

WORLD METEOROLOGICAL ORGANIZATION



**COMPOSITE OBSERVING SYSTEM FOR THE
NORTH ATLANTIC (COSNA)**

COORDINATING GROUP FOR COSNA (CGC)

TWELFTH SESSION

HAMBURG, 29 - 31 AUGUST 2001



FINAL REPORT

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GENERAL SUMMARY OF THE WORK OF THE SESSION

1. ORGANIZATION OF THE WORK OF THE SESSION (agenda item 1)

1.1 Opening of the session (agenda item 1.1)

1.1.1 The meeting was opened at 9.00 a.m on Wednesday, 29 August 2001 in the *Bundesamt für Seeschifffahrt und Hydrologie (BSH)*, *Bernhard-Nocht-Strasse*, Hamburg, Germany, by the chairman of CGC, Mr M. Lystad. The list of participants is attached at the end of this report.

1.1.2 On behalf of the President of the *Deutscher Wetterdienst (DWD)*, Mr Udo Gärtner, the Head of the business unit for marine meteorological services, Dr. A. Kresling, welcomed the participants to Hamburg, to the DWD and to the BSH. He considered that Hamburg and the BSH, the Federal Agency for Shipping and Hydrology, was a particularly appropriate location for a meeting of the CGC. Mr Kresling recalled that CGC was set up in 1990 to ensure the co-ordination of observing programmes over the North Atlantic and in order to provide sufficient observational data of good quality which were of the utmost importance for weather forecasting in Europe. The workshops and impact studies organized by CGC and its SEG were unique in their field and had proved to be extremely successful and useful. CGC could, he said, be proud of its 11 years of activities and he hoped that these would not diminish as they are taken over by EUMETNET. He hoped that the facilities provided for the meeting would be found satisfactory, that the meeting would be successful, and that the participants would enjoy their stay in Hamburg.

1.1.3 The Chairman expressed his thanks to the DWD for the invitation to hold the meeting in Hamburg and for its continuing support and contributions to the work of CGC. He was pleased to note that a large number of countries were represented at the meeting as were most of the groups dealing with the individual observing systems comprising COSNA. He also appreciated the presence of representatives of EUCOS and of NAOS, the North American Atmospheric Observing System. He welcomed also Dr Volker Wagner (Germany) as chairman of the European Group on Ocean Stations (EGOS), who had kindly agreed to give a special talk to the meeting on "VOSCLIM – an upgrade of the VOS system". Mr Lystad recalled that the CGC had as one of its tasks the periodic review of the need for and the aims of the CGC, and, in this connection, referred to the document, prepared for the meeting by the Management Group, in which the future of COSNA and CGC and the planned merger with EUCOS and EUMETNET were discussed.

1.2 Adoption of the agenda (agenda item 1.2)

1.2.1 It was agreed that "THORPEX" would be introduced as a new item after item 4.1 and that an update on the EUCOS/CGC ASAP Study would be included in the former item 4.2 (now 4.3) on EUCOS.

1.2.2 Arrangements were made for scientific presentations by Dr. Volker Wagner on "VOSCLIM - an upgrade of the VOS system", and by Dr. Steve Lord on recent scientific studies being undertaken at NCEP and on the designation of Centres for Satellite Data Assimilation.

1.2.3 The agenda as adopted by the session is given in Appendix I.

2. REPORTS OF THE CHAIRMEN OF CGC AND SEG (agenda item 2)

2.1 Mr Lystad reported on the main activities of the CGC since its meeting in August 2000. These concerned primarily:

- the preparation of a letter to EUMETNET regarding the views of CGC on the eventual incorporation of COSNA in EUCOS; (a reply had been received in January 2001);
- the preparation of a letter to Italy encouraging its active participation in CGC (no reply had been received);
- the preparation of a feasibility study for the targetting of ASAP observations to be financed jointly by CGC and EUMETNET and the approval of expenditures from the COSNA Trust Fund of 75,200 SFR towards the implementation of the study, including the financing of additional observations in the Azores;
- the publication of an article on CGC-XI in the January 2001 issue of the WMO Bulletin;
- communication with CGC participants encouraging continued contributions to the Trust Fund until a planned transition to EUCOS was agreed;
- the publication of the proceedings of the Workshop on Impact Studies ;
- preparation of an information paper for the RA VI WG on WWW on the activities and status of CGC;
- contacts with WMO as regards administrative and secretarial support to CGC. (It was noted that arrangements had been made to recruit again Mr McCombie as a consultant);
- the organization and convening of annual sessions of the SEG and the Management Group of CGC (see below);

2.2 The Management Group of the CGC had held its twelfth session on 28/29 March in Geneva, at which all recently completed and ongoing activities had been reviewed and preparations were made for the twelfth session of CGC. Much of the session had been devoted to the consideration of the response of EUMETNET to the proposals and concerns of CGC-XII regarding the future merger of COSNA and EUCOS and the consequent transfer of CGC activities to EUMETNET, and to the preparation of a document on this subject for CGC-XII.

