information and training in modern PC-based database management methods;
- Provide training in the creation of ocean data archives and products;

- Identify, evaluate and implement state-of-the-art software to integrate the ocean data and information management training system materials with testing, assignment, reference, and student status tracking subsystems;
- Migrate existing training materials, and add new materials as necessary, to the selected software system, creating the basis for modular training in selected "courses" of study.

4.2 DATA MANAGEMENT

The Steering Group recalled the request of the 17th session of IODE, which tasked the SG-OceanTeacher to develop modules on advanced ocean data and information management, and related technology, covering delayed-mode as well as operational oceanographic data. This will be a priority area for additional content for the Ocean Teacher Resource Kit. Additional resource material is required for the following:

Operational Oceanography. Continue to develop procedures for integrating operational data streams with delayed mode data; generation of products from operational data.

Remote Sensing. Develop a series of modules describing the fundamentals of satellite remote sensing that will include the fundamentals of ocean remote sensing, ocean remote sensing applications, managing ocean remote sensing data, and generation of ocean remote sensing products. This module may be developed in cooperation with Bilko.

The Committee on IODE, at its Seventeenth Session, also noted that, whereas OceanTeacher was now primarily aimed at, and used by developing countries, more attention should be given to 'continuous professional development' and as such, modules covering advanced data and information management should be developed.

4.3 INFORMATION MANAGEMENT

The Steering Group recommended the following new main areas for information management:

- e-science
- electronic material preservation and archival/ resource discovery
- document archaeology

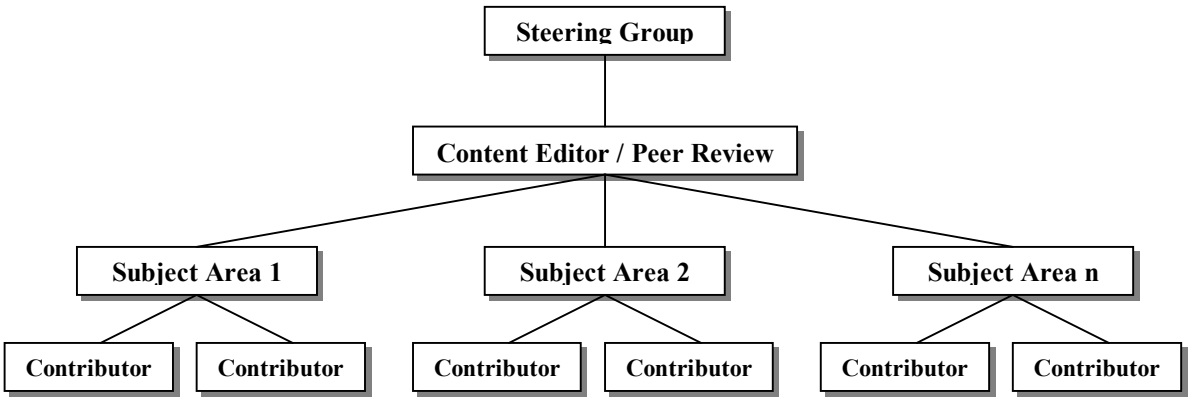
4.4 LINKAGE OCEANTEACHER/OCEANPORTAL

The Group discussed possible linkages between OceanTeacher and OceanPortal. Whereas OceanPortal is a high-level directory of Ocean Data and Information related web sites with the objective of helping scientists and other ocean experts in locating data and information, OceanTeacher is a capacity building tool that must be available for both on-line and off-line use. OceanPortal is only an on-line tool. It was agreed that that some of the lists of internet resources in the Resource Kit could be transferred to OceanPortal as most users of OceanTeacher have to be online to connect to these sites. The list of major servers currently in the Resource Kit would remain as they illustrate the breadth of resources available, and it is important that the students are aware of these resources.

5. CONTENT PROVISION AND MAINTENANCE

5.1 MANAGEMENT STRUCTURE

The Steering Group agreed on the following structure:



The Steering Group stressed the need for review of the existing material (as requested by IODE-XVII) as well as of new material.

It was recognized that the review of all existing material would be a huge task for which currently no financial resources are available. As requested by IODE-XVII the Group recommended that Member States be requested to task national relevant experts to assist with this task. It was further stressed that the review of existing material should be implemented without delay so the migration of material into the newly agreed structure (see Agenda Item 1) and possibly into an e-learning system can be implemented as well.

The Steering Group also strongly urged to include a feedback option into the new OceanTeacher web application to invite comments from users and relevant experts on a continuous basis.

5.2 CONTRACTING

The Steering Group recognized that funding would be required for:

- Programme manager
- Subject Area Editor(s)

6. E-LEARNING SOLUTIONS

The Steering Group noted that OceanTeacher had been developed as a browser-based training and self-study tool for ocean data and information management. Training courses have been designed based on the OceanTeacher series of training manuals for data and information management and have been supplemented with intersessional assignments. The Group agreed that a self-paced system of e-learning modules would improve the accessibility and increase the usage of Ocean Teacher.

