Establishment of JCOMM: historical background

1. The WMO Executive Council, at its forty-eighth session (Geneva, June 1996), strongly endorsed the developing and strengthening cooperation between WMO and IOC in a number of areas, and specifically "... agreed that further study on a closer cooperation between WMO and IOC in the CMM [the then WMO's Commission for Marine Meteorology] programme, including the possible co-sponsorship of the Commission by IOC, would be necessary ...". The EC suggested that "... the study should prepare detailed documentation covering regulatory and financial aspects of enhanced collaboration as well as an assessment of advantages and disadvantages to both WMO and IOC. The documentation should then be submitted to the twelfth session of CMM ..." (para 6.4.4 of the general summary, final report of EC-XLVIII).

2. At its twenty-ninth session (Paris, September-October 1996), the IOC Executive Council considered the proposal by WMO to investigate concrete co-operative relationships in the form of IOC-WMO co-sponsorship of the CMM, and "... decided to field a joint IOC-WMO effort to assess the implications. This would involve two consultants, respectively appointed by IOC and WMO, to jointly prepare an assessment, which could be properly reviewed by experts associated with the various relevant programmes. The resulting information and preliminary analysis should be presented to the Governing Bodies ... for further consideration." (para 298 of the summary report of the session).

3. A preliminary consultant's study was prepared by WMO in late 1996 and submitted to CMM-XII (Havana, March 1997) for consideration. The Commission made a number of valuable suggestions concerning the study and recommended, inter alia, that a full, joint study should be prepared, for consideration by the governing bodies of the two Organizations (Recommendation 1 (CMM-XII)). This recommendation was approved by the WMO EC-XLIX (June 1997) and endorsed by the IOC Assembly (July 1997).

4. The two consultants appointed respectively by the Secretary-General of WMO and the Executive Secretary IOC were:

   - Mr D. Linforth, retired from the Australian Bureau of Meteorology, member of CMM for 20 years, formerly chairman of the CMM Working Group on Specialized Marine Meteorological Services and member of the CMM Advisory Working Group, and recipient of an outstanding services award from CMM.
   - Dr R. Wilson, retired from the Marine Environment Data Service of Canada, formerly chairman of the IOC Committee for the International Oceanographic Data and Information Exchange.
5. Based on the joint consultants report, documentation on the subject was prepared for the sessions of the Executives Councils of WMO and IOC in 1998 (WMO EC-L, June, and IOC EC-XXXI, November), containing a formal proposal for the establishment of a joint technical commission through the merger of CMM and IGOSS. At the same time, very strong support for the concept of this joint body was expressed by the JSC for the WCRP as well as the Steering Committees for GOOS and GCOS.

6. Both Executive Councils also strongly endorsed the proposal and recommended its approval to the thirteenth World Meteorological Congress (May 1999) and the twentieth session of the IOC Assembly (June-July 1999). In addition, the ECs agreed that the new body could be called the Joint WMO/IOC Technical Commission for Oceanography and Marine Meteorology (JCOMM), without creating either statutory or semantic problems for either Organizations. Subsequently, WMO Congress and the IOC Assembly, enthusiastically and in almost identical terms, approved the proposal, through Resolutions 14 (Cg-XIII) and XX-12, respectively. The latter is attached herewith for convenience as Annex I.

7. To initiate the transition from CMM/IGOSS to JCOMM, and to plan a coherent work plan over the time remaining until the first session of the new body (Iceland, June 2001), two Transition Planning Meetings took place, the first one in St Petersburg, Russia, in July 1999, and the second one in Paris, France, in June 2000. The work plan was to encompass the ongoing work of CMM and IGOSS, the activities of those bodies which will now report to JCOMM and the various urgent tasks to be addressed, in particular relating to GOOS and GCOS implementation. In addition, issues relating to the membership, structure, meetings, working arrangements, etc. for JCOMM were also to be addressed.

8. As agreed by WMO and IOC governing bodies, JCOMM is to provide the institutional umbrella and co-ordinating/integrating mechanism for all existing and future operational marine-related activities of IOC and WMO. The list of existing bodies and activity areas which now come under JCOMM, as well as the programme areas in which they are involved, is given in Annex II. The challenge in the transition process for JCOMM is to find the right way of getting from the present status of an addition of more or less independent bodies to a fully integrated, ideal JCOMM.

