JCOMM Capacity Building Strategy 2007

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ANNEXES

1. INTRODUCTION

The WMO partnership with the Intergovernmental Oceanographic Commission of UNESCO (IOC) for JCOMM officially started in 1999, when the Joint WMO-IOC Technical Commission for Oceanograpgy and Marine Meteorology (JCOMM) was established.

JCOMM's vision to benefit the global community is long-term, far-reaching and innovative: JCOMM coordinates, and develops and recommends standards and procedures for, a fully integrated marine observing, data management and services system that uses state-of-the-art technologies and capabilities; is responsive to the evolving needs of all users of marine data and products; and includes an outreach programme to enhance the national capacity of all maritime countries. JCOMM aims to maximize the benefits for its Members/Member States in the projects, programmes and activities that it undertakes in their interest and that of the global community in general.

The long-term objectives of JCOMM are:

o To enhance the provision of marine meteorological and oceanographic services in support of the safety of navigation and safe operations at sea; contribute to risk management for ocean-based economic, commercial and industrial activities; contribute to the prevention and control of marine pollution, sustainable development of the marine environment, coastal area management and recreational activities, and in support of the safety of coastal habitation and activities; and to coordinate and enhance the provision of the data, information, products and services required to support climate research and the detection and prediction of climate variability;

o To coordinate the enhancement and long-term maintenance of an integrated global marine meteorological and oceanographic observing and data management system, containing both in situ and remote sensing components and including data communication facilities, as part of the Global Ocean Observing System (GOOS) and the World Weather Watch (WWW), and in support of the World Climate Programme (WCP), the World Climate Research Programme (WCRP), the Global Climate Observing System (GCOS), and other major WMO and IOC Programmes;

o To coordinate and regulate the maintenance and expansion of a comprehensive database of marine meteorological, oceanographic and sea ice data, in support of marine services, operational meteorology and oceanography and the WCP;

o To manage the evolution of an effective and efficient programme through the selective incorporation of advances in meteorological and oceanographic science and technology; and to work to ensure that all countries have the capacity to benefit from and contribute to these advances, and to contribute to the work of JCOMM in general.

As formally constituted, JCOMM is an intergovernmental body of experts, and is the major advisory body to the two parent Organizations (consisting of their Members/Member States, Governing Bodies and other subsidiary bodies and

programmes) on all technical aspects of operational marine meteorology and oceanography.

JCOMM has a current membership of approximately 250 experts, with most national delegations comprising roughly equal numbers of oceanographers and marine meteorologists. It is co-chaired by a meteorologist and an oceanographer, reflecting its integrated responsibilities for meteorological and oceanographic programmes. Under the overall direction of a Management Committee chaired by the co-presidents, the Commission is organized into three Programme Areas – (Observations, Data Management and Services), together with **two cross-cutting activities** (**capacity building** and satellite data requirements).

It is noted that at JCOMM-I (2000) the JCOMM structure included Capacity Building as a Programme Area in its own right. JCOMM-II decided that henceforth JCOMM capacity Building would be a cross-cutting theme that would be managed through three Capacity Building Rapporteurs (one for each Programme Area, i.e. Obervations, Data Management and Services) and a JCOMM Task Team on Resources. This decision was made by JCOMM-II through Resolution 5 (See Annex I). See also Figure 1.
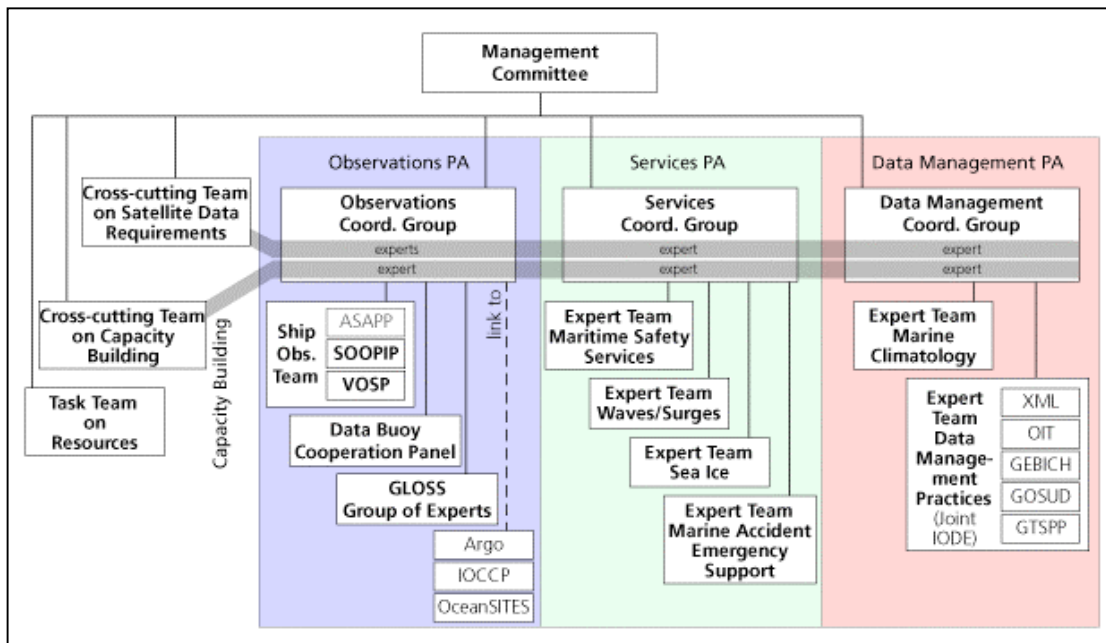

Figure 1: JCOMM structure

A first version of the JCOMM Capacity Building Strategy was published in 2001 as JCOMM Technical Report No. 11 (WMO/TD-No. 1063). In view of the decisions of JCOMM-II it was decided by the ???? Session of the Management Committee to revise the 2001 Document.

2. IOC AND WMO CAPACITY BUILDING PROGRAMMES

The JCOMM is jointly sponsored by the WMO and the IOC and therefore its Capacity Building programme must operate within, and draw upon, the overall principles of its governing bodies. The WMO and IOC should also assist with the development of partnerships with potential donor agencies and with links with other UN and other relevant regional and global organizations. The programme must also be compatible to, and work with, similar efforts in other WMO and IOC programmes, especially those with observational objectives, such as WWW, GOOS and GCOS. Finally, the JCOMM programme should seek partnerships with funding agencies to pursue mutual objectives in the development of capability and capacity and the improvement of the quality of life for all.

In 3.1 and 3.2 we will detail the existing capacity Building strategies, principles and mechanisms of IOC and WMO.

2.1 IOC's Capacity Building Strategy

The IOC Capacity Building Strategy was published in 2005 as part of "IOC Principles and Strategy for Capacity Building" (Document IOC/INF-1211; TEMA Report No. 1). An executive summary of this Document is available as Document IOC-XXIII/2 Annex 6.

> "*The **vision** of IOC capacity building is to establish networks of scientists, managers and other practioners working within regional and other cooperative mechanisms, to create demand-driven science, enhance protection of the marine environment, and provide operational oceanographic services for the benefit of all humanity*."

