



REPORT ON THE IERS DIRECTING BOARD MEETING No 16

Tuesday 11 July 1995, 9:00 - 12:00, Boulder, Co (USA),
held in conjunction with the XXI IUGG General Assembly.

Attendance:

C. Boucher, W.E. Carter, M. Feissel (Chair, item 1), D. Gambis, B. Kolaczek, D.D. McCarthy, W.G. Melbourne, I.I. Mueller (item 6), Ch. Reigber (Chair, items 2-7), B.E. Schutz, P. Willis.

1. MEMBERSHIP AND ELECTION OF THE CHAIRPERSON FOR 1995-1999

In August 1994, the IAU designated B. Kolaczek as its representative for 1995-1999, to replace Ya. Yatskiv. In July 1995, the IUGG designated Ch. Reigber as its representative for 1995-1999, to replace K. Yokoyama. O.B. Andersen remains the FAGS representative.

According to the Terms of Reference of IERS, the chairperson is a member of the Directing Board, elected by the Board for a term of four years, with the possibility of reelection for one additional term. The preceding chairman, Ya. Yatskiv, was elected in April 1992; no longer being a member of the Directing Board, he cannot remain its chairman. As he could not attend this meeting, he sent the following message to the Board.

"I want to acknowledge and thank all who participated in IERS. It was a pleasure for me to become acquainted with so many of recognised scientist and to work with them in our field. I would like to express my special gratitude to the members of the Directing Board for their kindness and help during my term of chairmanship".

Since the creation of the IERS, the chairmanship was alternated between the IAU and the IUGG representatives. A number of Board members have expressed the wish to continue this use. Ch. Reigber is nominated, then elected unanimously less one abstention, the voting members being the representatives of the Unions, FAGS, the Coordinating Centres and the Central Bureau.

2. IERS STRATEGY DOCUMENT - IUGG RESOLUTION

To complement the IERS brochure "Missions and Goals for 2000", the Board had decided in May 1995 to work out a description of a strategy for the use of techniques for fulfilling the IERS missions. D. McCarthy was asked to prepare a first draft, that he circulated before this meeting.

The discussion on the strategy document as well as on the brochure was long and hardly converging, as many different points of view were expressed. A summary of the statements made follows.

- When giving numbers for the permanent observing networks or for the frequency of observations, it is difficult to be in the same time realistic, in an attempt to be credible, and prudent, for example to preserve enough redundancy and robustness.
- The techniques used by IERS are also used and justified in other fields of geodynamics, so that an IERS-only statement of needs may be misinterpreted.
- The strategy document should be in agreement with the Erice (1988) and Coolfont (1989) recommendations.

- What is the exact use of a strategy document ?
- The brochure, although appropriate to the information of the general scientific public, is not suitable for convincing the high managers of the importance of the Service.

Finally, the following decisions are taken.

- A shorter, glossier, version will be prepared by the end of October 1995, and adopted at the December 1995 meeting (action: M. Feissel).
- the strategy document will be improved based on the comments on the first draft, but it will remain internal, as a common reference for the Board members (action: D. McCarthy).

In parallel, a resolution had been proposed for adoption by the IUGG. The text finally adopted by IUGG is given in Annex 1.

3. CALL FOR VLBI PROPOSALS

The draft text of the Call for Proposals prepared by M. Feissel had already been discussed prior to the meeting. The text is adopted. The deadline for proposals is 31 January 1996. As soon as the letter from NOAA, announcing their resignation for the Coordinating Centre is received, the distribution of the Call for Proposal can start (Note: the letter was received in Paris on July 17). It is decided that the current VLBI participants will be sent the Call with a cover letter clarifying its intent with respect to their contribution.

The NOAA letter states that B. Carter "will work with the new coordinator to make the transfer of duties as smooth as possible." To help in this until the new VLBI Coordinating Centre is selected (Spring 1996), the Board decides that T. Clark, chairman of the CSTG sub-commission on VLBI for 1995-1999, will be invited to its meetings.

4. ITRF DATUM DEFINITION

Following the proposal of C. Boucher, the Board decides to establish a Working Group on ITRF datum definition. The Working Group will make recommendations on:

- the proper realization of the ITRS as it is defined by the IUGG resolution of Vienna 1991 (permanent tide, relativity...)
- specific fixation for the origin, scale, orientation and their time variations.

The membership will include representatives from Analysis Centres and the Central Bureau. The members will select the chairperson. A complete report should be ready by the 1996 IERS Workshop.