9. To begin this process, the St Petersburg meeting agreed on a basic "Programme Area" (PA) approach to the future JCOMM structure. It also began the process of structuring the immediate JCOMM work programme into PAs, rather than based on specific bodies and groups as at present. It further established an ad hoc group on JCOMM structure to prepare detailed proposals on structure and work programme, based on these outline agreement.

10. In this context, and as part of the integration process, the meeting supported the concept of integrating as much as possible all ship-based observation programmes, specifically the traditional Voluntary Observing Ship (VOS) scheme and Automatic Shipboard Aerological Programme (ASAP) of WMO, and the Ship-of-Opportunity Programme (SOOP) of IOC and WMO. The new concept would involve a full integration on matters of common concern in ship operations (ship recruitment and servicing, communications, metadata, etc.), with specialized technical sub-groups to deal with measurement-specific questions.

11. Other significant agreements and decisions reached at the St Petersburg meeting include:

(i) rapid establishment of a new, multi-disciplinary membership for JCOMM, the distribution of information to these members and their entrainment into the transition process;
(ii) development of procedures and responsibilities for operational data management, together with IOC and CBS (the WMO Commission for Basic Systems);
(iii) establishment of interim co-presidents and Management Committee for JCOMM;
(iv) establishment of liaison mechanisms with GOOS and GCOS;
(v) involvement in CBS Rolling Requirements Review process and in the work of the Global Observing Systems Space Panel (GOSSP);
(vi) establishment of an outline draft agenda for JCOMM-I;
(vii) establishment of an ad hoc group to develop a JCOMM capacity building strategy.

12. At the Paris meeting, the key item for discussion was the review of a draft detailed JCOMM structure and work plan. Based on the report of the ad hoc intersessional group charged with the task of developing further proposals for the Commission sub-structure, as well as on comments and input received from interim Management Committee members, the Secretariats and the GOOS Steering Committee, the meeting extensively reviewed and revised the draft structure. The final proposals, including draft terms of reference for all components of the structure, are reproduced in Annex III. The proposals will be submitted to JCOMM-I for possible amendments and eventual approval.

13. In the same context, the meeting considered a proposal from the DBCP/SOOP co-ordinator, for the establishment of a “JCOMM Operations Centre”, to be based essentially on the existing DBCP/SOOP co-ordination and information centre, expanded as proposed to include also the Argo Information Centre. This centre would provide essential data and tools, as well as a centralised information and technical support facility, required for co-ordinating and integrating many of the existing operational ocean observing networks under JCOMM. The meeting strongly endorsed the concept, at the same time suggesting that the name might be changed to more clearly reflect its actual functions. However, the meeting agreed to retain the existing URL of JCOMMOPS, since this was already widely known. It requested the Secretariats to seek the agreement of DBCP and SOOPIP for the proposal, including proposed terms of reference, since these bodies actually provided the funding to support the centre. Following this agreement, a formal proposal to JCOMM-I for the establishment of the centre should be prepared, though it was agreed that the centre could, in practice, begin operating almost immediately on an interim basis. This proposal should specify the mechanism for providing JCOMM guidance to the centre.

14. Capacity building was clearly recognized by the meeting as being another major issue, with the widespread availability of expertise and facilities in all JCOMM Member States being crucial to its future success. The meeting reviewed progress in the development of a capacity building strategy for JCOMM, in the context of the overall capacity building programmes of WMO and IOC and compatible with the GOOS capacity building principles and programme. The analysis of marine capacity building requirements in WMO Regional Association III (RA III) developed by Miriam Andrioli, a member of the interim Management Committee, was regarded as an ideal starting point to develop this strategy and establish priorities for JCOMM capacity building activities. The ad hoc group to develop a JCOMM capacity building strategy was re-established by the meeting, charged with finalizing a draft strategy to be presented to JCOMM-I for adoption.