> "*The **mission** of (the) IOC Capacity Building (Section) is to help Member States, through international cooperative mechanisms, identify and address capacity-building needs to contribute to improved management and decision-making processes, sustainable development, and protection of the ocean and coasts*"

The growing gap between countries in their capacity to understand and use the ocean effectively and sustainably is of concern to IOC. The IOC recognizes that building capacity is a large, complex and long undertaking, and must be addressed along with partners. These partners must have the same mission and long-term goal of "sustainable" capacity-building. Some Principles are therefore needed to guide the formulation of the IOC Strategy for Capacity-Building and to be used in harmonizing its future Capacity-Building interventions and when collaborating with partners:

1. IOC Capacity-building interventions need to be imbedded in on-going regional projects that contribute directly to the larger IOC mandate:
   > *"to promote international cooperation on protection of the marine environment and preservation of human life and property in the ocean and coastal areas and work towards sustainable development"*

2. IOC Capacity-building programmes should be structured so that groups of regional scientists define and determine their own capacity-building programmes. They will:
   a. Identify areas for regional collaboration;
   b. Seek partners through clear enunciation of their requirements; and
   c. Seek funds in a "business" mode, by delivering products of public good.
3. Capacity-building interventions should be structured to have enduring long-term impacts. This requires interventions both in "know-why" and in "know-how".
4. Interventions should target development of both research and operational capabilities.
5. IOC Capacity-building needs to be approached in a holistic manner involving as appropriate decision-makers, directors of institutes, scientists, technicians, and society.
6. Interventions must be treated as investments. Appropriate contact must therefore be maintained with participants. Strategic partners, collaborating institutions, key decision makers, sponsors/funding organizations, and thought leaders in relevant scientific disciplines are also important elements in capacity-building and active contact needs to be maintained with all of them.
7. IOC capacity-building interventions must optimise limited resources and reduce/eliminate duplication and overlap. This will include liaising closely with other agencies that also provide capacity-building services, to improve coordination and increase efficiency. IOC will also ensure that it applies Best Practices in Capacity-Building to every intervention that it sponsors.
8. A majority of capacity-building initiatives will focus on developing regions.
9. IOC Capacity-Building Strategy will be focused and address prioritised needs of Member States within the regional/global framework. [The implication of this principle is that with li

The **Strategy for IOC Capacity Building** was summarized as follows:

1. ***Principles of Capacity-building*** enunciated earlier will guide IOC in its collaborative initiatives, since IOC can organize only a small fraction of needed interventions, and must necessarily work with partners.

2. ***Alignment and harmonization*** of capacity-building initiatives will be along IOC Main Themes. IOC has through Training, Education and Mutual Assistance [TEMA], developed three well-recognised and effective initiatives. These are:
   • Training-Through-Research (TTR) Programme;
   • IODE — Information and Ocean Data Exchange Programme; and
   • Harmful Algal Bloom (HAB) Programme.

   These and other capacity-building interventions conducted by the main themes of IOC will be better aligned with the Principles of Capacity-building.

3. ***Regional projects addressing key regional concerns*** will be the primary vehicles for regional capacity building. The key step will be to identify one or more regional projects [including regional programmes of UN agencies], which the IOC regional entities [sub-commissions and project offices] would be best placed to do.

Such regional entities provide an efficient and targeted route to identify, organize, and follow-up capacity-building needs of each region within the context of the governance structure of the IOC.

These entities can also interact with regional groups who wish to present their programmes to the IOC Assembly following relevant Rules of Procedure. Such presentations will encourage inter-regional collaboration and exchange of best practices.

4. ***Capacity-Building Pilot Programmes*** would follow the identification of suitable regional projects. IOC will arrange:
   - Leadership–innovation programmes for heads of academia and research organizations;
   - Team building programmes for groups of project scientists; and
   - Facilitators to assist in drafting Capacity-building Pilot proposals for external funding. Proposals should address objectives of the regional projects and be:
     - o structured to create capabilities (short-term training and longer term education/research programmes);
     - o formulated as 'Business' proposals aligned to Principles of Capacity-building.

5. ***Available operational products***, remote sensing data and numerical model outputs will be targeted in the first phase in close partnership with GOOS, JCOMM, COOP, CEOS and other organizations. This forms the 'know-how' part of capacity-building.

6. ***Education and research programmes*** are acknowledged to create long-term impacts. Capacity-building must be tackled at this 'know-why' scale to become "sustainable". IOC schemes, present and proposed, should be used when needed.

   Distance education and international courses
   - Ocean Teacher Internet model for self-learning, and HAB training Programme;
   - International governance training programmes of International Ocean Institute; and
   - Regional institute dedicated to marine sciences. Such an institute needs to be created, based either on the UNU, Tokyo or ICTP, Trieste.

   UNESCO-IOC Chairs
   - Chairs can promote synergy between research institutes, operational centres and industries. Additional Chairs could be developed based on a critical assessment.
   - Chairs can mentor young doctoral students and use UNESCO's Partnership and Fellowship programmes, and IOC Innovative Coastal Research Scheme.

   Research Initiatives

- Inviting Eminent Visiting Researchers. These will spend sabbatical time pursuing research in a region. [This scheme is presently under construction].
- Open Ocean TTR opportunities. Further opportunistic replications for TTR such as the first Asian TTR on-board the RV Marion Dufresne, must be sought.
- Coastal Ocean TTR opportunities. Present TTR must be replicated into a Coastal TTR model-training students in traditional science-at-sea techniques.

Travel and Study Grants
These will continue supporting the concept of mobility, albeit within more defined programme areas of the Capacity-Building Pilot programmes.

7. ***Regional Networks of scientists and other practitioners*** creating demand-driven science and operational products is stated to be the long-term vision. As regional networks raise their capabilities they will better be able to meet new responsibilities. This will require creation of new facilities, housed in centres real or virtual, that we call Regional Resources Hubs [RRH].
   - Real-time satellite data and high-end computational power will be important facilities in these RRHs which should be accessible to local scientists, attract expatriate regional scientists, and showcase ocean science capability to deliver products of tangible worth.
   - RRHs should be structured to be financially autonomous, and benefit from GOOS experiences and relevant elements of operational centres.
   - RRHs should also catalyse interactions between universities and research institutes.

   In this way, capacity-building would enable creation of cutting-edge operational products and also support innovative research.

8. ***Country-specific programmes*** are necessary since most decision-making in ocean sciences and management takes place at the national level. Collaboration is most active between countries of comparable capacity, and reducing disparities will go a long way in improving regional collaboration. Some initiatives to improve capacity are:

   Capacity-building through projects of national importance
   Capacity-building programmes often lack sustainability, for a variety of reasons including low national priority, lack of long-term governmental commitment, and limited support when funding levels decrease. Externally funded projects where:
   - A national concern defined by recipient government is being addressed;
   - Government is the implementing agency, with decision power at all levels;
   - Government commits financial resources for the continuation of the programme;
   - Expertise for continuation of project needs to be built up within the country; are projects through which IOC can assist marine scientists to actively participate.

   University-research institute-industry partnerships

These sectors create educated manpower, new knowledge, and wealth, and in partnership are best suited to successfully address marine issues of national relevance. IOC will facilitate such partnerships through its regional offices, and IOC Chairs, by engaging with heads of organizations in innovative leadership programmes. IOC will foster awareness of the advantages of partnerships in solving national issues, whilst simultaneously strengthening institutional structures.

Mutual Assistance and Technology Transfer
Within the context of Agenda 21, technology transfer needs to increase significantly. This must be addressed in ways that benefit both users and manufacturers, enrolling instrumentation manufacturers and marine information service providers as active partners in transfer of technology. Countries will be encouraged to acquire low-cost technologies and partner in emerging technologies that need testing in a variety of oceanographic conditions. The work of the IOC Group of Experts on the Law of the Sea (IOC/ABE-LOS) must be widely advertised to assist countries improve their legal frameworks in dealing with ocean matters and international concerns, especially in marine scientific research and marine technology.