2.3 The chairman of the SEG, Dr Horst Böttger, reported that the main activities over the last year had been the preparation and publication of the proceedings of the second CGC/WMO Workshop on the impact of various observing systems on NWP and the convening of the eleventh session of the Group at ECMWF on 14-15 May 2001. Liaison had been maintained with EUCOS as a matter of course and with NAOS and THORPEX through contacts made at the AMS meeting in January 2001 and through the participation of NCEP at the SEG meeting in May. The chairman had participated in the session of CBS in November/December 2000 and, as a representative of ECMWF, had been nominated as a member of the Expert Team on Data Requirements and the Redesign of the GOS. A meeting of this Team had been held in Geneva in April 2001 where suggestions had been made for

seven global OSE's to be undertaken at NWP centres and the possibility discussed of holding a further workshop on observing system impact studies in 2003.

2.4 The SEG session had reviewed the follow-up actions on the Workshop as well as the results on recent impact studies many of which, while focussing on satellite data, had emphasized the value of surface data. The meeting had been informed of the NWP experimentation and impact studies which members intended to conduct over the next year or so. The SEG had reiterated its view that impact studies of COSNA and the GOS be continued as a matter of high priority. The CBS Expert Team proposals had included, *inter alia*, studies on the requirements for hourly SYNOP data, the usefulness of radiosonde observations in the tropics and for stratospheric analysis, and on the usefulness of AMDAR over Africa. Some of these proposals had been included in the plans of several NWP Centres.

3. STATUS OF COSNA (agenda item 3)

3.1 Consolidated status report (agenda item 3.1)

3.1.1 The meeting noted with appreciation the consolidated status report on the COSNA, prepared by Mr Bernd Richter, which reviewed the functional performance of the various operational components of the system. The report (see Annex II) had been compiled from selected information given in the reports of the monitoring centres of Météo-France, UK Met. Office, and ECMWF, so that deficiencies could be identified, long-term trends detected and appropriate action taken. The CGC expressed its appreciation to these centres, including the UK Met Office ASDAR Centre, for the continued availability of monitoring information.

3.1.2 It was noted that observational data available from the North Atlantic area continued to be generally of high quality. Data availability is, however, variable because of occasional operational and/or telecommunication problems and the natural variability of mobile platforms such as ships and aircraft actually operating in the region. The most significant conclusions from the review were:

- **GENERAL** The observational data in the COSNA-Area continue to be of high quality with respect to availability, quality and timeliness.
- **DRIFTING BUOYS** The number of Buoys was maintained at around 70 which was first reached in 1998. As regards the spatial distribution, there were, for the second consecutive year, more buoys south of 50°N than north of this parallel.
- **DRIFTING BUOYS** The data availability of drifting buoys remains high, even showing a slight improvement in 2000. However, data quality was not as good with 30% to 40% of buoys providing suspect observations. There was only a temporary improvement to 20% in mid 2000.
- **ASDAR** Another two units (British Airways) have been withdrawn from use in 2000 reducing the number of operational ASDAR units to 12 (further reduced to 11 by August 2001). These units do however provide data over areas where data coverage would otherwise be very low.
- **ASDAR** The performance (in terms of days with reports from each unit) remained at a level of 70%.

- **AMDAR** The number of AMDAR reports has already reached a high level with a continued slightly rising trend.
- **E-AMDAR** The E-AMDAR programme began implementation in 2000. Apart from providing a high number of reports of high quality, it offers a new flexibility allowing for selective data availability and providing vertical profiles of wind and temperature in the vicinity of airports.
- **ASAP** Two new ASAP units came into operation in 2000: the ASAP unit of the UK in January 2000 and that of EUMETNET in December. The latter is the first to operate in the Mediterranean and the first with a launch schedule which varies according to the distance of the ship from land based stations: when closer than 75nm launches are performed at 0600z and 1800z, otherwise at 0000z and 1200z..
- **ASAP** The data availability in terms of number of messages transmitted (by operators) and number of messages available at ECMWF generally correspond much better than in previous years. There are still, however significant differences with respect to German ships - 20 % less at ECMWF than given by the operator.
- **ASAP** The data quality remains high with only single ASAP TEMP reports mentioned in the suspect lists of the Monitoring Centres
- **ASAP** The deficit of TEMP wind reports compared to geopotential reports has not improved in the past year and remains at around 14%. For several ships there was a significantly higher than average deficit of wind reports (reference level 500 hPa).
- **ASAP** There are some ships well below average number of reports of wind and/or geopotential at the higher standard levels.

3.1.3 Noting that the Ocean Weather Ship Mike continued to operate satisfactorily and provide valuable data, the CGC expressed its appreciation to Norway, the operating country, as well as to Germany which is providing financial support. The continued operation of Ekofisk, the observing platform in the North Sea, also operated by Norway, with the financial support of the countries bordering the North Sea, was also noted with satisfaction.