15. Other substantive issues addressed and decisions reached at the meeting included:

(i) Agreement on the provisional agenda for JCOMM-I, which reflects both the ongoing work programme inherited from CMM and IGOSS, as well as the proposed new programme structure for JCOMM;
(ii) Agreement on a document plan for JCOMM-I, as well as other details relating to its preparation and conduct; the document plan is given in Appendix B;
(iii) Agreement on a work programme for the new commission in the year remaining before the first formal session;
(iv) Support for the proposals regarding both the interim and long term Argo Information Centre, as well as for the eventual integration of Argo into operational observing networks under JCOMM, to be co-ordinated through the proposed Observations Co-ordination Group.

**JCOMM-IODE relationship**

16. The question of the consequences for IODE of the establishment of JCOMM should be considered from two standpoints: (i) JCOMM replaces *inter alia* IGOSS, which could be considered as the closest IODE partner; (ii) JCOMM appears in a world where Global Observing Systems are into being and rapidly developing.

17. A first issue is obviously that of the GTSPP, initiated jointly by IODE and IGOSS in 1989 as a pilot project and transformed, in 1996, into a permanent operational programme under the co-sponsorship, again, of IODE and IGOSS. It is clear in this case that JCOMM will take the GTSPP co-sponsorship over from IGOSS. GTSPP is indeed now a stand-alone programme, operationally supported by some IOC and WMO Member States, and the question of its co-sponsorship is not a crucial item for discussion. At the same time, attention should be drawn in this respect to the proposed terms-of-reference and membership of the JCOMM Expert Team on Ocean Data Management within the Programme Area on Data Management (see Annex III, page 2), which explicitly refer to GTSPP. A bit of additional explanation may nevertheless be useful.

18. One of the conclusions of the fourth session of the GTSPP Steering Group (Washington, April 1996) reads indeed as follows:

"It was the conclusion of GTSPP-IV that GTSPP no longer needs the full attention of a Steering Group. There are, however, several aspects that will need continuing attention. One example is the development of future services to new programmes including GOOS and CLIVAR. Another relevant consideration is the obvious need for GTSPP-like programmes for other oceanographic variables as IGOSS and IODE implement end-to-end data management systems for other aspects of their programmes. Thus, the Steering Group should be renamed and the terms of reference be reconstituted to assist in developing these end-to-end data management programmes for other IGOSS and IODE needs. In this manner, guidance would continue to be provided to the GTSPP and the core expertise and experience developed in GTSPP could be applied to the development of other programmes featuring different groups of centers as participants and implementers."

19. The renaming and changing of the ToRs of the Steering Committee took place at the IODE Officers Meeting held in Goa, India, in February 1998. They are reproduced in Annex IV for convenience.

20. In that sense, it becomes clear that, not only the (relatively) weak question of GTSPP co-sponsorship is solved, but also that the recommendation of the IODE Chairman, at the St Petersburg meeting, "that J-COMM follow the model established by GTSPP for the end-to-end management of marine data, incorporating both real-time (operational) systems and the delayed mode systems including IODE" is taken care of in all its implications. This will be reflected in the Annotated Draft Provisional Agenda for JCOMM-I, which will read, under agenda item 7.2 "Ocean temperature and salinity", something like (the text is not in a fully final form as yet):
"The Global Temperature Salinity Profile Programme (GTSPP), formerly sponsored jointly by IGOSS and IODE and now by JCOMM and IODE, is the primary mechanism for the assembly of complete global sets of ocean temperature and salinity profile data, their quality control and distribution to users and global archive centres. The Commission will therefore be invited to review the status of the GTSPP and to take actions on proposals to enhance the efficiency and effectiveness of the programme, as appropriate.

The SOOP Implementation Panel has proposed that a mechanism similar to the GTSPP be implemented to assemble, quality control and archive surface salinity data, in particular those exchanged in TRACKOB code. The Commission will be invited to review and take appropriate action on a formal proposal in this regard."