9. ***Partners and programmes*** are critical elements in the Strategy for Capacity-building, without which the IOC will be unable to respond to the mandate of its Member States.

Partners
A rich and diverse source of expertise exists in the many sectors of UNESCO and in-house linkages should be the first step in searching for capacity-building partners. Numerous other institutional, international and intergovernmental partners can complement IOC capacity-building efforts, help it conduct more efficient programmes, and assist it address a range of associated needs outside the domain of competence of IOC.

- WMO runs a Voluntary Cooperation Programme (VCP) initially focused on implementing World Weather Watch (WWW), and providing participating countries with clear benefits. An IOC VCP programme could similarly focus initially on the implementation of GOOS.
- JCOMM (Joint Technical Commission for Oceanography and Marine Meteorology) was created by WMO and IOC to better harmonize their activities and reduce administrative and bureaucratic hindrances to their cooperation.
- JCOMM and GOOS have merged their capacity-building programmes and IOC bears a natural responsibility in coordinating and collaborating with this joint activity.
- UNEP-GRID, Arendal is undertaking Continental Shelf Delineation that calls for IOC participation through IODE. This represents an opportunity for significant capacity-building activities.
- Other UN bodies, notably UNDP, UNEP, ITSU and ISDR have components of IOC interest such as executing agency status for GEF projects, Regional Seas programme, and risk reduction against marine hazards, respectively.

- GOOS Regional Alliances (GRA) are regional entities, established with support of Member States, and natural partners in regionally conducting IOC Capacity-building interventions for operational products.
- Committee on Earth Observing System (CEOS) has a programme on establishing access to real-time satellite data for developing regions. Regional Resources Hubs need high-speed data links and will depend on CEOS/UNDP for their needs.
- Group on Earth Observations (GEO) is an emerging process in which IOC is actively participating. GEO has identified capacity-building as an essential element in the Global Earth Observation System of Systems [GEOSS] making it a natural partner as the Principles of Capacity-Building of IOC and those of GEOSS are similar in many respects.
- International Human Dimension Programme (IHDP) is an international, interdisciplinary, non-governmental science programme dedicated to promoting and coordinating research. Its aims are to describe, analyse and understand the human dimensions of global environmental change. Its programme is designed around its three main objectives of research, capacity building and networking.

Besides the above, partnerships with non-governmental organizations will be sought, as they inject new ideas, competence and energy. NGOs also create new constituencies, and promote new approaches.

Programmes
- GODAE and related projects (e.g. the European Mercator) are Pilot Projects for data assimilation into operational oceanographic models and products. GODAE has received expressions of interests in educating scientists in the use of new data, products, and model outputs and predictions, including applications to coastal regions. Important avenues exist for collaboration in capacity-building and in initiating cooperative pilot projects.
- Global Marine Assessment (GMA) Programme, still in its initial stages of definition, could be the next major programme requiring active participation of Member States, and become a vehicle through which future capacity-building activities can be channeled.

10. ***Information, Communication and Awareness*** Raising are important activities in fostering a climate for capacity-building. A website with information on IOC capacity-building programmes, and information on items of interest to the community, will used to catalyze and facilitate regional networks. The website will also serve as a virtual office for IOC regional entities to exchange information, ideas, and best practices.

Awareness Raising is an important aspect in sustainable capacity-building from life-saving information through risk reduction from marine hazards, to maintaining sustainable livelihoods, to gaining economic benefits from oceanic resources.
- Awareness in ocean matters must be raised in policy/decision-makers, professionals, coastal communities, students and society at large, as it creates the environment to support capacity-building efforts at the professional level.

- Raising awareness within the decision-making establishment is critical for IOC efforts in interfacing science with society. Thus the use of relatively simple, computationally inexpensive models, that allow country/regional specialists use local data to run scenarios before decision-taking, will strengthen the case to political leaders of the importance for capacity-building activities.
- Policy makers should be invited to concluding sessions of IOC-sponsored global and regional workshops, to hear summaries of deliberations and be informed of issues of importance and products that are directly useful to the policy making process.
- Creating community awareness of the variety of products available to address regional/national needs and ways to access these products is an initial and important step in 'sustainable' capacity-building. The next steps build capacities to effectively use these products. The last steps are to make widely known, to all levels of society, the additional benefits that accrue from contributing to ocean data, products and services.
- Student awareness can interest bright minds to take up a career in science. It starts at school with enthusiastic teachers who have access to interesting teaching material. Local science museums, aquaria and the media can also play important roles in this process. The IOC will seek ways to partner such organizations in order to raise the level of awareness in the student community. UNESCO runs several imaginative school-level educational programmes and Capacity-building will use these in-house capabilities for awareness raising and basic knowledge of the ocean.

11. *Funding Resources* are critical to implementation and three modes of raising funds for Capacity-building activities are proposed.
- Primary Funding Strategy: Regional scientists drafting Capacity-Building Pilot proposals to build capacity for important regional projects that address regional concerns. Facilitators will be provided to help them formulate proposals that seek funds in a "Business" mode with clear public-good products identified as deliverables, performance indicators and timelines. It will be aimed at sponsors and collaborators and be pitched to leave better regional capacity than before the project start. Contact should always be maintained with the primary sponsor while building new bilateral relationships with other sponsors.
- In-country funding and industrial funding Strategies: IOC will work with regional scientists to identify products and services important for decision-makers, and through these demonstrate to national governments the importance of in-country support to capacity-building.
- Funding from industrial and commercial sources will also be sought, when compatible with the societal and environmental goals of UNESCO and its IOC. Organizations that attract such funds are able to offer their industrial sponsors the advantage of tax-deductions based on their contributions. UNESCO cannot presently offer this facility and a study has to be initiated to develop these concepts further, defining methods that will be in-line with in-house auditing procedures.
- IOC Trust Funds: This avenue can be used to fund special Capacity-building projects, not in the mode of a 'central funding agency' but to respond in those cases where the most effective response is from a

central point before it can become regional. IOC needs adequate resources to follow opportunities that occur between sessions, allowing prompt responses and visibility and to maintain leadership in ocean matters.

- The possibilities of diversifying funding sources for capacity building activities beyond traditional donor States will be actively explored using the experiences of GOOS and JCOMM. IOC can further enhance its fund-raising effectiveness by enrolling persons of eminence, influential scientists and decision-makers to suggest innovative means of financial support.

12. ***Performance Indicators in evaluating Capacity-Building initiatives*** will be an integral part of capacity-building interventions. In line with GOOS and JCOMM Capacity-building reports, this Strategy proposes evaluations to strengthen learning and performance of project participants and provide information to sponsors, government bodies, and general public about the results and effectiveness of projects. Evaluations are also necessary to present a persuasive case to funding agencies.

The Results-Based Management methodology adopted by UNESCO is a process where each project is required to have a hierarchy of objectives or intended goals that taken together produce higher order objectives. This requires that action-goals, together with clear purpose-statements and the definition of anticipated results, be spelt out and agreed to at the commencement of each cycle. Through this process, results can be quantified and the effectiveness of the Capacity-building initiatives can be gauged.

