CEOS
Committee on Earth Observation Satellites
http://www.ceos.org

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NEWSLETTER
No. 13

CONTENTS

CEOS Strategic Implementation Team Moves Forward

Mr. Robert S. Winokur, SIT Chair
Dr. D. Brent Smith, SIT Organizing Committee, NOAA
Ms. Linda Moodie, CEOS Secretariat, NOAA

The CEOS Strategic Implementation Team (SIT), which has been tasked by CEOS and the Integrated Global Observing Strategy (IGOS) Partners to design and implement the space component of an IGOS, met at the U.N. Food and Agriculture Organization (FAO), Rome, Italy, June 9, 1999, the day following the 3rd IGOS Partners meeting. CEOS is one of several Partners in the IGOS Partnership, established in June 1998.

The SIT welcomed the strong steps taken at the third IGOS Partners meeting toward the development of an IGOS. Key decisions were made with regard to adoption of a themes approach and agreement on criteria for activities to be undertaken under the IGOS Partnership. It was clarified at SIT that for all future theme-related activities, a lead organization and potential partners should submit a proposal, addressing the stated criteria, to the Chair of the next IGOS Partners meeting and the IGOS Liaison Group. The criteria state that scientific, application, and/or operational needs can be the basis of a theme or project(s) within a theme.

Oceans Theme

The SIT met with the leader of the first IGOS theme team, focused on oceans, to which the IGOS Partners had agreed the previous day. As the SIT had originally established oceans as a prototype theme in January 1999 to illustrate how the thematic approach might work, the SIT explored the progress thus far and the team's plans to hold a joint meeting with the G3OS Space Panel (GOSSP) in August 1999. See related article on Page 4.

The team expects to have its report, including recommendations, ready by October prior to the IGOS Partners and CEOS Plenary meetings in November 1999. GCOS stated it would like to take the IGOS Oceans Theme paper forward to the Conference of the Parties (COP-5) of the Framework Convention on Climate Change and urged that it be ready by that time. CNES agreed to facilitate holding an information session on the Oceans Theme paper at the October conference, Ocean Obs 99, in Saint Raphael, France.

Other Themes

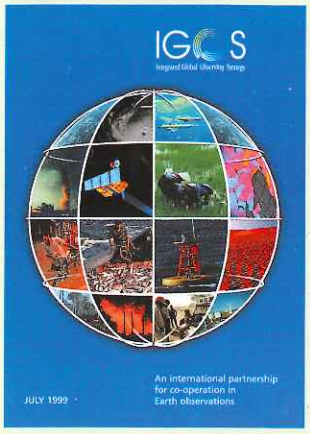
Several IGOS Partners indicated their interest in supporting other themes. NOAA proposed the development of a proposal for a Disaster Applications Theme, welcoming the participation of others. CNES, CSA, EC, and ESA indicated strong support, and the SIT encouraged NOAA to develop the DMS Theme proposal with other interested parties and submit it to IGOS-P. NOAA noted that FAO and UNESCO have also expressed interest in this theme. It was noted that the challenge was how to engage and confederate the diverse user community, especially since this thematic area generally lies outside the purview of the G3OS and GOSSP.

GTOS stated that the GTOS/GCOS Terrestrial Observations Panel for Climate will consider a proposal for an IGOS cross-cutting Carbon Cycle Theme. Potential partners are GTOS and FAO with CCRS, CSA, the EC Joint Research Centre, the Global Observation of Forest Cover pilot project, IGBP, NASA, and WCRP. The SIT encouraged CSA and CCRS to work with GTOS/FAO on the Carbon Cycle Theme.

With regard to the initial IGOS pilot projects, SIT expects the following transition:

- Global Ocean Data Assimilation Experiment will be a part of the Oceans Theme;
- Ocean Biology will be a part of the Oceans Theme;
- Disaster Management Support will be part of the anticipated Disaster Applications Theme;
- Global Observation of Forest Cover will be part of the anticipated Carbon Cycle Theme;
- Long-term Continuity of Ozone Measurements will be part of a potential Atmospheric Chemistry Theme;
- Upper Air Measurements will transition to the WMO Open Programme Area Group for Integrated Observing Systems.