The Group reviewed demonstrations of four e-learning products: WebCT, BlackBoard, Luvit, KEWL and Claroline. The first three of these products are commercial, the last two are open source solutions, and are designed for a 'traditional' university system where each lecturer has his/her own course to teach and thus has his/her own material.

It was noted that the OceanTeacher system is based upon a binary approach that uses both the Resource Kit to provide the reference material and the Training Manuals to provide the lessons which link to the Resource Kit. This dual approach makes OceanTeacher attractive to both students, who need the training course material, and experts, who simply want to refresh their knowledge or quick reference.

All the solutions reviewed are based on the concept of having a number of lecturers each developing and maintaining their courses within the distance learning system but not allowing for a binary system as is the case with the current OceanTeacher structure.

An e-learning solution for OceanTeacher will require a combined content management system and a distance learning system. Lecturers must be able to create and edit material. In addition there is a

need for a hierarchical management structure whereby authors can submit content that can be validated by an editor.

The Group agreed that the KEWL product contained many of the requirements for an e-learning solution for Ocean Teacher but did not allow the separation of content and lessons. It was agreed to contact the developers of KEWL at UWC to inform them of the requirement of Ocean Teacher and to determine if these additional needs could be incorporated into a future release of KEWL.

7. FUTURE OF OCEAN TEACHER

Noting the request of IODE-XVII for the SG-OT to prepare a draft curriculum that could be used in graduate courses in marine science/oceanography, the Group discussed the development of the proposed curriculum and how this could be submitted to, and adopted by national education programmes. It was also recalled that the Colour of Ocean Data Symposium held in Brussels in November 2003 highlighted the lack of awareness of marine data and information amongst the academic students in Europe.

The SG-OT agreed that OceanTeacher could be used as a mechanism to streamline ocean data and information management training in Europe, including training for university students. The Group discussed the possibility of developing a 'European OceanTeacher' project using the EU FP6 as a source of funding. The European OceanTeacher would concentrate on a comprehensive training programme for medium-level experienced data managers (as a continuous professional development programme), but it would also be able to provide basic and medium level training for students from developing countries (using the already existing modules of OceanTeacher). A third strand of the programme would be the development of a university curriculum on data and information management for marine science/oceanography courses.

Possible partners for the project were identified: Belgium (VLIZ, lead), UK (SOC), France (IFREMER), Greece (NCMR), USA (NOAA), South Africa (UWC), and IOC.

The Group identified the need for a questionnaire to be prepared and distributed to universities in Europe to determine whether courses already exist and to determine the need for an introductory course in ocean data and information management. This questionnaire should be distributed to all Marine Science faculties in Europe and should also include North African Mediterranean countries.

The Group agreed to the following schedule for the submission of the project proposal:

1. Distribute a survey to educational institutes (May 2003)
2. Prepare short description of project (end May 2003)
3. Finalise list of partners (end May 2003)
4. Meet with A. Edwards in Brussels to discuss submission (end June 2003)
5. Submit pre-registration description (end June 2003)
6. Prepare proposal (July, August, September 2003)
7. Submit full project proposal (end October 2003)

8. CLOSURE

The Second Session of the IODE Steering Group for Ocean Teacher was closed on Thursday 1 May at 17h00. The next session of the Steering Group would be dependent on the outcome of the EU project proposal. However all members of the Group would continue to interact via email.

ANNEX I

AGENDA

1. Current status of OceanTeacher
    - Data Management
    - Information Management (note lack of RK material)
    - Technology, management, maintenance, editors
2. OceanTeacher use in ODINAFRICA and ODINCARSA projects
    - Assessment results (after 2 training cycles for ODINAFRICA)
    - Asymmetric training model (slow, advanced): issues to consider
    - Remedial actions: options and status
    - Programme final cycle ODINAFRICA training
    - Programme ODINCARSA
    - Follow-up support
3. Future priorities (taking into consideration cooperation with GOOS and JCOMM; recommendations IODE-XVII)
    - Revision of Terms of Reference of OceanTeacher
    - Data Management
    - Information Management
    - Linkage OceanTeacher/OceanPortal
4. Content provision and maintenance
    - Establishment of Board of Editors
    - Remuneration of Editors?
    - OceanTeacher Management structure
5. e-Learning Solutions and migration
    - Needs assessment migration
    - Technology options and cost (WebCT, BlackBoard, Luvit, Claroline,...)
    - Demos
6. Future of OceanTeacher: funding opportunities
    - EU funding
7. Work plan and budget 2003-2004
8. Date and Place of next Session
9. Other business

ANNEX II

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