IOC Capacity-building evaluation methodology must go beyond evaluating Capacity-Building interventions that it conducts itself, since IOC Capacity-Building section has the further responsibility of harmonizing capacity-building activities of other Main Lines of Action of IOC. Additionally it must also evaluate the effectiveness of joint Capacity-Building ventures with its partners. Accordingly, its evaluation frame needs to have a broad remit. A consultancy on Best Practices of Capacity-building in IOC has after considering various aspects arrived at a three-tier mechanism to assess Capacity-building.

At the highest level, the performance indicators would be overarching and would provide an indication of the collective IOC capacity-building performance. Primary performance indicators should address IOC management level on the following issues:
- Identification and prioritisation of capacity-building needs.
- Regional alignment especially through continued extra-budgetary support.
- Strategic Plan for Capacity-building approved by Assembly.
- An Implementation and Business Plan for Capacity-building.
- Programme delivery through periodic evaluations and feedback.
- Resources growth indicating commitment to the Capacity-building process.

- Strategic Relationships support to Capacity-building programmes and interventions.

The second tier of performance indicators would be at the regional level. Primary performance indicators should address regional entities on the following issues:
- Identification and prioritisation of capacity-building needs and consequences of not meeting these.
- Implementation and Business Plan approved by Assembly.
- Programme/project/intervention delivery based on objectives, milestones and performance indicators and comprehensive feedback.
- Cost/resource control.
- Development of products in response to specific needs of regional members.
- Cost-benefit analysis investment and impact.
- Current database on participants and programme activities
- Capture and Dissemination of Learning.
- The third tier of performance indicators would be at the operational project/intervention level. Primary performance indicators should address project leaders on the following issues:
- Clearly defined Project/Activity plans are approved.
- Capture and publication of outputs/results.
- Technology/Capacity Transfer evaluation reports.
- Participant/beneficiary audit and evaluation from each participant on process, content and service orientation of key role players involved in the intervention.

It is conceivable that all the above performance indicators may be met without actually having a meaningful and sustainable impact. Therefore there is serious merit in considering whether an additional performance indicator, which focuses on the protection and health of the ocean and coastal zones, should be included. In the final analysis, directly or indirectly, all IOC capacity building programs/interventions should contribute to the improved protection and health of the ocean and coastal zones. Therefore whilst capacity building is not the only influencing variable, there should be a causal relationship between the health of the ocean and coastal zones and IOC capacity building programs/interventions. A strategic performance indicator of this nature should at least be included at the most senior level within IOC.

The IOC Capacity Building Strategy has subsequently started implementation in 2006 with emphasis on "self-driven" capacity development, with the primary goal of empowering developing countries for the sustainable use of their coastal and ocean resources. In a first phase the focus is on the institution level, on enhancing leadership skills of directors. Implementation has begun in the Western Indian Ocean region, followed by the Caribbean and Latin American region and other IOC regions. Capacity development at the individual level, through training for technical skills, will be conducted in a second phase, a third phase will focus on awareness of marine issues and science-based solutions at the societal level. More information is available on http://ioc.unesco.org/tema/2006-strategy.htm

2.2 WMO's Capacity Building Strategy

One of the primary aims of WMO, as laid down in its Convention, is to encourage training in meteorology and operational hydrology, and to assist in coordinating the international aspects of such training. In this connection, the **Education and Training Programme (ETRP)** is a WMO Major Programme, the purpose of which is to assist Members' in particular developing countries and countries with economies in transition, in obtaining personnel specially educated and trained to internationally agreed standards in order to carry out the activities and operations of NMHSs required at the global, regional and national levels for the effective provision of meteorological and hydrological services in support of sustainable development of Member countries.

Overall objectives:
(source: http://www.wmo.int/pages/prog/etr/goals_and_objectives.html)

- To ensure the availability of adequately trained staff to meet Members' responsibilities for providing meteorological, hydrological and related information and services;
- To promote capacity building by assisting NMHSs in the attainment of an appropriate level of self-sufficiency in meeting their training needs and in developing their human resources;
- To promote and strengthen the exchange of training knowledge, resources and expertise between Members and WMO Regional Training Centres (RTCs) making particular use of relevant new and emerging technologies and techniques;
- To promote high-quality continuing education in meteorology, climatology, hydrology and related disciplines so as to keep Members' relevant staff up-to-date with the latest scientific advances and technological innovations, and to provide the competence and skills needed in additional fields, such as communication with users; and
- To assist in the education of the public, government and other interested parties about the socio-economic benefits of meteorological, hydrological, oceanographic and related services.

ETRP is implemented under the coordination and guidance of the Executive Council Panel of Experts on Education and Training (EC Panel: see more on http://www.wmo.int/pages/prog/etr/ecpaneltor.html) which serves as an advisory body on all aspects of technical and scientific education and training in meteorology and operational hydrology.

Coordination:

- ETRP is implemented under the coordination and guidance of the Executive Council Panel of Experts on Education and Training (EC Panel) which serves as an advisory body on all aspects of technical and scientific education and training in meteorology and operational hydrology.

- Collaboration and cooperation are being promoted with education-related programmes of other organization. A Special Partnership is maintained with the

Standing Conference of the Heads of Training Institutions of National Meteorological Services (SCHOTI).

- ETRP is managed by the Education and Training Department (ETR) in the WMO Secretariat. A Training Management Team (TMT) was recently established for the cross Programme coordination of all training activites.

Main activities:

- Regular worldwide surveys of Members' training needs, requirements and opportunities;

- Monitoring and support to the functioning of a network of 23 designated WMO RTCs which play a key role in education and training for Members,

- Organizing/co-sponsorship of training courses, workshops and seminars;

- Preparation and dissemination of training materials and running of a Training Library including a Virtual Training Library;

- Provision of long-term and short-term fellowships financed from the WMO Voluntary Cooperation Programme (VCP), the WMO Regular Budget, Trust Funds and UNDP Projects;

- Support to School and Popular Meteorological, Hydrological and Oceanographic Education;

- Collaboration and cooperation with partners including other interested International Organizations, Institutions and Non-governmental organizations

WMO implements its Capacity Building Programme through several mechanisms:

- A **global network of national training institutions** that provide training for meteorologists (see http://192.91.247.60/etr/aspscripts/search_country_n.asp)

- **The WMO Network of Regional Training Centers and Components**. There are currently 31 centres: South America (6), Europe (8), Asia (7) and Africa (10) - Criteria for the recognition of WMO regional training centres have been established and are attached as Annex II. In addition guidelines on the practical application of the EC criteria have been published (http://www.wmo.int/pages/prog/etr/documents/guidelineonthepracticalrecognition.doc)

- **Fellowships:** The purpose of the WMO Fellowship Programme is to enable the fellowship holders to derive from their training the knowledge and professional competence which will increase their ability to make essential contribution to enhancing the capabilities of the National Meteorological and Hydrological Services (NMHS) and enable them to participate more actively in the economic and social development of their countries.

The fellowships granted by WMO are for studies or training in meteorology and hydrology at universities or training institutes in countries where facilities are available. Special consideration is given to requests for WMO fellowships for training at one of the twenty-three WMO Regional Training Centres (RTCs). As fellowships are awarded only at the request of the candidate's government, the candidatures must be endorsed by the Permanent Representative of the candidate's country with WMO. Applications from individuals are not accepted.