(to be continued on Page 5)



What is IGOS?
What is IGOS Partnership?

The answers to these questions and much more can be found in the new IGOS brochure - produced by STA/NASDA as a contribution to the work of CEOS/IGOS - and distributed with the 13th CEOS Newsletter.
Please take time to review it.

http://nasda.ceos.org/igos_brochure.pdf

IGOS Partners Meet in Rome, Italy.

Dr. He Changchui, FAO
Mr. Jeff Tschirley, GTOS

The third meeting of the IGOS Partners was held at the Headquarters building of the Food and Agriculture Organization of the United Nations (FAO) in Rome, Italy on 8 June 1999. Louise O. Fresco, Director of FAO's Research Extension and Training Division chaired the meeting which was attended by representatives from space agencies, the global observing systems and the global science community.

The participants were welcomed to FAO in an opening address by Henri Carsalade, Assistant Director-General of FAO's Sustainable Development Department who called on the partners to emphasize the human dimension in their work; to give special attention to the needs of developing countries; to close the gap between terrestrial observations and the atmosphere and ocean observations; and to undertake direct dialogue with end users.

All partners who were initially invited to joint the IGOS Partnership have now confirmed their participation. Thus, the IGOS Partners group now consists of representatives from CEOS, FAO, GCOS, GOOS, GTOS, ICSU, IGBP, IGFA, IOC of UNESCO, UNEP, UNESCO, WCRP and WMO.

Information and Communication

In this early phase, the partners are developing mechanisms for communicating the IGOS goals, objectives and activities to different audiences. An IGOS brochure has been prepared and will be available in mid-July. An "umbrella" document which describes the Integrated Global Observing Strategy has been revised and is available on the web at:
http://www.igospartners.org

FAO led the organization of an international Forum on IGOS as a parallel event to the UNISPACE III Conference in Vienna on July 21 (see related article on Page 3). A series of keynote address and presentations from Partners were made by the space agencies, international organizations and science community currently involved in the IGOS Partnership and addressed the various elements of IGOS. More information can be obtained at:
http://www.igospartners.org

The above web address is the official IGOS Partners home page and is undergoing further development and refinement. The partners also agreed to produce an IGOS bulletin twice per year in both paper and web versions. The first issue will follow the theme of climate change and be ready in the Autumn.

IGOS Activities

Defining and harmonizing the "in situ" and "space" components is fundamental to an integrated global observing strategy. Efforts are progressing on both aspects although the development of the terrestrial component is considerably more complex due, in part, to the central role of human beings in those systems.

A major objective of the IGOS partners meeting was to reach agreement on further development of joint IGOS activities. Along these lines, the Partners agreed to follow a themes approach within which various projects could be defined. Criteria for developing the themes were reviewed and consist of defining the role and responsibilities of key partners, milestones, evaluation criteria, and resources required.

The partners endorsed the themes framework and criteria and asked that a consolidated document be produced and available to the Partners as soon as possible in order to guide the development of additional IGOS themes. They also agreed that an "Ocean" theme should be further developed in time for review at the next IGOS-P meeting which would also consider proposals to develop other themes.

As the IGOS Partnership evolves it will become important to address data and information issues such as access, ownership, products, and quality. The Partners decided the matter should be further considered at their next meeting in November.

Contact with Users

There are a number of global policy fora that are potential users of observation data, information and products. Until now, they have never been approached systematically to understand their requirements and priorities. To start bridging this gap, the IGOS Partners decided to strengthen ties with the Convention on Biological Diversity (CBD), the Framework Convention on Climate Change (FCCC), and the Convention to Combat Desertification (CCD).

Contacts with the FCCC are already established on several fronts and it was decided to explore the possibility of presenting a briefing session at the next Conference of the Parties. It was also agreed to create an IGOS poster display based on the brochure and stressing the climate change aspects of IGOS.

The Commission on Sustainable Development (CSD) is another potentially important forum for IGOS and it was decided that their future sessions could provide opportunities to increase IGOS visibility among countries.