3.2 Additional reports on system components (agenda item 3.2)

ASAP

3.2.1 On behalf of Mr K. Hedegaard, chairman of the ASAP Panel, who was unable to attend the meeting, Mr F. Gerard reported on ASAP activities. The ASAP programme continued to be efficient, providing high quality upper-air data from the data sparse ocean areas at a fairly low unit cost. However, there continued to be apparent data losses in some cases on the GTS, with discrepancies between the number of reports said to be transmitted by operators and those actually received at NWP Centers. It was agreed that Meteo France as the ASAP Monitoring Center, in consultation with DWD and EUMETSAT, would conduct a study to fully identify and resolve this long-standing problem. The communication of the reports through INMARSAT-C continued to be highly efficient and effective with close to 100%

reliability.

3.2.2 The total number of systems deployed at the end of 2000 was 21, the same as in 1999. The 21 systems were operated by: Denmark (2 units), EUMETNET (1 unit) France (4 units), Germany (2 units), Japan (7 units), Russia (1 unit), Spain (1 unit) Sweden/Iceland (1 unit), UK (1 unit) and the USA (1 unit). It was noted that, globally, there had been a decrease of 22% in the number of soundings made compared to 1999 and the total of 4,416 was the lowest for 7 years. This was largely due to significant drop in the number of soundings carried out by the USA, but several others also showed reduced numbers. The Sweden/Iceland ASAP had stopped operating in August 2000 but had now been transferred to a new ship and had just restarted operations in July 2001.

3.2.3 The meeting noted with satisfaction that over half of the total number of ASAP units were operating in the COSNA area and that there was expected to be a further increase on activity in 2001 because of the operation of new ASAP units, particularly the EUMETNET unit on a USA ship operating between the Europe and the USA Eastern Seaboard which had started in July 2001, and also through the EUCOS/CGC experiment aimed at testing the targeting of ASAP observations.

3.2.4 It was also noted that a new type of sonde with an improved GPS processing system was being tested on one of the French ASAPs. As this allowed direct calculation of height, it may be possible to dispense with pressure sensors and may lead eventually to less expensive sondes, although this was not yet the case.

3.2.5 Finally the CGC was informed that the ASAP Panel had now become part of a JCOMM group dealing with observations from ocean areas. The Panel would however retain its current membership and terms of reference.

EGOS

3.2.6 Dr Volker Wagner (Germany), introduced the intersessional report of EGOS highlighting the availability and mostly good quality of data from the EGOS network of drifting and moored buoys. The number of drifting buoys at the end of each month during the period August 2000 – August 2001 was between 41 (minimum) and 55 (maximum). The distribution and good data availability from the buoys meant that they accounted for a great majority of surface based observations in the North Atlantic. All EGOS drifting buoys observe air pressure and SST and about 50 % of the buoys measure air temperature, with about 10% also having wind sensors. The quality was generally improving and the average operational life-time, improved to 318 days (334 days exclusive of early failures). The reason was a pronounced quality improvement with the SVP-B drifters, a reduction of the early failure rate and the use of a new "common" reporting format for buoys, which seemed to be an effective way of increasing observation quantity and quality and making better use of the battery capacity of each buoy.

3.2.7 A special feature in the first half of 2001 was a marked intensification of the North Atlantic circulation catching the buoys with the effect of increasing lifetime and of fewer buoys running ashore at the eastern boundaries of the EGOS area.

3.2.8 It was noted that the deployment of buoys by aircraft had been introduced giving EGOS more flexibility in its deployment strategy. The same is true for the GPS location technique which had proved to be successful regarding cost and quality. It was reported, that there was no change in the reception rates of buoy reports depending on latitude – poorer

reception at lower latitudes – and also on the time of day due to the satellite constellation, with very poor reception around midnight.

3.2.9 It was further noted that there were now twelve moored buoys with extended observing programmes operating in the Eastern Atlantic. In this connection it was requested that wave data, including spectral information, be made available, preferably in real-time, for the assimilation of the data and for model verification.

AMDAR/ASDAR

3.2.10 The Technical Co-ordinator of the AMDAR Panel, Mr Jeff Stickland presented his report on the current status of the WMO AMDAR Panel and its programmes including ASDAR. It was noted with appreciation that AMDAR continues to advance globally as existing national and regional programmes expand and mature, as new developing programmes approach the operational phase and still more programmes are being considered or planned. New cooperative programmes of targeted observations have commenced. Highlights include the commencement of an operational programme by South Africa, steps being taken by Hong Kong and Morocco to commence new programmes, and the imminent commencement of operational programmes by Canada and Saudi Arabia. The USA is proposing to initiate a large programme of targeted observations over the region including the Caribbean, Gulf of Mexico and Central America.