The Programme is cross-cutting and constitutes an integral part of each WMO Scientific Programme. The planning and management of fellowships are therefore closely coordinated through the WMO Fellowships Committee and with the staff of the Scientific Programmes concerned. (more information is available on http://www.wmo.int/pages/prog/etr/fellowship_en.html)

- **Publications:** ETR Online Training Publications (http://www.wmo.int/pages/prog/etr/onlinetrainingpublications.html) and WMO Catalogue of Publications

- **Distance learning courses: MetEd (Meteorology Education and Training):** The WMO ETRP doesn't provide standalone distance education courses or programs. However a number of organisations such as COMET (Cooperative Program for Operational Meteorology, Education and Training), EUMETCAL (The European Virtual Organisation for Meteorological Training), EUMeTrain (EUMETSAT funded international project dedicated to the development of training material and training methods for satellite meteorology) and CAeM (WMO Commission for Aeronautical Meteorology) all make training material available online. The most extensive range of material is on the COMET website under the banner of MetEd. MetEd distance learning courses consist of a selection of modules in a particular area of interest. When all modules in a course have been completed, a printable course completion certificate is offered. The MetEd (Meteorology Education and Training) Website was established to provide education and training resources to benefit the operational forecaster community, university atmospheric scientists and students, and anyone interested in learning more deeply about meteorology and weather forecasting topics. The site houses online learning materials, as well as information on other training and education activities, such as classroom courses and teletraining, and links to other related resources.
  - MetEd link: http://www.meted.ucar.edu
  - EUMETCAL: http://www.eumetcal.org
  - EUMETRAIN http://www.eumetrain.org.uk and
  - CAeM (WMO Commission for Aeronautical Meteorology - http://www.caem.wmo.int/moodle

  Reference is made also to the WMO Virtual Laboratory (http://www.wmo.ch/pages/prog/sat/CGMS/CGMS_virtuallab.html). The Virtual Laboratory for Satellite Training and Data Utilization (VL) has been established to maximize the exploitation of satellite data across the globe. It is a collaborative effort joining the major operational satellite operators across the globe with WMO "centers of excellence" in satellite meteorology. Those "centers of excellence" serve as the satellite-focused training resource for WMO Members.

3. JCOMM CAPACITY BUILDING STRATEGY

3.1 JCOMM CB VISION STATEMENT

"*The JCOMM Capacity Building Strategy, through training, transfer of technology and provision of equipment, will empower all countries to become equitably involved in the implementation of JCOMM programmes and to share in the benefits produced.*"

3.2 JCOMM CB STRATEGY ELEMENTS

Based upon the strategy elements of IOC and WMO the JCOMM Capacity Building strategy shall have the following elements:

(i)   JCOMM Capacity Building initiatives will respond to the needs of the three Programme Areas (Observations, Data Management and Services);

(ii)   JCOMM Capacity Building activities should involve national partners from both JCOMM themes, i.e. oceanography (IOC) and meteorology (WMO) so the complementary and "symbiotic" benefits of JCOMM are clearly demonstrated;

(iii)   JCOMM Capacity Building initiatives will be self-driven by the participating Member States/ Members, i.e. by operational programmes and projects implemented at the national level and serving national needs as a first priority;

(iv)   JCOMM Capacity Building initiatives need to underpin the implementation at national, regional and global scale of the long-term objectives of JCOMM, namely:

        a. To enhance the provision of marine meteorological and oceanographic services in support of the safety of navigation and safe operations at sea; contribute to risk management for ocean-based economic, commercial and industrial activities; contribute to the prevention and control of marine pollution, sustainable development of the marine environment, coastal area management and recreational activities, and in support of the safety of coastal habitation and activities; and to coordinate and enhance the provision of the data, information, products and services required to support climate research and the detection and prediction of climate variability;

        b. To coordinate the enhancement and long-term maintenance of an integrated global marine meteorological and oceanographic observing and data management system, containing both in situ and remote sensing components and including data communication facilities, as

part of the Global Ocean Observing System (GOOS) and the World Weather Watch (WWW), and in support of the World Climate Programme (WCP), the World Climate Research Programme (WCRP), the Global Climate Observing System (GCOS), and other major WMO and IOC Programmes;

c. To coordinate and regulate the maintenance and expansion of a comprehensive database of marine meteorological, oceanographic and sea ice data, in support of marine services, operational meteorology and oceanography and the WCP;

d. To manage the evolution of an effective and efficient programme through the selective incorporation of advances in meteorological and oceanographic science and technology; and to work to ensure that all countries have the capacity to benefit from and contribute to these advances, and to contribute to the work of JCOMM in general.

(iv) JOMMM Capacity Building will focus not only on developing capacity in developing countries and regions, but also on continuous professional development;

(v) JCOMM Capacity Building will aim, where possible, for a "train the trainer" approach to counter staff turnover/brain drain problems;

(vi) At the regional level, JCOMM Capacity Building will develop programmes and projects that follow the **ODIN strategy**, developed by IOC/IODE, which is based upon the provision of infrastructure, training and operational support, the promotion of inter-institutional and inter-personal networking, the sharing of information and data, and the creation of awareness at all levels of stakeholder communities;

(vii) At the regional level, JCOMM Capacity Building will develop, preferably, medium to long-term programmes and projects that will result in national structural and policy embedded capacity that can be sustained by national funding sources;

(viii) JCOMM Capacity Building activities shall aim for national and regional leadership;

(ix) Partners supporting JCOMM Capacity Building initiatives shall underwrite the self-driven nature of the JCOMM Capacity Building strategy and principles;

(x) Creation of awareness in the minds of the public and policy makers is essential for raising national and international support;

(xi) JCOMM Capacity Building activities as well as the entire programme will be reviewed every two years, prior to a Session of JCOMM.

3.3 SWOT ANALYSIS OF THE STRATEGY

A SWOT (Strengths, Weaknesses, Opportunities (external conditions that help achieving the objective) and Threats (external conditions that impede achieving the objective) analysis will need to be starting from the desired end objective(s) of JCOMM Capacity Building Strategy. [needs more work on table]

	Helpful (to achieving the objective)	Harmful (to achieving the objective)
Internal Origin	**STRENGHTS** • Proven success of ODIN approach • Experience with distance learning methodology	**WEAKNESSES** • Staff turnover in national institutions • Lack of resource persons able/willing to participate • Insufficient interaction between oceano and meteo communities at national level
External Origin	**OPPORTUNITIES** • Participation of JCOMM CB programmes in funded or emerging programmes (UNDO, GEO, NEPAD, …)	**THREATS** • Insufficient commitment of national government to sustain effort • Lack of donors to support CB programmes

4. IMPLEMENTING THE STRATEGY

4.1 METHODS AND TOOLS

The Strategy will be implemented using a wide variety of methods, tools and resources that are currently available within IOC and WMO, or which will need to be developed by JCOMM and its parent bodies.

4.1.1 Training Courses

A traditional mechanism for transfer of capacity is the training course. This will also be the case for JCOMM's capacity building activities. Each JCOMM capacity building activity (programme, project) should include a training component. The project document should contain a clear statement on what expertise needs to be built. Based upon this information training activities will be planned.

In this regard it is recommended that an **informal Working Group** be established within JCOMM that will be tasked with the scoping of required training activities. This Group should be composed of a sufficient number of experts with expertise in the Programme Area subject areas, as well as experts involved in WMO (e.g. ETRP, MetEd,…) and IOC (TEMA, OceanTeacher,…) training and capacity building programmes.

The Group will scope the programme of each requested course and also identify suitable resource persons. In this regard it is recommended that JCOMM establishes a roster of experts who can be called upon as resource persons for JCOMM training activities.