21. Another recommendation of the chairman IODE at the St Petersburg meeting was "that JCOMM use the IODE data networks for the management and final archival of relevant delayed mode ocean data". That has been the constant IGOSS policy in the past and there is little possibility for any significant change in that policy caused by the establishment of JCOMM. Nevertheless, a new dimension is now added to what IGOSS was, that is the meteorological data, including marine climatology. The (then CMM- and now) JCOMM-sponsored Marine Climatological Summaries Scheme (MCSS) has, since the 1960s, provided a highly successful mechanism for the management of marine meteorological data and associated metadata. It makes a substantial contribution to the WCP and to global climate studies as well as providing data essential to the provision of marine climatological services. Now, marine users of all types are increasingly requiring access to integrated marine meteorological and oceanographic data and services. Data management is often the key to such integration. This integration at present takes place eventually within the WDCs, but otherwise only in a limited way. It will therefore be necessary to review this important question and to make specific suggestions for actions to enhance integration in marine data management. That will be a key issue for the cooperation between JCOMM, IODE, CBS and CCI in the foreseeable future.

22. Lastly, the IODE chairman recommended "that J-COMM use the developing IODE MEDI metadata directory system for the tracking and location of marine data". This question has been addressed by the GOOS Steering committee (GSC) at its third session (Paris, May 2000), in particular in the context of the Global Observing Systems Information Centre (GOSIC). It was then stated that GOSIC intends to use MEDI to provide metadata records for the elements of the GOOS Initial Observing System (IOS) in GOSIC, and that GOSIC will ask its co-operating data centres to use MEDI as the tool to provide access to their data. GSC-III therefore requested IODE to finalize the MEDI metadata inventory system "and make it widely available, initially via CD, then as web-based system, for use in GOOS data and information management, before end year 2000". Since JCOMM is encompassing a great part of the GOOS IOS, it is clear that this GSC decision will be largely taken into account by JCOMM and its subsidiary group(s) concerned.

23. In this context, the fate of the Joint GOOS-GCOS-GTOS Data and Information Management Panel (J-DIMP) may be relevant. The Panel was established to guide the development of the data and information management system for the three Global Observing Systems (G3OS). J-DIMP was supposed to be a highly focused "problem solving" group, concentrating on resolving crucial issues affecting the quality and maintenance of global observing system data sets, and routes of access to them. However, as implementation had proceeded, it had been increasingly realised that contributed elements of the observing systems were largely autonomous. It appeared that as long as certain general principles were met, the observing systems were going to
rely on the elements adhering to best practices regarding the details of quality assessment and control, application of metadata, and preparation of products.

24. Given the above background, and the change in perception of how the observing systems will actually manage data and information, GOOS, GCOS and GTOS had held an extensive, largely e-mail based discussion about whether or not J-DIMP is still needed, and if so what its role should be. The key points emerging from the e-mail discussions were as follows:

(a) **J-DIMP has fulfilled its initial role and it is difficult to see a specific role for it at this time.**

(b) **G3OS DIM issues are sufficiently diverse that a single committee cannot provide each of the G3OS units with the specific advice needed.**

(c) **GOOS, GCOS and GTOS each need to address their own specific data issues, especially as we work more closely with the space agencies that have their own panel (WGISS - the CEOS Working Group on Information Systems and Services).**

(d) **Rather than J-DIMP we may need a task force that can focus on specific initiatives, like providing guidance for GOSIC.**

25. As a conclusion, the GSC decided that a standing committee on data and information management for the G3OS is not needed at this time for issues of data and information management common to GOOS, GTOS, and GCOS. Instead, to enable common issues in data and information management to be recognised and addressed, the GSC agreed that data and information management linkages between the three observing systems should be a permanent topic on the agenda of the meeting of the G3OS sponsors, and that such issues would probably be addressed most effectively by small focused and time limited ad hoc groups rather than by a broad ranging body like J-DIMP.

26. At the same time, it was agreed that the Data and Information Management (DIM) plan prepared by J-DIMP should be taken as a general "umbrella" by the three global observing systems to develop their own DIM plans. A draft of such a plan for GOOS was basically endorsed by the GSC, though it still needed some improvement before being published. This plan will undoubtedly be relevant for DIM-related JCOMM activities.