3.2.11 It was noted that the AMDAR Panel had taken a number of initiatives to assist countries contemplating new AMDAR programmes, to improve the exchange of data and to establish a new international standard specification for onboard software in collaboration with the avionics industry. An informative AMDAR Reference Manual had been completed and would be published by WMO by early 2002. As already noted, the operational ASDAR programme was continuing to decline but the ICAO ADS Met reporting project would not be operational for several years. There had been a noticeable trend towards the use of smaller regional aircraft. Development of a turbulence reporting system and new generation of humidity sensors continues in the USA. New regional bulletin headers for the exchange of AMDAR data on the GTS were being prepared for approval and adoption by WMO. The involvement of the global monitoring centres in data quality matters continued but the work of the US Naval Research Laboratory and FNMOC had been particularly helpful.

3.2.12 It was recognized that the cost of observations continued to be a limiting factor in establishing and operating AMDAR programmes, with each participating airline having its own special arrangements / contracts. The median communications price per observation is US 4 cents but some airlines impose substantial installation and operational charges. The AMDAR Panel was continuing to negotiate a global pricing agreement with the two largest communications providers. It was noted, finally, that a solution to overcome the security of aircraft communications was being addressed by the aviation industry.

Satellites

3.2.13 The representative of EUMETSAT, Mr Sean Burns, informed the meeting of the current status of the operational satellite system. He reported that Meteosat-5 was still at 63°E, supporting the IODC (Indian Ocean Data Coverage). Approval has been granted for the extension of the service until the end of 2003 and this will be reviewed again in the middle of next year as it is technically feasible for the service to continue until mid 2005. Meteosat-6 continued as the in-orbit spare to support Rapid Scan trials, and will support a quasi-

operational Rapid Scanning Service (limited scanning of North Atlantic/Europe with 3 scans per half-hour slot and 2 sets of 72 hours per week) as from 1 November 2001. METEOSAT -7 continued to be used as the prime operational satellite at 0° longitude.

3.2.14 High Resolution Water Vapour winds had been available operationally since 16 March 2000. The product is produced every 1.5 hours but hourly products will be available very soon. Clear Sky Radiances with cloud fraction and quality control information are produced hourly. A number of new products are planned for the near future including quality indicator definition for wind products and Clear Sky Radiances, Multi-sensor Precipitation Estimate. Wind products will also be produced from METEOSAT-6 rapid scans. The ATOVS Re-transmission Service is scheduled to start in mid 2002.

3.2.15 As regards the future geostationary meteorological satellite systems, it was noted that the first launch of the Meteorological Second Generation (MSG) programme was planned for July 2002. It is planned to operate the new system in parallel with the present METEOSAT system for an overlap period at least until the end of 2003. The development of the EUMETSAT Polar System data is progressing with first launch currently planned for mid 2005. Information regarding the Satellite Application Facilities (SAFs) for the MSG and EPS programmes can be found on the EUMETSAT web-side

Ship Reports

3.2.16 Under this item Dr Peter Francis (UK) presented a short report on the quality of wind and pressure reports from Voluntary Observing Ships as identified by the UK Met. Office's Global NWP model. (No statistics were available for the COSNA area alone). It was noted that the number of ship reports per day had remained fairly constant at around 2500 to 3000 and that the number of flagged reports for pressure (4-5%) and for wind (2%) had also remained approximately constant over the two monitoring periods in March-May 1999 and April-June 2001. Comparisons with earlier flagging rates showed that there had been no real change over the past 8-10 years. It was also noted that the number of suspect ships in the 6-monthly "Report on the Quality of Marine Surface Observations" had remained much the same at around 55-70 although there had been a slight upward trend through 1999 and 2000 to 92 ships but that still represented only about one percent of the total number of ships reporting.

3.2.17 It was noted that EUMETSAT would work closely with the ASAP monitoring centre set-up by Meteo France to address the corruption of ASAP DCP messages and duplication of these data on the GTS.

3.3 New Observing Systems (agenda item 3.3)

3.3.1 Under this item reference was made to an aerosonde demonstration to be organized by EUCOS (see para. 4.3.2 below) and to the proposal to integrate the operation of existing windprofiler systems into a EUMETNET Wind Profiler Network Programme with the aim of standardizing the operational exchange of profiler data. The proposal had still to be considered by EUMETNET Council.

3.3.2 The CGC was also informed of the development of a computer-aided system (Turbowind) of entering observational data aboard ship to improve the quality of SHIP reports through the avoidance of simple keying errors. A fully automated system (BATOS) of observing, processing and transmitting SHIP observations (with observer input for present

weather) had also been developed by France and was now operational aboard some 20 ships. A similar system (Auotomet) was also being tested by Norway.