Courses should we well prepared:
- in preparation for a course all materials should be entered into OceanTeacher (which has been established as a JCOMM/IODE training tool: see 4.1.2) Digital Library;
- in preparation for a course all training materials should be entered into the OceanTeacher Course management system;
- courses should have a lecture segment, an exercises segment as well as a post-lecture component whereby the resource person(s) will provide interactive support to the trainees after they have returned home.

Preperation of courses should be close coordinated with the OceanTeacher Chief Editor. Training materials can be entered into OceanTeacher by the resource persons. Easy to use instructions on how to enter/edit material in OceanTeacher (Digital Library and Course management system) will be developed and made available to all resource persons through the OceanTeacher and/or JCOMM web sites.

A traditional problem with training courses is that only one or two students from each participating country can be trained. Due to staff turnover the impact of the training course is sometimes annihilated. The JCOMM Capacity Building strategy should

therefore aim for a "train the trainer" approach. To assist with this, specific methodology should be applied. One such method will be to record all lectures and make them available on-line through the OceanTeacher web site. Guidance needs to be provided to trainees of "train the trainer" courses on how to utilize OceanTeacher in combination with the video lectures to replicate training courses in their home country.

An important consideration for the training materials is their quality. The selection process for resource persons is therefore an important issue.

Another important consideration for the training programme of JCOMM will be consistency: although there may be some variations in content lectured by resource persons, it is important that training courses covering identical topics use the same materials (see also 4.1.2 and 4.1.3).

4.1.2 Training Tools

As already mentioned in 4.1.1 OceanTeacher has been identified as the suitable tool for the management of JCOMM-related knowledge and training materials. OceanTeacher (http://www.oceanteacher.org) is a training tool that was developed by the IOC's International Oceanographic Data and Information Exchange (IOD) programme.

OceanTeacher is comprised of three components:

- o **The OceanTeacher Digital Library**

  The OceanTeacher Digital Library contains a range of marine data-management and information-management materials, including software, quality control and analysis strategies, training manuals, and relevant IOC documents. It will be necessary to add marine meteorology materials in the Digital Library and to identify additional materials that address the three JCOMM Programme Areas;

- o **The OceanTeacher Training Curriculum**

  The OceanTeacher Training Curriculum is a collection of outlines, notes, examples, and miscellaneous documents used in conjunction with the Digital Library to organise training programs in marine data and information training. It will be necessary to add marine meteorology course materials in the Training Curriculum and to identify additional materials that address the three JCOMM Programme Areas;

- o **OceanTeacher Video Lectures**

  Since 2006 OceanTeacher also includes a range of video lectures. These are recordings of training sessions presented at the IOC Project Office for IODE in Oostende, Belgium. They can be viewed online (streaming video) at low or high bandwidth. As explained under 4.1.1 the main purpose of the video lectures is to support "train the trainer" activities, but also to enable trainees to refresh their knowledge after returning home.

As already indicated in 4.1.1 it will be important to maintain the highest possible standards for the quality of materials entered into OceanTeacher. It will also be desirable to establish and agree upon standard curricula for all topics. This can be achieved through close coordination between the resource persons and between the resource persons and the Chief Editor(s). It may be necessary to identify multiple Chief Editors, e.g. one per Programme Area. Resource persons may wish to create small working groups to draft and prepare materials for OceanTeacher.

OceanTeacher uses dynamic content management technology. As such materials can be entered by resource persons from their usual place of work. In principle the number of resource persons who can enter materials is unlimited.

In many cases material in the Digital Library and Training Curriculum materials make extensive use of hyperlinks to other content both within and outside OceanTeacher. An important quality control task for OceanTeacher is therefore to regularly check whether links are still valid. This could be the task of the resource person or of the Chief Editor.

The Chief Editor is responsible for the overall integrity of the Digital Library and Training Curriculum. He/she will need to monitor and adjust the overall architecture of the Digital Library (navigability) and Training Curricula. As said above it may be necessary to identify several Chief Editors.

JCOMM will need to decide what kind of management mechanism to use to develop and maintain its content in OceanTeacher.

If the video lecture tool is to be adopted by JCOMM then JCOMM will need to investigate whether all courses should be organized at the IOC project Office for IODE in Oostende, Belgium or whether the same technological solution (eYa, developed by ICTP, Italy) can be installed at other training sites.

It is noted that the use of OceanTeacher is free and open to all. Consultation of the OceanTeacher Digital Library is open and does not require registration. Use of the training Curriculum is also free to consult, but requires registration for full functionaility.

4.1.3 Manuals and Guides

As mentioned in 4.1.1 and 4.1.2 it will be important to maintain the highest possible standards for the quality of materials entered into OceanTeacher. In order to ensure that all Members/Member States apply the same methodology and use widely agreed upon standards both IOC and WMO have published many manuals and guides. It is essential that these are also used during JCOMM training courses (and thus also entered in OceanTeacher).

4.1.4 Infrastructure support

In some cases infrastructure may be provided through JCOMM Capacity Building Programmes. It may be appropriate to have access to relevant experts to advise on the procurement of equipment and other infrastructures. (see also 4.2: ODIN).

4.1.5 Operational support

Some supplementary funding can be provided to "jumpstart" project activities and develop demonstration products/services (see also 4.2: ODIN)

4.1.6 Workshops

Workshops are a useful tool to promote the sharing of expertise and experience at the national, regional and global level.

4.1.7 Travel and Study Grants

Travel and Study Grants will allow national experts to benefit from the expertise acquired in other institutions. It is also an effective mechanism to promote long-term informal professional relations between experts.

4.1.8 Communication and Outreach Tools

The JCOMM Strategy states "*Effectiveness in communicating the availability of data and services to, and in receiving feedback from potential clients is as fundamental to the success of JCOMM and its members as the actual delivery of the products themselves. In consequence, JCOMM will devote continuing efforts to the dissemination of information on its various programs, activities and initiatives to the broader client community around the world. To sensitize the marine community to the vital role that JCOMM now plays in operational oceanography and marine meteorology, and to provide easy access to updated information on its programmes, meetings and reports, a JCOMM web site and internet portal has been activated at http://www.jcommweb.net*".

Also within the JCOMM Capacity Building programme communication and outreach will play a crucial role and this at several level:
1. communication between trainees
2. communication between trainees and resource persons
3. communication between experts involved in the same programme area
4. communication between experts involved in different programmes areas
5. communication between JCOMM and its target audiences

For each of the above different or identical tools may be applied. For items 1,2,3 and 4 this can be done through email, email list servs, online collaboration websites (see below), and/or web sites. Methodology for 5 is described in the JCOMM Communication Strategy (Reference???)

A special tool that deserves consideration is the **online collaboration website** (example: ProjectPier (http://www.projectpier.org). ProjectPier is a Free, Open-Source, self-hosted application for managing tasks, projects and teams through an intuitive web interface. ProjectPier helps to communicate, collaborate and get things done. This technology has been tested by IODE in 2007 and is now being used frequently. In the near future it will be linked to OceanExpert (http://www.oceanexpert.net) enabling experts registered in OceanExpert to set up online collaboration websites.

4.2 MECHANISMS

As mentioned under 3.2, at the regional level, JCOMM Capacity Building will develop programmes and projects that follow the **ODIN strategy**, developed by IOC/IODE, which is based upon the provision of infrastructure, training and operational support, the promotion of inter-institutional and inter-personal networking, the sharing of information and data, and the creation of awareness at all levels of stakeholder communities.