5. MONITORING OF THE IERS NETWORK

During the 1995 IERS Workshop held in Paris, the IERS Directing Board decided to establish a Committee on IERS Network Design and Implementation (CINDI). The need of such a committee was recognized in particular from the viewpoint of a strategy for the improvement of ITRF that was initiated at the IERS Terrestrial Frame Section (ITFS) of the IERS Central Bureau. Several points were discussed during the ITRF Workshop held just prior to the IERS Workshop. This meeting gathered representatives from almost all Analysis Centers and reviewed what could and should be done in the near future to improve the ITRF.

C. Boucher summarizes, as follows, the problems to solve.

- The quality of individual IERS sites is still very heterogeneous concerning, in particular, the accuracy and the reliability of the positions and their time variation. The idea to adopt a classification of stations was emphasized. A class I station should certainly imply a site with a minimum two systems of good quality with simultaneous and permanent (or at least regular) tracking, together with accurate local surveys and footprints.
- Selection of new sites to improve the worldwide distribution of ITRF sites.

- Improvement of the number, distribution and quality of colocations.
- Improvement of local surveys: collection of new data (new sites or resurveys, availability in SINEX format), quality control.

It also appears that several funding agencies are reconsidering their support to the fundamental techniques which contribute to IERS. Efforts are made by IERS members to express and explain in a more convincing way the real needs of these contributions. Such a Committee would definitely help in these efforts, for instance, by publishing regularly a planning document showing the IERS network and its weaknesses.

In parallel, the CSTG has set up a draft plan of action for 1995-1999 which includes a sub-commission on Site Issues, leaving open the question of the interaction with the IERS and the IGS. It results from the discussion that the Board considers that the network issues and the sites issues should be dealt with separately and it would welcome the support of the CSTG sub-commission for the latter. The Board asks C. Boucher to set up the CINDI committee and define its working rules. The membership will be based on nominations by the Technique Coordinators.

6. PROPOSED CONCEPT OF FUNDAMENTAL GEODYNAMIC REFERENCE STATIONS

I. Mueller presented to the Board the proposal that IUGG set up an Inter-Association Commission for Geodynamics Networks. This commission would monitor a globally distributed network for fundamental stations where geodynamics observing stations and geophysical sensors would be collocated, in order to minimize the logistical expenses and to strengthen the scientific return. The Board considers that if such a Commission is created, the IERS should have a strong position in it.

7. ORGANISATIONAL MATTERS

Procedure for aggregating new operational centres

When new analysis centres want to contribute operational results to the sub-Bureau, they should contact the relevant Technique Coordinator, who will send them an invitation letter specifying the current conditions to participate.

More frequent posting of rapid service/predictions of EOP

The sub-Bureau for Rapid Service and Predictions has received several requests for IERS EOP distribution twice per week instead of once. The Board agrees that the sub-Bureau reorganize its data collection accordingly. It reminds that operational centres should be requested to send the same results in parallel to the Central Bureau.

Status of IERS publications

The 1994 IERS Annual Report will be mailed in late July. The IERS Conventions (1995), will be ready to print in the fall of 1995.

IAG policy on products and services

The IAG is attempting to set up a policy on products and services that could help raising funds for the IAG. K.P. Schwarz, then first vice-president of IAG, asked IERS to comment on a series of statements on this topic. The Board notes that IERS is a service of FAGS, which is sponsored by ICSU, IUGG, IAU and URSI. Its parent Unions in FAGS are IUGG and IAU. Therefore it would be difficult for it to apply an IAG-only policy.

In addition, every IERS participant funds its participation on a national basis and provides its results for free. In this situation, charging for the results at any level may create a dangerous situation. Ch. Reigber will prepare and circulate in the Board the response that will eventually be sent to IAG.

Corresponding members

New names are added: T. Clark, V. Glotov, J. LaBrecque, H. Schuh, Y. Yatskiv, K. Yokoyama. The updated list is given in Annex 2.

Treatment of diurnal terms in the EOP

There is a need to clarify - and hopefully unify - the treatment of diurnal and semi diurnal variations of polar motion and universal time by the operational centres. The Board asks the Central Bureau and the Sub-bureau for Rapid Service and Predictions to set up a common proposal, to be discussed in a second step with the operational centres.

Report from the Sub-bureau for Atmospheric Angular Momentum (David Salstein)

The Sub-bureau is continuing to operate out of the U.S. National Meteorological Center, which has now been renamed the U.S. National Centers for Environmental Prediction. We will continue to use the old name and "NMC" initials in our work for the Sub-bureau, at least for a while.