Conclusions

Given the challenges, progress in establishing the IGOS Partners group and putting it on an operational basis has been rapid and well focused. During the coming years there will be a continuing need to develop additional themes and projects. Based on present experience there is good reason to be optimistic.

The next meeting of the IGOS Partners will take place at the CEOS plenary which is scheduled for 10-12 November 1999 in Stockholm.

The report of the IGOS Partners meeting is available at:
http://www.igospartners.org

IGOS Partnership Forum at UNISPACE-III

Prof. John R.G. Townshend, *Univ. of Maryland*
Dr. He Changchui, *FAO*
Mr. Jelle U. Hielkema, *FAO*

Since the United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro in June 1992, which resulted in Agenda 21, an active process of structured coordination and synergistic convergence concerning of global, regional and national efforts in environmental data collection, analysis and synthesis has increasingly gathered momentum. Independently, a number of substantial cooperative mechanisms were established in response to the Agenda 21 recommendations and requirements for better environmental information at national, regional and global levels.

The Integrated Global Observing Strategy (IGOS) intends to unite the major satellite and surface-based systems for global environmental observations of the atmosphere, oceans and land. It is a strategic planning process, involving many partners, that links research, long-term monitoring and operational programmes, as well as data producers and users at technical and policy-making levels, in a framework that delivers maximum benefit and effectiveness.

IGOS focuses primarily on the observing dimension of the process of providing environmental information for decision-making. The strategy covers all forms of data collection concerning the physical, chemical and biological environments of the planet, as well as data on the human environment, on human pressures on the natural environment, and on environmental impacts on human well-being. It recognizes that data collection must be user driven, leading to information products that increase scientific understanding and guide early warning, policy-setting and decision-making for sustainable development and environmental protection.

IGOS provides the framework that enables data suppliers to respond to requirements that have been set by users. It involves processes that determine deficiencies, identify resources to remedy such deficiencies, and improve not only the observational programmes but also the various stages through which space- and ground-based observations are turned into useful information products. Finally the products and observations are monitored and analyzed to ensure they are fulfilling their goals.

The components of IGOS have considerable strategic importance, cutting across all observing activities. Major thrusts of IGOS, as it proceeds, will include: strengthening space-based and in situ linkages to improve the balance between satellite remote sensing and ground- or ocean-based observing programmes; encouraging the transition from research to operational environmental observations within appropriate institutional structures; improving data policies and facilitating data access and exchange; stimulating better archiving of data to build the long-term time series necessary to monitor environmental change; and increasing attention to harmonization, quality assurance and calibration/validation so that data can be used more effectively.

Lines of communication and dialogue are being established with the principal user groups and institutions to determine the needs for global environmental information for decision-making, including: international decision-making bodies such as the UN General Assembly, the Commission on Sustainable Development, and the conferences of parties to international and regional conventions; international organizations, convention secretariats, and international scientific advisory processes; national governments and their relevant ministries; decision-makers and senior advisors; the scientific community and international research programmes; the private sector; non-governmental and public service organizations; the media, journalists, and others specialized in communications; the general public, grass-roots users and major groups.

The IGOS Partnership, consisting of CEOS, FAO, ICSU, UNEP, IOC-UNESCO, UNESCO, WMO, IGBP, WCRP, IGFA and the Programme Offices of the three Global Observing Systems, GCOS, GTOS and GOOS, established in 1998, sofar held three meetings in Toulouse, Bangalore and Rome. The 4th meeting will be held in Stockholm in November 1999 in conjunction with the 13th CEOS plenary Meeting. IGOS is presently formulating its activities on the basis of a themes concept, for which in principle nine theme areas, being oceans, global net primary productivity, atmospheric chemistry and climate, weather prediction, coastal zones, disaster management, terrestrial carbon cycle, climate impacts and climate variability and change and the water cycle have been identified.

Under the coordination of FAO, an International Forum on IGOS was organized by IGOS partners as a special parallel event to the UNISPACE III Conference, held in Vienna from 19-30 July 1999. The purpose of this International Forum was to inform national governments, through the UNISPACE III Delegations, about IGOS concept and the practical implications of the implementation of an IGOS, as well as to obtain endorsement of the IGOS initiative. The full day programme drew a large number of attendants from various participating countries, including those from Africa, Latin America, Central Europe and Asia and the Pacific. Several keynote speeches and technical presentations were made, which was followed by a panel discussion on various technical, organizational and institutional aspects of IGOS, involving a number of distinguished experts.