It is therefore recommended to develop regional programmes and projects that are:

- (i)   **integrated:** encompassing the three JCOMM Programme Areas;
- (ii)   **embedded**: directly linked and relevant to national priorities in oceanography and marine meteorology;
- (iii)   **regional**: nationally specific but also regional (common) objectives and deliverables that foster cooperation;
- (iv)   **sustainable**: the long-term aim needs to be that the established operational capacity can be self-funded by the participating Members/Member States

As said above the ODIN strategic approach involves the following elements:

- (i)   **provision of infrastructure** (equipment): whereas one should aim to involve national institutions that have the basic infrastructure that enables participation in the activities, certain specialized equipments (e.g. computer equipment, observation instruments, communication equipment….) may be provided to reinforce existing facilities;
- (ii)   **provision of training**: organization of regional training courses; providing travel and study grants;
- (iii)   **provision of operational support**: although one should aim to involve national institutions that have a clear mandate and related funding for the national government to undertake activities directly related to the activities, some supplementary funding can be provided to "jumpstart" project activities and develop demonstration products/services;

An important component of ODINs is the governance mechanism that is established as part of the ODIN project. This typically includes:

NATIONAL LEVEL
- **national project management committee**: this group is composed of representatives of all relevant stakeholder groups involved in the project;
- **national coordinator(s):** depending on the project there can be one national coordinator or, if multiple work packages are involved, one coordinator per work package

REGIONAL LEVEL
- **Project Steering Committee**: supervises the overall implementation of the project
  - o membership: project manager, donor representatives, regional IOC/WMO representatives, relevant partner programme representatives (e.g. GOOS, IODE, …)

- **Project Management Committee**: oversees the work of the national project management committees (monitoring of milestones, deliverables,…)
    - o Membership: project manager, regional coordinators for work packages
- **Regional work package coordinator**: each work package (e.g. services, observation, data management) will be coordinated/facilitated/monitored by a regional coordinator.
- **Project Manager**: the project manager will be responsible for the overall implementation, coordination, monitoring and reporting of the project.

4.3 JCOMM CAPACITY BUILDING GOVERNANCE

JCOMM-II established the JCOMM Capacity Building Rapporteurs and adopted (Resolution 5) their Terms of Reference as detailed in Annex I and from which we quote here:

(a) The Capacity-building Rapporteur for each JCOMM Programme Area shall be responsible for the assembly of capacity-building requirements of that Programme Area as brought forward from groups, countries and regions through close liaison with the Coordinator, Coordination Group, and other teams and groups within that Programme Area;

(b) The Capacity-building Rapporteurs for the three Programme Areas will regularly liaise and integrate the capacity-building requirements of their respective Programme Areas;

(c) The Capacity-building Rapporteur assigned to the Management Committee shall transmit the integrated capacity-building requirements via the JCOMM co-presidents to WMO ET/TCO, IOCTEMA, IODE, GCOS, IGOS, GEF, IMF or other relevant organizations and bodies involved in capacity-building;

(d) Develop mechanisms for measuring the impact and success of capacity-building activities, and a system for regular review and evaluation.

The membership is selected to ensure an appropriate range of expertise and to maintain an appropriate geographical representation.

4.4 PROCEDURE FOR SUBMISSION OF JCOMM CAPACITY BUILDING REQUESTS

The following mechanism is proposed to receive, review and adopt capacity building proposals:

Step 1: Proposals for CB should originate "from groups, countries and regions" as already mentioned under (1).
If a proposal originates from a "group" then that group will need to demonstrate that the request originated from Member States (eg adopted recommendation of a technical subsidiary body of WMO or IOC)

If a proposal originates from "regions" then there should be an adopted recommendation of a WMO or IOC regional subsidiary body.

If a proposal originates from "countries" then it should clearly clarify why the proposal was submitted by a group of countries and not by a WMO or IOC regional subsidiary body.

Step 2: Proposals should be submitted to the WMO or IOC JCOMM Secretariat. The Joint Secretariat will then forward the proposal to the 3 PA coordinators as well as to the 3 Capacity Building Rapporteurs and invite them to review the Proposal. The Review may include interaction with the submitter and redrafting of the Proposal.At this stage the PA coordinators should also identify how their PA can contribute to the implementation (if approved) of the project.

Step 3: The 3 PA coordinators and 3 Capacity Building Rapporteurs will prepare an evaluation report of the Proposal and submit this, together with the Proposal (original or revised) to the Joint Secretariat.

Step 4: The Joint Secretariat will include the discussion on submitted Proposals in the Agenda of the earliest Session of the Management Committee.

Step 5: If a Proposal is assessed positively by the Management then the Proposal can either be approved for implementation as a Project under the JCOMM regular budget or it can be recommended for extra-budgetary support. In the latter case either the TTR can identify funding through its associated donors or, in the absence of the TTR, the Joint Secretariat can approach donors to seek funding of the Project Proposal.

Comment: as the above process may be too time consuming for small scale activities (eg training courses, feasibility studies,… eg with a budget of less than US$ 20,000) it may be considered to review and decide on such proposals by email.

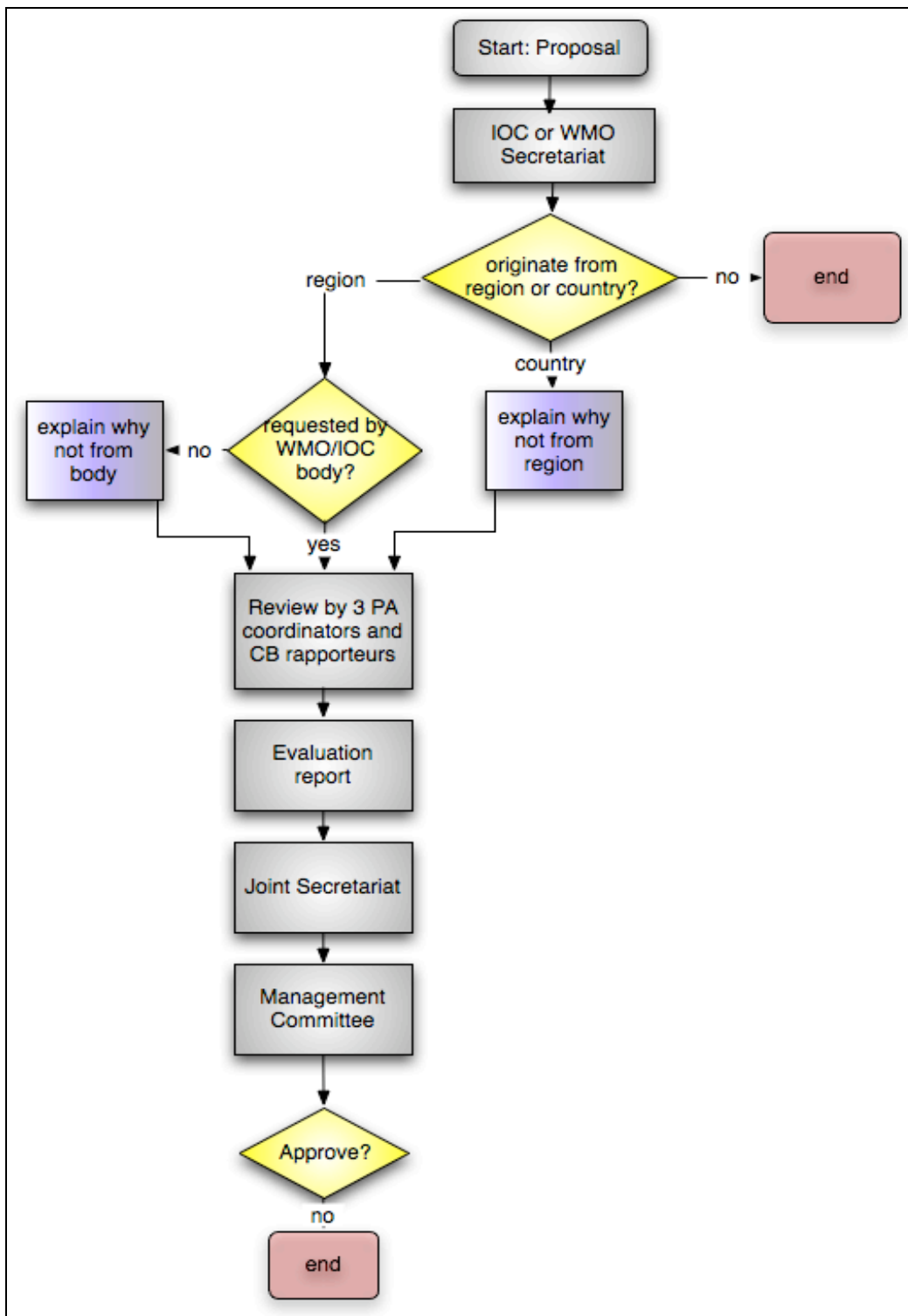The procedure is illustrated in diagram form in Figure 2 below.