The major item of news is that a new computer system will be installed within about a year at NMC, on which a substantial portion of the code for the Sub-bureau exists. As far as calculations for the Sub-bureau of the NMC-based quantities are concerned, we plan to do the necessary code conversions to move the calculations to the new computer system. At the same time, we plan a restructuring of the code so that calculations will be performed on the so-called "sigma," non-dimensional, vertical coordinate, rather than on pressure coordinates because calculations are more accurate on the sigma system, which is the coordinate of the weather forecast models. Upon completion of the "sigma"-based code, we plan a parallel comparison between the fields that are produced on the two vertical coordinate systems for a period of about a year. However, some of the calculations are performed more naturally on the pressure vertical coordinate system; these include those of zonal mean zonal wind and zonal mean temperature, which we plan to continue computing on pressure coordinates. As a result of the upcoming transitions, we are reconsidering the structure of the archives of the Sub-bureau as well. We plan to include additional terms, including the dynamic torque terms relating angular momentum transfer to and from the atmosphere and solid Earth, in the sub-bureau files.

All the personnel connected with the activities of the Sub-bureau, as well as others at NMC will be quite busy during this restructuring; we may plan to seek additional support to carry out these tasks.

Lastly, we should note that we have received data from all four centers during the past year, though there have been interruptions in the data flow at times. When missing data are noted, we attempt to contact the individual centers, or recalculate the values ourselves, whenever possible.

Recent assessments of forecasts given by the Sub-bureau system typically show positive skill at all lead times. A knowledge of the past history of forecast errors, as well as the state of the atmosphere, is sometimes necessary to best utilize the forecasts, and we are considering the best way to utilize this information in the context of momentum forecasts.

Next meeting

In conjunction with the Fall AGU meeting (tentative: Dec 13th).

Annex 1.

IUGG Resolution 1, July 1995

The International Union of Geodesy and Geophysics (IUGG)

recognizing that:

1- since its establishment in 1988 the International Earth Rotation Service (IERS) has successfully developed a comprehensive observation and analysis system to realize the International Terrestrial Reference System (ITRS) and the International Celestial Reference System (ICRS), and to permanently link them by the Earth's rotation monitoring,

2- IERS achievements are entirely due to the contributions of national agencies in terms of technical development, network operation, and data analysis;

noting that:

1- the IERS-published reference systems are of high quality and are used in a wide range of research and applications in geodesy and geophysics to provide quantities that the user would otherwise have to determine for himself and at his own expense,

2- the IERS Directing Board has published a strategy statement describing the optimal combination of the astronomical and space techniques to fulfill the IERS missions;

recommends that:

national agencies and institutions contribute to the operation of IERS by providing observations and products in compliance with the IERS Strategy.

Annex 2.

IERS CORRESPONDING MEMBERS (July 1995)

B. Ambrosius	J. Kouba	C. Schalinski
M. Baltuck	J. Kovalevsky	H.G. Scherneck
G. Beutler	J. LaBrecque	H. Schuh
J. Bosworth	R.B. Langley	H. Seeger
G. Blewitt	J.L. Le Mouel	A. Sengoku
C.D. Boucher	J.-F. Lestrade	P. Shelus
Y. Bock	D.D. McCarthy	O. Sovers
A. Brzezinski	P. McCulloch	A. Sprent
P. Brosche	C. Ma	A. Steppe
J. Campbell	G.L. Mader	A. Stolz
B. Chao	Z. Malkin	F. Takahashi
T. Clark	S. Manabe	V. Taradij
J. Degnan	A.J. Miller	S. Tatevian
J.O. Dickey	J.B. Minster	C. de Vegt
J. Dow	H. Montag	R.O. Vicente
R. Eanes	L.V. Morrison	J. Vondrak
M. Eubanks	I.I. Mueller	K.F. Wakker
A.M. Finkelstein	J. Müller	M. Watkins
D.M. Fubara	M. Murata	A.L. Whipple
T. Fukushima	A. Nothnagel	A. Whitney
I. Georgiev	R. Neilan	J. Williams
V. Glotov	P. Pâquet	G.A. Wilkins
C. Goad	E. Pavlis	C.R. Wilson
R. Gross	W.R. Peltier	P. Wilson
E. Groten	G. Petit	W.H. Wooden
B. Guinot	R. Ponte	P. Woodworth
T. Herring	D. Pugh	Y. Yatskiv
R. Hide	J. Ray	K. Yokoyama
Jin W.J.	C. Reigber	T. Yoshino
K. Kaminuma	D.S. Robertson	T. Yunck
T. Kato	R. Rosen	Zhu S.Y.
N. Kawano	D. Salstein	J.F. Zumberge
R.W. King	V. Salyamov	
B. Kolaczek	T. Sasao	

President of FAGS : O.B. Andersen

General Secretary of IAU	: I. Appenzeller
President, IAU Division I	: J. Kovalevsky
President of IAU Commission 19	: J. Vondrak
President of IAU Commission 31	: H. Fliegel

General Secretary of IUGG	: G. Balmino
General Secretary of IAG	: C. Tscherning
President of IAG Section II	: R. Rummel
President of IAG Section V	: M. Feissel
President of IAG Commission 8 (CSTG)	: G. Beutler