The national delegations recognized the importance of IGOS and fully endorsed the IGOS concept jointly developed by the partners. The major recommendations of the International Forum on IGOS were duly incorporated in the final report of the UNISPACE III Conference. In particular, the Vienna Declaration on Space and Human Development, adopted by the UNISPACE III Conference, also stresses, inter alia, the significance of IGOS and calls for action to be taken "to develop and implement the Integrated Global Observing Strategy so as to enable access to and use of space-based and other Earth observation data" for protecting the Earth's environment and managing its resources.

The IGOS Forum Statement and results can be found at: http://www.igospartners.org

Implementing IGOS Through Themes The Ocean Theme - A Pathfinder

Dr. Ghassem Asrar, *Associate Administrator for Earth Sciences, NASA*
Dr. Eric Lindstrom, *Ocean Theme Team Leader, NASA*
Ms. Leslie Charles, *CEOS Secretariat, NASA*

The Integrated Global Observing Strategy (IGOS) Partnership has endorsed the concept of "themes" to implement IGOS by engaging in joint strategic planning for the integration, coordination and optimization of observing activities, by initiating activities needed to fill a gap or correct a problem in global observations, and by pioneering applications for new technologies. "Oceans" was selected as an initial pathfinder theme, and NASA agreed to chair a team, comprised of members from various IGOS Partner organizations to develop the oceans theme.

At the 12th CEOS Plenary and 2nd IGOS Partnership meetings in Bangalore, India, in November 1998, EUMETSAT presented a new approach, utilizing thematic areas, for activities of the integrated global observing strategy. With a view toward broadening IGOS to include the observing activities of all Partners, the themes concept was developed to provide a more coherent focus for the definition and implementation of IGOS. The concept was further refined in subsequent months, and adopted by the CEOS Strategic Implementation Team (SIT) at its meeting in January 1999 and the IGOS Partnership at its meeting in June 1999.

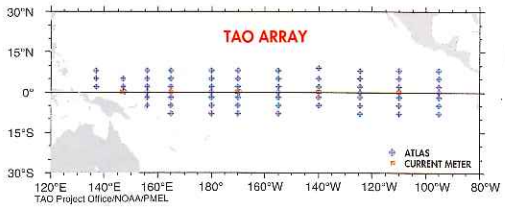
The fundamental underpinning of the theme approach is the acceptance that IGOS must establish priorities within broad theme areas; that the priorities must take account not only of the requirements of international programs but also those of national and regional programs and must be sensitive to major issues connected with international conventions; that IGOS must seek to exploit what already exists and seek to improve in incrementally; and that the definition and inclusion of in-situ requirements are vital to this process.

The oceans theme was identified at the CEOS SIT meeting in La Jolla, CA, January 1999, as a pathfinder to demonstrate the theme concept and was recommended to move immediately into the implementation phase. It was recognized that now is the time to further develop and implement an operational global ocean observing system and that it is currently possible to capitalize on recent successes. Oceanography capabilities have evolved greatly in the last twenty years. With the advent of satellite-based ocean remote sensing of sea surface temperature, sea surface topography, winds, and ocean color, global oceanography has been enabled. In-situ systems compatible with global observing, such as profiling neutrally buoyant floats, have also been developed, particularly by components of the WCRP such as WOCE and TOGA. Likewise, during this period, numerical models of the ocean circulation have advanced rapidly and are now being coupled to atmospheric models and in some cases to ecosystem models, keeping pace with the speed and capacity of super-computing technology development.

NASA agreed to chair the team, which includes representatives from GOOS, CNES, ESA, ISRO, NASDA and NOAA. The so-called Ocean Theme Team began drafting a preliminary report, which was presented to the IGOS Partnership in Rome, Italy, June 1999.