27. As far as the relationship between JCOMM and IODE is concerned, that means that there is no longer any kind of "supervisor", working at the level of the G3OS, and entitled to formulate and develop the G3OS Data and Information Management Plan(s), monitor the overall implementation of the data-related elements of the plans and make reports and present recommendations, as required, to the steering committees of GCOS, GTOS and GOOS on information management issues [from the J-DIMP terms-of-reference]. JCOMM and IODE will work together in the field of data and information management, under the general principles established at the G3OS level, in close collaboration with the GSC and the relevant WMO bodies, namely CBS and CCI.
Annex I

Resolution XX-12

The Intergovernmental Oceanographic Commission,

Noting:

(i) Resolution EC-XXXI.13 and section 4.3 of the summary report of IOC/EC-XXXI,
(ii) the Final Report of WMO/ Cg-XIII, general summary, paragraphs 3.4.4.1-3.4.4.6,
(iii) WMO Congress Resolution 14 (Cg-XIII),

Noting further the requirement expressed by the GOOS Steering Committee, the GCOS Steering Committee and the Joint Scientific Committee for the WCRP for a coherent joint IOC-WMO mechanism for the implementation and international co-ordination of operational oceanography,

Recognizing:

(i) the major support already provided to operational oceanographic observing networks and services, the World Climate Programme, GOOS, GCOS and the WMO World Weather Watch (WWW) individually by IGOSS, the DBCP, GLOSS and the WMO Commission for Marine Meteorology (CMM),
(ii) the need to maintain support for maritime safety services as well as responsibilities in the preparation of regulatory and guidance material in this field,

Considering:

(i) the need for a fully co-ordinated mechanism for implementing the requirements for ocean and surface marine meteorological data in support of GOOS and GCOS,
(ii) the expanding requirements of all marine users for a comprehensive range of marine meteorological data and products,
(iii) the need to better co-ordinate and manage the existing range of marine-related activities of IOC and WMO, to reduce duplication and overlap, enhance efficiencies and reduce costs to both bodies,
(iv) the potential benefits to be gained from making better use of the diverse and extensive range of expertise and facilities available to both IOC and WMO at all levels,
(v) the expected cost savings from a rationalization of existing marine-related bodies and activities, and from joint support of marine programme activities by IOC and WMO,

Decides:

(i) to establish a Joint WMO-IOC Technical Commission for Oceanography and Marine Meteorology (JCOMM), to replace the existing Joint IOC/WMO Committee for the Integrated Global Ocean Services System (IGOSS) and WMO Commission for
Marine Meteorology (CMM), with terms of reference as given in the Annex to this Resolution;

(ii) that JCOMM will become the reporting and co-ordinating mechanism for the DBCP and GLOSS and for other appropriate existing and future operational ocean-related activities within IOC;

Urges Member States:

(i) to provide every support to JCOMM to contribute to its success, including the nomination of appropriate national representatives to serve on the Technical Commission and to undertake work on its behalf;

(ii) at the national level, to make efforts to enhance co-ordination and co-operation between oceanographers and meteorologists, both to ensure a balanced input to the work of J-COMM, and also to develop a truly multidisciplinary approach to marine monitoring and services, in support of IOC and WMO programmes and of the needs of all maritime users;

Instructs the Executive Secretary IOC, in consultation with the Secretary-General of WMO, the president of CMM and the chairman of IGOSS, to establish procedures and a timetable for the transition to J-COMM, as well as a firm agreement on financing and Secretariat support for the new body.

Annex to Resolution XX-12

Terms of Reference for the Joint WMO/IOC Technical Commission for Oceanography and Marine Meteorology (J-COMM)

The Technical Commission shall be responsible for matters relating to:

Further development of the observing networks

Under the guidance of the relevant scientific and operational programmes of IOC and WMO, development, maintenance, co-ordination and guidance of the operation of the global marine meteorological and oceanographic observing systems and supporting communications facilities of these organizations to meet the needs of the IOC and WMO Programmes and in particular of the Global Ocean Observing System (GOOS), the Global Climate Observing System (GCOS) and the World Weather Watch (WWW). Evaluation on a continuing basis of the efficiency of the overall observing system and suggesting and co-ordinating changes designed to improve it.