4. OTHER OBSERVING PROGRAMMES/SYSTEMS (agenda item 4)

4.1 North American Atmospheric Observing System (NAOS) (agenda item 4.1)

4.1.1 The Director of the Environmental Modelling Centre of the United States National Centre for Environmental Prediction, Dr Steve Lord, presented a brief overview of NAOS. NAOS had been established in 1996 primarily to provide the scientific basis for and to define the best mix of observing systems/observations. The initial focus was on upper-air observations and a number of data sensitivity tests on upper-air observing techniques had been or were being carried out. These included in particular the possible replacement of conventional radiosoundings by AMDAR (completed but not implemented), targeted observations (completed and results implemented), targeted observations for hurricanes (in progress), wind profilers (in progress) and satellite wind LIDAR (in early stages).

4.1.2 A more recent initiative was the consideration of the need for and benefits of a mesoscale observing system, the vision being "to create a significant jump in the information content of the mesoscale observational data base and fully exploit this information for the improvement of forecasts of high impact weather events". Initial emphasis was being placed on the Planetary Boundary Layer where it was felt there was the largest unmet need for observations for the forecasting of such events. While precisely which elements were to be measured and with what instruments had still to be determined, it was planned to conduct a number of pilot projects as part of a basic design strategy in areas specially selected as being prone to natural disasters, where there was a history of other projects/studies and where there was a significant direct impact of weather events on society and, finally, where there was likely to be state or national support. The projects would include the phased implementation of new technology in observing systems and data processing, communications and data assimilation. The next steps in 2002 would be the organization of two workshops and the refining of mesoscale observing concepts. The long-term aim was to define the best mix of observations for a mesoscale network by 2010.

4.1.3 As regards the Meteorological Data Collection and Reporting System (MDCRS) from aircraft, currently providing 85,000 observations per day over North America, of which about 10% were high resolution vertical profiles, it was noted that the immediate plans for expansion included consideration and support for the new Water Vapour Sensing System, greater focus on installing systems on regional carriers and the development and implementation of Tropospheric Airborne Meteorological Data Reporting (TAMDAR).

4.2 THORPEX (agenda item 4.2)

4.2.1 The meeting was briefed by Dr. Lord on the status of THORPEX (The hemispheric observing, research and predictability experiment), the primary objective of which was to test the hypothesis that the accuracy of Northern Hemisphere cool-season NWP forecasts up to 10 days ahead can be significantly improved by additional observations in critical areas of the extra-tropical oceanic storm tracks and other remote data sparse areas; and also that cost effective new in situ observing systems could be developed to provide these new observations. It has been conceived as a 5 to 10 years programme and would include the development of advanced data assimilation systems, OSEs and OSSEs to evaluate current and future observing systems, predictability studies, adaptive observation strategies and observing system design.

4.2.2 Mr Gérard added that a Euro-THORPEX planning meeting had been organized in Bracknell in July 2001 with the participation of most of the European NWP Centres and the EUCOS Programme Manager. Although details of the design and extent of the Euro-THORPEX were still evolving, it was noted that field programmes were planned for the North Atlantic Ocean in 2003 when co-ordination with observation systems such as COSNA and EUCOS would be called for. It was recognized that THORPEX was of interest to COSNA and EUCOS in that it could contribute to the testing of relevant new observing systems and provide other tools in network design. EUCOS was therefore considering support to a European THORPEX project for possible EC funding. The Chairman of SEG was requested to keep himself informed of progress in this experiment.

4.3 EUMETNET Composite Observing System (agenda item 4.3)

4.3.1 At the request of the meeting Mr François Gérard, the EUCOS Programme Manager, gave a brief overview of the purposes, structure and present status of EUCOS (see also para. 5.5 below). He also briefed the meeting on the current activities and immediate plans for the development of EUCOS. He referred to the ASAP study to be carried out over a two-month period in September and October 2001, and to which CGC was contributing 50% of the costs. The study would help in the development of new adaptive (in space and time) observation strategies over the Atlantic in areas previously identified as sensitive for forecasts up to 48 hours over Europe. The study was essentially one of logistics in implementing such a strategy but the opportunity would be taken to study the potential impact of the increased number as well as time and space-variable observations.

4.3.2 Mr Gérard also informed the meeting of an Aerosonde demonstration which would take place over an area of the Atlantic west of Portugal in February 2002. Over a period of four weeks four aerosondes would be flown for a total of 100 hours on pre-programmed flight plans up to 6000 metres in altitude. Data would be distributed in real-time on the GTS in the form of AMDAR messages.

4.3.3 Reference was also made to sensitivity studies which highlighted areas in the North Atlantic where surface pressure measurements may have an impact on forecasts over Europe. These studies could be used, for example, in deciding on the locations of drifting buoy deployment.

5. FUTURE OF CGC AND SEG (agenda item 5)

5.1 A discussion paper on the future of CGC and SEG was presented by the chairman on behalf of the Management Group. The paper reflected the deliberations of the CGC/MG on the future of CGC following the response of EUMETNET to the views expressed by CGC-XI in August 2000.