The Ocean Theme Team report is a call for concerted action. It underscores the GOOS vision of developing and maintaining global ocean observing tools for a permanent global ocean observing system. It also provides an excellent opportunity to build on the work of two of the CEOS SIT demonstration projects, folding together the IGOS-related portions of the Global Ocean Data Assimilation Experiment (GODAE) and the Ocean Biology Projects, to bring together disparate pieces, thereby demonstrating the utility of IGOS for oceans. It attempts to consolidate recent scientific gains in in-situ observing, remote sensing, ocean model development and data assimilation into an ongoing, robust ocean observing system. The report provides first recommendations to the IGOS Partnership--critical areas for action to assist in developing the capability for global operational oceanography. The ultimate goal is to set IGOS on a course to provide systematic long-term high-quality measurements for ocean surface topography, ocean surface vector winds,

(from IGOS Brochure)

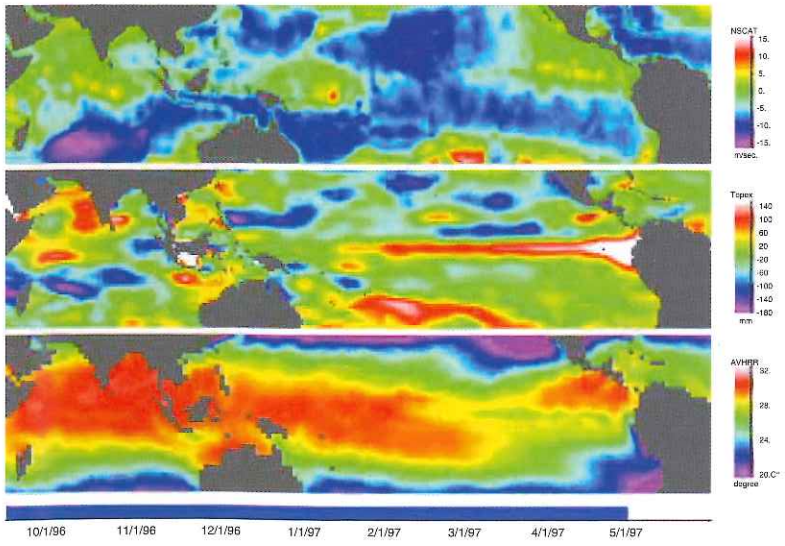


The TAO array spans the equatorial Pacific

ocean color and sea surface temperature. Other measurements and experimental developments contributing to a global ocean observing system are to be considered in later work. The report outlines short (1-2 year), medium (2-5 year) and long-term (5-20 year) implementation goals for IGOS to support its development of an integrated ocean observing strategy.

Based on the endorsement received by the IGOS Partners in June, the Ocean Theme Team and GOSSP held a joint meeting in Pasadena, August 5-6, 1999. The workshop examined requirements and capabilities for ocean observation in light of specific needs such as seasonal-interannual climate forecasting, improved marine weather prediction, and improved scientific understanding of marine ecosystems. Draft recommendations from the Ocean Theme Team to the IGOS Partnership were assembled and will be refined by late September. These recommendations will include some requests for immediate action by the IGOS Partners and some ideas for action over the medium and long term to facilitate development of an integrated ocean observing system. The joint meeting with GOSSP provided an excellent opportunity to focus the ocean theme agenda and to develop its usefulness as a pathfinder activity.

The Ocean Theme Team will present a report to the CEOS Plenary and IGOS Partnership meetings in Stockholm, November 1999. Response to theme team recommendations and commitment to action by the Partners are expected in early 2000, roughly one year after inception of the theme effort.



The El Niño signal (1.5.1997) from three satellite instruments (top to bottom): wind speed (NSCAT); sea surface height (TOPEX/POSEIDON); temperature (AVHRR).

(continued from Page 1)

CEOS Strategic Implementation Team Moves Forward

Agency Responses to Requirements

At the previous SIT meeting in January 1999, space agency principals had undertaken a dialogue with the leaders of the six IGOS pilot projects with regard to the implementation requirements of those projects. SIT agencies took an action to reply to those requirements. At the Rome meeting, the SIT Chair noted that almost all space-based observation requirements put forward by the pilot projects had been addressed by one or more space agencies and that such a joint response was a major accomplishment and step forward in the IGOS process. A dialogue with the user should continue as part of the IGOS process.