Implementation of data management systems

Development and implementation, in co-operation with the Commission for Basic Systems (CBS), the Committee for International Oceanographic Data and Information Exchange (IODE), the International Council of Scientific Unions (ICSU), and other appropriate data management bodies, end to end data management systems to meet the real-time operational needs of the present operational systems and the global observing systems; co-operation with these bodies in seeking commitments for operation of the necessary national compilation, quality control, and analysis centres to implement data flows necessary for users at time scales appropriate to their needs.
Delivery of products and services

Provision of guidance, assistance and encouragement for the national and international analysis centres, in co-operation with other appropriate bodies, to prepare and deliver the data products and services needed by the international science and operational programmes, Members of WMO, and Member States of IOC. Monitoring of the use of observations and derived products and suggesting changes to improve their quality. Co-ordination of the safety-related marine meteorological and associated oceanographic services as an integral part of the Global Maritime Distress and Safety System of the International Convention for the Safety of Life at Sea (SOLAS).

Provision of capacity building to Member States

Review and analysis of the needs of Member States of IOC and Members of WMO for education and training, and for technology transfer and implementation support in the areas of responsibility of the technical commission. Provision of the necessary technical publications, guidance material, and expert lecturers/trainers and operation of workshops as required to meet the needs. Development of projects to enhance Member States capacity to participate in and benefit from marine meteorological and oceanographic programmes of WMO and IOC.

Assistance in the documentation and management of the data in international systems

Development of co-operative arrangements with the data management bodies of IOC, ICSU, and WMO, such as IODE, the Commission for Climatology (CCI), and the ICSU World Data Centres to provide for comprehensive data sets (comprising both real-time and delayed mode data) with a high level of quality control, long term documentation and archival of the data, as required to meet the needs of secondary users of the data for future long term studies.

These responsibilities exclude those aspects specifically handled by other WMO constituent bodies or equivalent bodies of IOC.
## ANNEX II

### EXISTING BODIES AND PROGRAMME AREAS

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ANNEX III

Draft JCOMM Sub-structure and Terms of Reference

A. MANAGEMENT GROUP

TOR

(a) Advise the co-presidents on the short and long-term planning of the work programme of JCOMM and on its implementation;
(b) Advise the co-presidents regarding the resources required for the implementation of the work programme, as well as approaches to identifying and mobilising these resources;
(c) Assist the co-presidents in the co-ordination and integration of the work of JCOMM, as implemented through the various working groups, teams and rapporteurs;
(d) Review the internal structure and working methods of the Commission, including its relationship to other bodies, both internal and external to WMO and IOC, and develop proposals for modifications as appropriate;
(e) Advise on the implementation of activities and projects referred to JCOMM for action by WWW, WCP, GOOS, GCOS and other programmes, including in particular the GOOS/GCOS Implementation Action Plan;
(f) Contribute as required to the WMO Long-term Planning process, in particular with respect to the development and monitoring of the implementation of the marine programme component.

Membership

2 co-presidents
4 Programme Area co-ordination group chairmen
Representatives of relevant scientific design and planning bodies
No more than 2 other experts, if necessary, to ensure full geographical coverage

B. DATA MANAGEMENT PROGRAMME AREA

1. Data Management Co-ordination Group

TOR

(a) Plan, initiate and oversee the implementation of the DM work programme;
(b) Advise on actions required to implement, maintain and make available to users a fully integrated ocean/atmosphere data stream, including identification of the required resources;
(c) Ensure full and effective collaboration, co-ordination and compatibility with other data management bodies and programmes, including IODE, CBS, CCI, CEOS, GOSSP and the WDCs;
(d) Keep under review and encourage the use of advanced information technology in marine data management;
(e) Encourage and assist countries to identify, rescue, digitise and archive historical marine meteorological and oceanographic data;
(f) Develop, where possible generic, QC, metadata, analysis, data flow and data exchange standards, formats and procedures for JCOMM data;
(g) Keep under review the requirements of operational centres for real time, integrated marine data delivery and develop and recommend improved
procedures to ensure that data and metadata are available to these centres with appropriate timeliness and quality;
(h) Collaborate with CBS in the development and maintenance of real time data quality and data flow monitoring and follow-up procedures.

Membership

PA/DM co-ordinator (chair)
Chairs Expert Teams (2)
Rapporteurs (3)
Representatives of IODE, CBS, CCI and WDCs, as necessary

2. Expert Team on Ocean Data Management

TOR

Largely as for GTSPP now, expanded as appropriate to cover surface salinity.