5.2 The meeting recalled that at its eleventh session the CGC had reiterated its view that at some time in the near future COSNA should be subsumed in EUCOS and that the activities of CGC should be undertaken by an appropriate mechanism within EUMETNET. It was agreed at the time however, that such a transition was not then opportune for the two main reasons that EUCOS was not operational and that the infrastructure for the adequate consideration and management of an operational network – especially its marine component – was not in place. It had been agreed that CGC should continue to exist with unchanged terms of reference until such time as:

- (a) EUCOS becomes an operational system;
- (b) satisfactory arrangements are made for the marine component of EUCOS;
- (c) adequate provision is made for the monitoring of the entire system;
- (d) arrangements are made for scientific evaluations to be continued under the aegis of WMO/CBS-CAS and/or EUCOS;
- (e) close contacts and coordination are assured between EUMETNET/EUCOS and other bodies dealing with observing systems and networks.

5.3 It was noted with satisfaction that in order to move the integration process further, the chairman of CGC, as requested by the eleventh session, had conveyed these views to EUMETNET seeking an indication of how and when these conditions might be met. The CGC Management Group had discussed the response of EUMETNET at its twelfth session in March 2001 and had formulated its conclusions and recommendations on the matter.

5.4 The CGC appreciated that, although it had not been possible for EUMETNET to be precise in every case about when the CGC conditions might be met, there was a positive approach to most of the issues raised. The CGC noted in particular that the marine surface component of EUCOS was currently being considered as part of the detailed design although the question of whether the drifting and moored buoys and the VOS would be jointly operated in an integrated EUCOS programme had yet to be decided. Assurances were given that activities similar to those carried out by the CGC as regards monitoring and liaison with other bodies dealing with observing systems and networks were already underway and could only be amplified as EUCOS activities increase.

5.5 This was reinforced by the Programme Manager of EUCOS who reported that the design of EUCOS had now been agreed upon and that decisions on cost sharing were expected later in the year. He informed the meeting of the proposed infrastructure for the adequate consideration and management of an operational, observational network including a marine component and explained the arrangements being made for monitoring the operation of the system, for scientific evaluations – relevant to EUCOS – and for cooperating and coordinating with other bodies dealing with observing systems and networks.

5.6 On the important question of the operational status of EUCOS the CGC noted with satisfaction that the operational phase would begin in 2002, and that the entire system was expected to become fully operational in 2003.

5.7 As regards of arrangements being made for scientific evaluations to be continued after the closure of CGC and, as a consequence, of SEG, the meeting noted that there was no intention to establish within EUMETNET any mechanism to carry out these activities on a world wide basis. However, it was noted with particular satisfaction that at its session in November/ December 2000, the WMO Commission for Basic Systems had appointed two Rapporteurs, within its Open Programme Area Group on the Integrated Observing System, to monitor regional and global OSEs and OSSEs on a world wide basis. The CGC felt that this was a good first response to the CGC/SEG proposals and that future activities in this regard could follow from the work of the CBS Rapporteurs.

5.8 In this connection, Mr Dieter Schiessl, Director of the WWW Basic Systems Department in the WMO Secretariat recalled that the re-design of the Global Observing

System was one of the Organization's highest priorities and that this was a task of CBS. He very much encouraged the idea of the SEG activities in general, and impact studies in particular, being incorporated in the GOS re-design work but felt that it may not be advisable to depend only on the work of the two rapporteurs for that to actually happen. He considered that more formal arrangements for the transfer of the Group and its activities to CBS would be required, especially with a view to securing the necessary funding for meetings, workshops, etc.

5.9 It was proposed that this might be achieved through the WMO Regional Association for Europe, which was due to meet in May 2002, and which might be encouraged to request CBS to incorporate the SEG, through any appropriate mechanism, in its work on the re-design of the GOS. It was agreed that a document on this subject would be prepared by the Management Group for submission to RA VI.

5.10 The CGC also discussed in this connection the issue of the COSNA Trust Fund, particularly in the light of the decision of Denmark to cease making annual contributions. It was noted with appreciation that all the other regular contributors had made their payments for 2001 and that none had expressed any intention to stop payments in the immediate future. In the light of the discussions on the transfer of activities to EUMETNET, it was decided that participants in CGC be invited to contribute to the fund for one more year only, i.e. 2002. No contributions would be called for in 2003, as sufficient funds would remain to provide for CGC costs for that year and a further year or two if necessary. A decision on the disposal of any remaining resources need not be taken until 2003.

5.11 In conclusion, the CGC agreed that a positive step forward had been taken since its last session towards the eventual integration of COSNA and EUCOS. Although a precise timetable for the handing over of CGC activities to EUMETNET could not yet be established, it was felt that the earliest date on which a final decision could be taken by CGC to conclude its affairs would be August 2003 (at its fourteenth session). By then, it was expected that, experience will have been gained with an operational EUCOS taking over the monitoring of all current COSNA components as well as in developing the surface marine component. It decided, therefore, that this be adopted as the target date for a decision on the actual transfer of CGC activities to EUMETNET either immediately or at some specified later date.