The SIT is prepared to respond to the recommended requirements of the Oceans Theme soon after the report is put forward.

GOSSP Interface

Frances Bretherton, Chairman of GOSSP, reviewed the mandate of GOSSP, which reports to the G3OS. His view of GOSSP's role is that it facilities two-way communication between CEOS and major users, and fosters building a database to support integrated systems. (This should encompass the range from primary observations to end users and have a mechanism that includes feedback.) He explained that GOSSP would facilitate, but not be a gatekeeper; that it would present a report periodically to CEOS; would maintain a balanced view across G3OS interests and liaise with WCRP, IGBP, and WMO; and would review the output from the respective IGOS themes for consistency with other elements.

The 8th WGISS Meeting and WGISS Special Workshop

Mr. Takashi Moriyama, *WGISS Chair, NASDA*
Mr. Hiroshi Ishiguro, *WGISS Secretariat*

The 8th meeting of the CEOS Working Group on Information Systems and Services (WGISS) was held in Brighton, England from May 12th – 14th 1999, in conjunction with a special workshop to discuss "IPR and Data Policy" – hosted by the British National Space Centre.

Workshop

On the first day, the workshop convened with the aims of:

i) identifying the suite of Intellectual Property Right (IPR) legislation that applies to the use of EO data and discussing its role as a tool in the development of EO exploitation;

ii) discussing the role of data policy as a mechanism for providing a 'framework' within which to stimulate growth in the use of EO and contrasting the implementation of current policies from an 'end user' perspective.

The various presentations illustrated the different goals and objectives underlying the data policies of the various agencies participating – but all agencies agreed that a common goal was to achieve the maximum exploitation of EO data.

The following recommendations were put forward to the full WGISS 8 meeting for inclusion in the report to the CEOS plenary:

- common use of terminology should be applied by CEOS agencies (e.g. 'cost' vs. 'price', 'cost of reproduction' – which was noted to vary by a factor of 10 according to current definitions across CEOS agencies);
- the implications of IPR need to be considered at the outset of any WGISS projects to ensure objectives are met without impediment;
- CEOS agencies should be invited to keep WGISS informed on EO data policy developments;
- Future considerations of data policy need to be undertaken in the context that EO data is a subset of geospatial and other data sets in the global geo-information environment.

WGISS-8 Participants - Dinner at Brighton Pavillion

Brighton Pavillion

Meeting

The highlights of the WGISS meeting proper included:

- the unveiling of the new WGISS brochure (which will also be distributed at the Plenary) as a collaboration between BNSC, EC/JRC, and NASDA;
- a review of the success of WGISS attempts to promote its results better through the CEOS Plenary, focusing of late on the adoption of CIP – the Catalogue Interoperability Protocol – for future data information systems of CEOS agencies; WGISS is pursuing co-operation with the Open GIS Consortium (OGC) as the optimal way to promote widespread adoption of CIP;
- David Williams of EUMETSAT attended WGISS-8 on behalf of the CEOS Chairman to express the desire for improved communication between the Plenary and Working Group levels of CEOS; this will be one of the topics to be addressed in a paper to be presented to the Plenary in Stockholm;
- the establishment of a task team, led by Takashi Moriyama, for WGISS to 'house' a evolution study for GOIN to become a global initiative. WGISS will report to the 2000 Plenary on the outcome; it also agreed to hold a WGISS Sub-Groups and GOIN combined meeting in the USA in September 1999;
- the appointment of Terry Fisher of CCRS as the next WGISS Vice Chair – following the CEOS Plenary; Peter Churchill of EC/JRC and Terry Fisher of CCRS will be the new Chair and Vice Chair team for the next 2 years from that time;
- an announcement by CNES that they will produce a further edition of the CEOS CD-ROM, in 2000;

The meeting also heard reports from the 3 Sub-Group Chairs (Access, Data, Network) updating members on the progress of the various task team activities.

Full details of WGISS activities may be found at: **http://wgiss.ceos.org** including electronic versions of the new WGISS brochure materials.