Membership

4-5 selected experts from Member States
Representatives of IODE and WDCs

3. Expert Team on Marine Climatology

TOR

(a) Operate a programme for the development and maintenance of end-to-end systems for the assembly and management of marine climatological data and related metadata sets required for GOOS, GCOS, WCP, other programme and marine users;
(b) Develop and recommend QC, metadata, analysis, data flow and data exchange standards, formats and procedures to meet the requirements and time scales of users;
(c) Keep under review the operations of the MCSS and related existing data management schemes and make recommendations for improvement as necessary;
(d) Design, recommend and maintain data flow monitoring systems;
(e) Encourage and facilitate the enhanced submission of data to the MCSS and other specific data management systems;
(f) Keep under review the work of Data Assembly Centres and recommend enhancements and/or additional centres as appropriate;
(g) Keep under review and, as necessary, propose procedures for the preparation and/or updating of relevant technical publications;
(h) Keep under review developments with Beaufort equivalent scales.

Membership

8-10 selected experts from Member States (including, as a minimum, representatives of MCSS/GCC centres)
Representatives of CBS and CCI as necessary
C. SERVICES PROGRAMME AREA

1. Services Co-ordination Group

TOR

(a) Keep under review and advise on the effectiveness, co-ordination and operation of the Services work program, including performance with respect to timeliness, standards, quality and relevance to established user requirements.
(b) Through the assembly of requirements identified by specialist service groups, and other PAs of JCOMM, provide advice on JCOMM services that need to be implemented or discontinued.
(c) Develop interfaces to representative user groups in order to monitor the strength and weaknesses of existing services.
(d) Ensure effective co-ordination and cooperation with appropriate groups and bodies of CBS, GOOS and GCOS in the area of service provision;
(e) Liaise with external bodies, in particular those representing user communities.

Membership

PA/Services co-ordinator (chair)
Chairs expert teams (3)
Rapporteurs (2)
Representatives of user organizations and groups as appropriate

2. Expert Team on Maritime Safety Services

TOR

(a) Monitor the operations of the marine broadcast system for the GMDSS and develop improvements as necessary;
(b) Liaise with IMO, IHO, ICS, Inmarsat and other concerned organizations and bodies on maritime safety issues, including the GMDSS;
(c) Monitor requirements for international co-ordination of meteorological and related services provided through NAVTEX and propose actions as appropriate;

Membership

Minimum membership to include representatives of the AMC for the GMDSS
Representatives of IMO, IHO, ICS, Inmarsat, other user groups as appropriate

3. Expert Team on Wind Waves and Storm Surges

TOR

(a) Monitor and assist in the implementation of the JCOMM Wind Wave and Storm Surge Programme and propose amendments as required;
(b) Develop technical advice on wave and storm surge modelling, forecasting and service provision and provide assistance and support to Member States as required;
(c) Monitor projects for verification of operational wind wave and storm surge model outputs and assist in their implementation as required;
(d) Ensure effective co-ordination and Cupertino with appropriate GOOS bodies on requirements for and implementation of wind wave and storm surge products and services.


Membership

6-8 selected experts

4. Expert Team on Sea Ice

TOR

(a) Keep under review and catalogue the products and services required by user communities in sea ice areas;
(b) Encourage and advise on the relevant numerical models and forecast techniques for products and services;
(c) Develop technical guidance material, software exchange, specialized training and other appropriate capacity building support with regard to sea ice observations and services;
(d) Maintain linkages with relevant international organizations and programmes, in particular CLIC, IICWG and ASPeCT;
(e) Keep under review the operations of the Global Digital Sea Ice Data Bank, provide guidance as appropriate, and encourage and facilitate enhanced submissions of sea ice data to the bank;
(f) Recommend and promote appropriate QC, error analysis and archiving mechanisms;
(g) Review and propose amendments to formats, nomenclatures and procedures for sea ice data and information exchange as well as to relevant terminology, coding and mapping standards.