6. ADMINISTRATIVE AND FINANCIAL MATTERS (agenda item 6)

6.1 Status of the CGC Trust Fund (agenda item 6.1)

6.1.1 The meeting noted with regret that, at the beginning of the year, Denmark had notified the Chairman of its intention to cease contributing to the Fund. The following contributions to the Fund had been received in 2001:

Germany	30,000	DM
Iceland	500	SFR
Netherlands	7,000	SFR
Norway	9,000	SFR
Portugal	1,500	SFR
Sweden	6,800	SFR
Switzerland	10,000	SFR
UK	5,000	GBP

6.1.2 As regards expenditures, the session noted in particular that a total of just over SFR

75,000.- had been allocated to support the EUCOS/CGC ASAP Study and the associated additional observations in the Azores. The balance of the Fund stood at SFR 234,790. The statement of account of revenue and expenditure as given in Annex III was accepted by the meeting.

6.2 Approval of the budget proposal for the year 2001-2002 (agenda item 6.2)

consideration was given to the prospective expenditures for the year 2001-2002. It was noted that the funds allocated for the ASAP study would not actually be spent until later in 2001. A further SFR 59,000 in total was set aside for the customary preparation of the monitoring report, administrative and support costs, travel and per diem for CGC officers etc. Taking into account the anticipated contributions from Members, the meeting adopted the budget as shown in Annex IV.

6.3 WMO support to CGC (agenda item 6.3)

he meeting was informed that the staffing situation in the WWW Department of the WMO Secretariat was such that it was not in a position to resume full administrative support for the CGC without the assistance of an outside consultant. The meeting agreed therefore to make provision for the services of a consultant and requested the Chairman to make the necessary arrangements with the Secretariat.

7. FUTURE WORK PLAN OF CGC (agenda item 7)

In the light of the discussions on the preceding agenda items, the meeting agreed on the following action items for the next intersessional period:

- (a) WMO Secretariat to notify PRs of contributing countries of the CGC decision not to seek contributions after 2002 (September 2001);
- (b) The Chairman to send a letter to EUMETNET conveying the conclusions of CGC (para 5.11 above) on the transfer of activities to EUMETNET.(September 2001);
- (c) Preparation of document for RA VI session in May 2002 on transfer of SEG activities to CBS (February 2002);
- (d) CGC/MG to consider the results of the ASAP Study (April 2002);
- (e) CGC/MG to consider the results of the EUCOS aerosonde field experiment (April 2002);
- (f) Recruitment of consultant to assist with admin. and other support for CGC (January 2002);
- (g) Invoices for annual contributions to be sent out by Secretariat as usual (January 2002);
- (h) Management Group meeting (April 2002);
- (i) SEG meeting (May 2002);
- (j) Preparation of the COSNA Monitoring report (with focus on conclusions, trends and

problems);

- (k) Meteo France to conduct end-to-end monitoring of ASAP ship reports to identify and resolve, in liaison with DWD and EUMETSAT, data communication problems (by August 2002);
- (l) Chairman to notify ASAP Panel of the problem of some ASAP units not reaching 100hPa (October 2001);
- (m) ECMWF to continue to prepare special section on COSNA monitoring in monthly reports with comprehensive statistics on data availability (ongoing);
- (n) Chairman of CGC and SEG to maintain contacts with NAOS and other bodies and programmes (e.g. THORPEX) with activities relevant to the work of CGC (ongoing);
- (o) SEG to identify, in cooperation with EUMETNET/EUCOS as appropriate, scenarios for impact studies as a basis for network design (ongoing),

8. ELECTION OF CHAIRMAN AND VICE-CHAIRMAN (agenda item 8)

The meeting re-elected by acclamation Mr M. Lystad (Norway) and Dr. G. Steinhorst (Germany) as chairman and vice-chairman, respectively, of CGC. It was noted with appreciation that Dr H. Böttger would continue as chairman of SEG.

9. OTHER BUSINESS (agenda item 9)

Date and place of next meeting

Accepting with appreciation the kind offer of the Iceland, the CGC decided that its thirteenth session should be held from 28 to 30 August 2002 in Reykjavik.

10. CLOSURE OF THE MEETING (agenda item 10)

The chairman thanked the participants for their contributions to what he felt had been a very interesting and successful meeting conducted in an excellent spirit of cooperation. He thanked the DWD for having provided excellent facilities for the meeting.

The meeting closed at 1200 hours on Friday, 31 August 2001.