The 15th WGCV Meeting and Joint WGCV/ISPRS Workshop

Dr. Alan Belward, *WGCV Chair, European Commission*

The 15th meeting of the CEOS Working Group on Calibration and Validation (WGCV) was held 14th to 16th April 1999, at the Andøya Rocket Range kindly hosted by the Norwegian Space Centre. Discussion on the roles and work of the WGCV were led by the keynote address from Dr. Tillmann Mohr, Chair of CEOS who provided directions to Working Group and a detailed update on the IGOS initiative. Dr. Mohr emphasised the need for continued effort on calibration, the need for greater efforts concerning product validation, and stressed the importance of validation to IGOS.

The need for product validation in the IGOS context was a recurrent theme throughout WGCV15. The role of the National Standards laboratories was considered particularly pertinent. Representative laboratories (notably the USA's NIST and the UK's NPL) have been regular contributors to the WGCV over the last three years. These laboratories have no formal representation in CEOS but are making valuable contributions to our thinking. In particular they have raised the issue of "Traceability". Key points to emerge included a need for agencies to demonstrate and confirm accuracy for instruments through independent audit, and that all operating agencies ensure SI measurements are traceable to international standards. Some agencies involve National Standard Laboratories, and the feeling was that those agencies with experience should share that experience with those who do not. Traceability and error budgets are needed for every sensor. In the context of IGOS the end-users need to have confidence in the data at the instrument level (e.g. spectral radiance), and this can be achieved by accountability through independent assessment. It is also important that the quality of data products is traceable to SI standards. The implications are far-reaching and WGCV will convene a special ad-hoc group, with a life of 1 year, to look in depth at the issue of traceability and its long-term consequences.

A special session on Norwegian Space Activities described the work of the Norwegian Space Centre, the Nansen Centre, the Andøya Rocket Range, the ALOMAR Facility, and Norway's work on SAR Wind Cal/Val for ENVISAT. The proximity to the ALOMAR facility was a catalyst for a special session on Atmospheric Chemistry led by Dr Evert Attema of ESA concerning the lessons learned from GOME and the plans for ENVISAT. There is international co-operation in atmospheric chemistry at present (e.g. stimulated through agency programmes) but it could be improved by the action of WGCV. Future action will centre on identifying atmospheric chemistry points of contact and determining the degrees of international collaboration deemed necessary and lacking. A model for future consideration could be that of the IOCCG.

Dr Mohr's directions to WGCV added further impetus to a combined WGCV / ISPRS WGII/4, WGIII/6 workshop planned for May 26th-28th on Production and Validation of DEMs and Terrain Parameters from Spaceborne Sensors. The meeting, held at University College London examined issues including existing validation activities, the role of terrain models in validation of land surface related parameters, gaps in collaborative activities related to calibration and validation for land surface related parameters, validation protocols for land surface related parameters and the role for WGCV.

The workshop identified a trend towards producing higher level products, and that it is harder to validate these than it is to generate them, especially as the costs of obtaining field data for validation are high, particularly in proportion to the non-satellite budget of the observing systems. The workshop concluded that co-ordinated international validation initiatives would be beneficial to multiple space agencies, maximizing limited resources for land product validation. A recommendation was made to the WGCV to convene a new sub-group to examine Land Surface Parameter Validation, and a mandate for such a group was drafted. Following the meeting Dr. Jeffrey Privette, EOS MODIS Land Validation Program, NASA/Goddard Space Flight Center and Dr. Stefan Dech, German Aerospace Center (DLR) German Remote Sensing Data Center (DFD) Oberpfaffenhofen agreed to co chair a new WGCV sub group with the following objectives:

- promote the quantification and characterisation of satellite land product accuracy
- share land product validation past experience and lessons learned
- move towards the generation of 'standardised products with known accuracy' from similar sensing systems in the context of data continuity
- establish relationships between like products -e.g. Vegetation Indices
- develop in-situ validation measurement standards, protocols and traceability
- co-ordinate international validation activities
- improve access to validation data sets

NASA and DLR have kindly agreed to support them in their roles as joint co-chairs. A first meeting is planned for spring 2000 where the focus will be on validation of products associated with the Global Observations of Forest Cover project.