Figure 2: Procedure for submission of JCOMM CB project proposals

ANNEX I

RESOLUTION 5 (JCOMM-II)
CAPACITY-BUILDING

THE JOINT WMO/IOC TECHNICAL COMMISSION FOR OCEANOGRAPHY AND MARINE METEOROLOGY,

NOTING:

(1) Resolution 5 (JCOMM-I) – Education, Training and capacity-building Programme Area,
(2) The IOC, JCOMM and GOOS Capacity-building Strategies,
(3) The report of the chairperson of the Capacitybuilding Coordination Group to the session,

CONSIDERING:

(1) The need to develop and provide oversight for the implementation of the JCOMM and GOOS Capacity-building Strategies,
(2) The need to review and update as necessary existing training and guidance material and generate new material where required,
(3) The value of coordinating support to Members/ Member States in marine observing systems, data management and services on a regional or subregional basis,
(4) The need to coordinate closely with other JCOMM programme areas, other programmes and bodies of WMO and IOC and external programmes and bodies in the implementation of integrated specialized training and support activities,
(5) The need to identify and harness theresources necessary to support JCOMM and GOOS capacitybuilding,
(6) The need to foster capacity-building within Programme Areas

.

DECIDES:

(1) To appoint Capacity-building Rapporteurs within the Observations, Services and Data Management Programme Areas, forming a cross-cutting team;
(2) To establish a joint JCOMM-GOOS Task Team on Resources;
(3) That the terms of reference for the Capacitybuilding Rapporteurs and Task Team on Resources shall be as given in the annex to this resolution;
(4) To entrust the Management Committee, in consultation with the GOOS Scientific Steering Committee, with selecting, in accordance with WMO General Regulation 32 :
    (*a*) Three Capacity-building Rapporteurs to be members of the Observations, Services and Data Management Coordination Groups, respectively, and one of the three to be a member of the Management Committee;
    (*b*) A chairperson of the Task Team for Resources;

REQUESTS the Secretary-General of WMO and the Executive Secretary IOC to invite relevant external international and national donor agencies to nominate representatives to participate on the Task Team on Resources, as appropriate

ANNEX TO RESOLUTION 5 (JCOMM-II)
TERMS OF REFERENCE OF THE JCOMM CAPACITY-BUILDING
RAPPORTEURS AND TASK TEAM ON RESOURCES

1. Rapporteurs

Terms of reference

(*a*) The Capacity-building Rapporteur for each JCOMM Programme Area shall be responsible for the assembly of capacity-building requirements of that Programme Area as brought forward from groups, countries and regions through close liaison with the Coordinator, Coordination Group, and other teams and groups within that Programme Area;

(*b*) The Capacity-building Rapporteurs for the three Programme Areas will regularly liaise and integrate the capacity-building requirements of their respective Programme Areas;

(*c*) The Capacity-building Rapporteur assigned to the Management Committee shall transmit the integrated capacity-building requirements via the JCOMM co-presidents to WMO ET/TCO, IOCTEMA, IODE, GCOS, IGOS, GEF, IMF or other relevant organizations and bodies involved in capacity-building;

(*d*) Develop mechanisms for measuring the impact and success of capacity-building activities, and a system for regular review and evaluation.

General membership

The membership is selected to ensure an appropriate range of expertise and to maintain an appropriate geographical representation.

2. Task Team on Resources

Terms of reference

The Task Team on Resources shall:

(a) Monitor the existence, fields of interest and procedures of international and national aid programmes, foundations and all other possible sources of funding and advise on proposal development; and

(b) Where possible, develop links and contacts to funding sources and assist potential Capacitybuilding recipients in developing contacts with potential donors and in proposal development.

General membership

Chairperson of the Task Team on Resources.
Donor agency representatives.

ANNEX II

EC Criteria for the Recognition of WMO Regional Training Centres
(EC-LVIII, June 2006)

I. To be designated as a WMO Regional Training Centre (WMO-RTC), institutions which undertake training in meteorology, hydrology and related sciences should satisfy the following criteria:

(a) A Centre should be established only to meet the expressed requirements of two or more of the Members that cannot be met by existing facilities;

(b) A Centre should be designed to meet the requirements of the Region, as expressed in a decision of the regional association as recorded in a resolution or statement in the general summary of the Abridged Report;

(c) Each Centre should be within the particular Region concerned and its location decided by the Executive Council, in the light of the views of the regional association, or its president after consulting its Members, the advice of the technical commission concerned, and the comments of the Secretary-General;

(d) The following conditions should apply to each Centre:

- The Centre should be open to students from all countries in the Region and, upon request, from interested countries in other Regions;

- The education level of the various courses of instruction carried out at the Centre should be consistent with the guidance material issued by WMO;

- The Centre should have processes in place to identify, with the support of the regional association Rapporteur on education and training, training needs and to evaluate the training provided;

- The Centre should have adequate buildings and training facilities, and have the necessary equipment and facilities for an efficient and effective use and exchange of training aids and modules based on modern technology;

- The Centre should have competent instructors in terms of both their technical ability and training skills;

- The Centre should have adequate arrangements for administration, governance, planning and self-assessment.

(e) The establishment and maintenance of the Centre will largely be the responsibility of the host country. WMO shall have the right to monitor the work of the Centre.

II. The obligations of WMO and the host country should be the subject of a signed Agreement to abide by certain principles between WMO and the host country, and this could cover the following matters:

- The purpose and functions of the Centre;
- The number and entrance qualifications of students;
- The right of WMO to examine syllabi and other relevant material to ensure that the level of education and training is consistent with the guidance material issued by WMO (e.g. publication WMO-No. 258 and its supplements);
- The administrative arrangements of the Centre;
- WMO obligations - financial or otherwise;
- Obligations of the government of the host country;
- Obligations of the Centre;
- Withdrawal of the designation of the Centre;
- Termination of the Agreement.