AGENDA

1. ORGANIZATION OF THE MEETING
 - 1.1 Opening
 - 1.2 Adoption of the agenda
 2. REPORTS BY THE CHAIRMEN OF CGC AND SEG
 3. STATUS OF COSNA
 - 3.1 Consolidated status report
 - 3.2 Additional reports on system components
 - 3.3 New Observing Systems
 4. OTHER OBSERVING PROGRAMMES/SYSTEMS
 - 4.1 North American Atmospheric Observing System (NAOS)
 - 4.2 THORPEX
 - 4.3 EUMETNET Composite Observing System (EUCOS)
 5. FUTURE OF CGC AND SEG
 6. ADMINISTRATIVE AND FINANCIAL MATTERS
 - 6.1 Status of the CGC Fund
 - 6.2 Approval of the budget proposal
 - 6.3 WMO support to CGC
 7. INTERSESSIONAL WORK PLAN OF CGC
 8. ELECTION OF THE CHAIRMAN AND VICE-CHAIRMAN
 9. ANY OTHER BUSINESS
 10. CLOSURE OF THE MEETING
-

Consolidated Monitoring Report
on COSNA - Components
2001

This report may be found at: <http://www.wmo.ch/web/www/OSY/reports/cosna2001.pdf>

World Meteorological Organization
Coordination Group on COSNA
Interim Account as at 31 July 2001

	<u>SFR</u>	<u>SFR</u>
Balance of Fund at 1 January 2000	301,743	
Contributions	148,166	
Interest earned	13,499	
Credit from Prior Years' Expenditures	<u>576</u>	
Total revenue		463,984
Obligations incurred		
Symposium on Observing System Impact Studies	44,389	
Coordination Group on COSNA 11th Session of the CGC Mgt Group	6,516	
Coordination Group for COSNA 11th Session	9,842	
Coordination Group for COSNA 12th Session of the CGC Mgt Group	7,409	
Coordination Group for COSNA 12th Session	9,630	
Consultants	42,025	
EUCOS/ASAP Study	32,500	
ASAP Study - Portugal	42,708	
Mission Travel - - ticket, per diem, other (WMO staff)	2,679	
Mission Travel - - ticket, per diem, other (non WMO staff)	13,878	
Public Information	<u>17,618</u>	
		229,194
Balance of Fund at 31 July 2001	SFR	<u><u>234,790</u></u>
Represented by:		
Cash at Bank		#REF!
Less: Unliquidated Obligations		#REF!
	SFR	<u><u>#REF!</u></u>

Contributions received (in SFR)

	<u>2000</u>	<u>2001</u>	<u>Total</u>	
Denmark	5,000		5,000	
Germany	24,413	23,620	48,033	
Iceland	500	500	1,000	
Netherlands	7,000	7,000	14,000	
Portugal	1,500	1,500	3,000	
Norway	9,000	9,000	18,000	
Sweden	6,800	6,805	13,605	
Switzerland	10,000	10,000	20,000	
United Kingdom	13,571	11,957	25,528	
Total	<u><u>77,784</u></u>	<u><u>70,382</u></u>	<u><u>148,166</u></u>	148,166

**PROPOSED EXPENDITURES
CO-ORDINATING GROUP FOR THE COSNA**

1 September 2001 to 31 August 2002

	Seconded experts:	14,000 SFR
Production of the consolidated monitoring report		
	Contribution to EUMETNET/EUCOS:	32,500 SFR *
ASAP Study		
	Increased obs. in Azores:	42,700 SFR*
As agreed by CGC-XI		
	Travel/CGC and SEG:	15,000 SFR
Travel and per diem of chairman and vice-chairman of CGC, chairman of the SEG, and invited experts as may be agreed,		
	Staff costs/Consultant services	20,000 SFR
To assist in preparation and support for CGC/MG session in Spring 2002 and for CGC-XIII in August 2002		
	WMO Administration:	5,000 SFR
The cost of administrative support to the CGC such as personnel and travel unit staff time, mailing and communications.		
	Contingency:	5,000 SFR
September 2001 to August 2002 (12 Months)		
	Total Expenses:	134,200 SFR
Less: *funds already obligated in accounts to 31 July 2001		(75,200 SFR)
	Total cost to Trust Fund	59,000.SFR

World Meteorological Organization

**Trust Fund for the Coordination Group on the COSNA
(In Swiss Francs)**

PROJECTED ACCOUNTS **September 2001 to August 2002
(12 Months)**

Beginning Balance **234,790**

Deposits Expected

Contributions	70,000*
Interest	5,000

Subtotal **75,000**

* estimated

Budget Obligations

Seconded experts	14,000
Travel	15,000
Staff costs	20,000
WMO Administration	5,000
Contingency	5,000

Subtotal **59,000**

Cash contributions

2002 (anticipated)

Germany	30,000	DM
Iceland	500	SFR
Netherlands	7,000	SFR
Norway	9,000	SFR
Portugal	1,500	SFR
Sweden	6,800	SFR
Switzerland	10,000	SFR
UK	5,000	£

Projected balance August 2002 **250,790 SFR**

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