Full minutes of both meetings can be found on the WGCV web site **http://wgcv.ceos.org/**. Thanks go to all individuals who participated in the two meetings and to the CEOS members and associates who supported them.

13th CEOS Plenary in Stockholm

Dr. Tillmann Mohr
Chairman of CEOS
EUMETSAT

The 13th CEOS Plenary is to be held in Stockholm, Sweden, from 10 to 12 November, 1999. As current Chair of CEOS, EUMETSAT is hosting the meeting, in association with the Swedish National Space Board (SNSB).

The first and second announcements for the Plenary have been sent to all CEOS Members and Associates, and the final announcement - complete with papers - is due to be mailed at the end of September.

It will be my pleasure and privilege to chair this Plenary meeting, which promises to be interesting and with issues of substance. One of the principal points, which has been a priority in recent years, will be CEOS's participation in the Integrated Global Observing Strategy (IGOS). The fourth meeting of the IGOS Partnership will take place during the course of the Plenary. At this meeting CEOS will be represented by its current chairman, the past chairman (Dr. K.Kasturirangan of ISRO), the next chairman (Dr. Marcio Barbosa of Brazil's INPE) and Mr Robert Winokur, the chairman of the CEOS Strategic Implementation Team (SIT). During 1999 significant progress has been made in developing the IGOS Partnership into an effective instrument of cooperation. Certainly, the 3rd meeting, held in June in Rome, clearly showed that all the partners are now engaged in the activities of IGOS.

The activities of the Working Groups are, of course important, and their future needs will be a focus for the Plenary. Indeed, one of my aims during this year of Chairmanship is to raise the profile of the working groups, and to give more attention to their work and recommendations. We will need, also to consider any follow-up actions CEOS needs to take in the light of UNISPACE III.

I trust that I have said enough to indicate that it will be a three day period full of worthwhile discussions, added to which we are arranging - together with our Swedish friends- social events which will serve as recompense for your efforts !

Welcome to Stockholm and, please do not forget to make early hotel bookings: Stockholm, even at this time of the year, is full of visitors.

News Highlight

Information on the IGOS Partnership is available at: **http://www.igospartners.org**

Contributions for future issues of the CEOS Newsletter from the CEOS Members and Associates, and subscriptions to the CEOS Newsletter, please contact CEOS Japan Secretariat : ceosj@eoc.nasda.go.jp
http://nasda.ceos.org/ceosnews_menu_e.html

Meeting Calendar

As of Aug. 1999

Activities	1999 June	July	August	September	October	November	December	2000 January	February	March
CEOS Plenary						▲10-12 13th Plenary EUMETSAT/SNSB/Stockholm				
CEOS WGISS (Working Group on Information Systems & Services) Subgroups Task Team				▲13-17 SG-7 VA, USA	▲4-8 WGISS-9 UNEP/Kenya					
CEOS WGCV (Working Group on Calibration and Validation) Subgroups						▲26-29 SAR SG/ Workshop Toulouse, France		△ WGCV-16 ISRO/India		
IGOS/SIT (Strategic Implementation Team)	▲9 SIT-5 FAO Rome, Itary	▲29-30 Disaster P. CNES/ESA Paris	▲5-6 Workshop on Ocean Theme NASA/JPL	▲13-15 Disaster P. Wk NDAA/Honolulu		△SIT-6(TBD) △3-5 Workshop on Forest Fire Mom. M. JRC/Ispra				
IGOS/Partners	▲8 IGOS/P-3 Mtg. FAO/ Rome, Itary	▲21 IGOS Forum UNISPACE-III				▲25-11/5 COP-5/Bonn	▲IGOS-P4 EUMETSAT/Stockholm			
Others	▲18-20 ▲7-8 G3OS Spons FAO/Rome	▲19-23 UNISPACE-III UN-OOSA/Vienna	▲5-6 GOSSP JPL, Calif.	▲7-15 SFCG-19 IAF/Amsterdam ESA/ESTEC Noordwijk, NL	▲4-8	▲25-26 IGFA/Beijing ▲18-22 Ocean '99 Symp France	▲15-20 ESCAP Minist. Conf. New Delhji			

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(Date, Host organization/Location)

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