Membership

6-8 selected experts

5. Rapporteurs

(a) MPERSS
(b) JCOMM Products Bulletin – Editor

D. OBSERVATIONS PROGRAMME AREA

1. Observations Co-ordination Group

TOR

(a) Keep under review and advise on the effectiveness, co-ordination and operation of the observations work program, including performance measured against scientific requirements, delivery of raw data, measurement standards, logistics and resources.
(b) Provide advice to JCOMM and to Observation Teams on possible solutions for newly identified requirements, consulting as appropriate with relevant scientific groups and CBS.
(c) Taking into account the continuing development of satellite observations and their capabilities, review in situ data requirements and recommend changes as appropriate.
(d) Co-ordinate the development of standardized, high quality observing practices and instrumentation and prepare recommendations for JCOMM.
(e) Examine trade-offs and use of new and improved techniques/developments against requirements and available resources.

(f) Liaise with and input to CBS activities regarding the consolidated requirements database and operational satellites.

Membership

PA/Obs co-ordinator (chair)
Chairs Ship Observations Team, DBCP, GLOSS, (Argo Science Team), (TIP)
Technical co-ordinator DBCP/SOG, Rapporteurs as required
Satellite expert
One other expert

2. Ship Observations Team

TOR

Merger of existing TOR for ASAP, SOOPIP, VOS

Membership

Open, existing operators

3. Data Buoy Observations Team

TOR

Existing TOR for DBCP, TIP and Action Groups

Membership

Open, existing DBCP members, Action Groups, TIP

4. Sea Level Observations Team

GLOSS Group of Experts

TOR

Existing GLOSS GE and GLOSS Scientific subgroup

Membership

Existing GLOSS GE and GLOSS Scientific Subgroup
Liaison to PAs DM, ETIS
Liaison to C-GOOS
E. EDUCATION, TRAINING AND IMPLEMENTATION SUPPORT PROGRAMME AREA

1. ETIS Co-ordination Group

TOR

(a) Plan, initiate and implement the ETIS work programme, including in particular the JCOMM Capacity Building Strategy;
(b) Keep under review existing training and guidance material (paper and electronic) and advise on procedures for updating, as well as for the development of new material;
(c) Monitor regional requirements for capacity building and develop regional projects as appropriate;
(d) Develop and implement integrated training and support activities, in collaboration with other programme areas and external bodies and programmes (e.g. WMO ET/TCO, IOC-TEMA, GOOS, GCOS, IGOS).

Membership

PA/ETIS Co-ordinator (chair)
Chair Task Team Resources
Rapporteurs as appropriate

2. Task Team Resources

TOR

(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;
(b) Where possible, develop links and contacts to funding sources and aid programme management;
(c) Develop a plan for obtaining resources for JCOMM Capacity Building, in collaboration with GOOS and GCOS.

Membership

2-3 selected experts
Donor agency representatives

3. Regional Rapporteurs

WMO regional rapporteurs
Links to IOC regional bodies

4. Liaison Rapporteurs

GLOSS and other PAs as appropriate
GOOS, GCOS and external capacity building programmes
IOC TEMA programme

5. User Forum

Ad hoc seminars, workshops, conferences involving both data and service providers and users.
ANNEX IV

TERMS OF REFERENCE OF THE IGOSS/IODE STEERING GROUP
ON END-TO-END DATA MANAGEMENT SYSTEMS

The IGOSS/IODE Steering Group will operate a programme for the development of end-to-end data management systems for the collection and management of data sets required to support the variety of requirements including the Global Ocean Observing System with the following responsibilities:

1. In conjunction with user groups and data collectors, develop and specify QC, metadata standards, analysis procedures and data flows to provide the data required by the various international and regional users at the time-scales appropriate to their needs.

2. Design and implement data flow monitoring systems to ensure that the data are collected, processed and distributed according to agreed schedules and responsibilities. (Support the IPOs where appropriate).

3. Develop and ensure the production of data analysis and presentation products to provide the necessary data sets and graphic presentations to meet the needs of the variety of users including GOOS.

4. Design and implement electronic distribution standard and procedures to distribute the data sets and data products to users at time-scales consistent with their needs.

5. Recruit volunteer centres to undertake the work keeping in mind opportunities for sharing the workload and acquiring the required expertise to accomplish the tasks at hand.

6. Support where possible the relevant project offices including GOOS and CLIVAR in their data management endeavours.

7. Report to IGOSS and IODE.

[Notes:  
(i) From: IODE Officers Meeting, Goa, India, 10-13 February 1998  
(ii) These ToRs have still to be approved by (then) IGOSS, now JCOMM]

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