



REPORT ON THE IERS DIRECTING BOARD MEETING No 26

Held in San Francisco
Saturday 5 December 1998, 16:00 - 21:15

Attendance: C. Reigber (Chairman), B. Kolaczek, D. Gambis, C. Ma, P. Shelus, B. Melbourne, B. Schutz, P. Willis, B. Chao, D.D. McCarthy, C. Boucher.
I.I. Mueller, Ruth Neilan (invited)

Sections

- I- REPORT
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ACKNOWLEDGEMENT OF THE NEW FAGS REPRESENTATIVE

H.G. Wenzel (wenzel@gik.bau-verm.uni-karlsruhe.de) is the new FAGS representative at the IERS DB since October 1998.

PREPARING THE NEW IERS WEBSITE

So far, no official IERS Web site exists. The Central Bureau is in the process of implementing it. This site will reflect the activities of the various IERS Components. Emphasis is given to the definition of the specific IERS products and to the direct availability of its products, ICRF, ITRF, and EOP individual solutions.

STATUS OF CURRENT WORK

IERS technical Notes in preparation.

- Geocenter motions (J. Ray), status unknown, DG will contact JR for information. It was agreed upon that Jim should write a synthesis of the papers as a general presentation of the Note.
- El-Nino and the Earth's Rotation: At AGU, a meeting took place on Wednesday 9 December between the 3 co-editors: D. Salstein, B. Kolaczek and D. Gambis. So far, 11 papers have been gathered. Some are still drafts. The Technical Note will likely be printed in the course of January 1999. This collection of papers should be introduced by a general text written by the co-editors.

An additional Technical Note concerning the MGGF activities will be published in May 1999. The input of this note was discussed at the MGGF meeting held in San Francisco on the next Wednesday.

THE INTERNATIONAL SPACE GEODETIC AND GRAVIMETRIC NETWORK (ISGN)

C. Boucher proposed some modifications concerning the text which was presented at the IERS DB24 held in Nice. He recommended 3 techniques as a constraint to get the IERS label. It is assumed that the reliability is better for 3 techniques than for 2, but it was argued that not so many sites are equipped with 3 independent techniques.

If a third technique is required, it appears that the GPS is mandatory. According to C. Ma, not all VLBI antennas have a GPS device; some have PRARE which is not an official technique for the IERS. Consequently only few sites would have the IERS label. As it was difficult to conclude the discussion, it was asked to C. Boucher to write a small report listing the sites where 3 techniques are available and including maps simulating the global geographical distribution according to the criterias chosen.

P. Willis presented briefly the IGEX status. 51 stations are operating. Data and products are now accessible from CDDIS via anonymous ftp. ILRS support of the International GLONASS Experiment 1998 began on 19 October 1998 and will end on 19 January 1999. The next meeting will be in Nashville in Spring, 1999. So far, IGEXmail issued more than 100 mails. The first GLONASS precise orbits have been computed at the CODE Analysis Center using the data of the global IGEX network. The orbits were computed for GPS week 0979 (the week before the official start of IGEX) and stem from overlapping 3-day solutions with 3-day arcs. A recent information distributed by the IGEXmail mentioned that the IGEX-98 campaign is being extended for a 3-month period until April 19, 1999.

MAINTENANCE OF THE ICRF, SHARE OF TASKS

There is an agreement on the "Share of tasks" text between the VLBI Coordinating Center (VCC) and the Celestial System Section of the IERS/CB (CSS). The text is given in the appendix.

GEOSPECTRA 99 TRADE FAIR (June 9-15, 1999 at Duesseldorf, Germany) This trade fair will take place in the frame of the Technology Forum International in Duesseldorf, Germany. It covers the geotechnology and applied Earth sciences. According to C. Reigber it is a good opportunity for IAG services like the IERS to acknowledge their visibility. The IGS has some experience in this domain and it is currently participating to this kind of events. The idea of Chris is to present a stand which could also be used at the IUGG and at other meetings.

PILOT EXPERIMENT FOR TIME SERIES OF STATION COORDINATES/EOP

There were few comments after the draft project was proposed. They concern the problem of using standards in order to get consistent solutions. The call for proposal will be submitted at the end of the year via the ITRFMAIL Service and through an IERS gazette.

P. Sillard (sillard@ensg.ign.fr) is coordinating this project.

The full description of both the experiment and the recommendations are available at :

<http://lareg.ensg.ign.fr/ITRSTS/appeldoffre.html>

ITRF97

The ITRF97 solution has not yet been released. The removal of constraints made visible some problems for the non-GPS solutions. A report will be issued in February/March. The possibility to include GLONASS solutions is envisioned. Some questions arose on the possibility to have a list of stations for the definition of the ITRF. C. Boucher referred to a remark made by B. Guinot some weeks ago arguing that on contrary to the ICRF which was officially adopted by the IAU, there was officially no recommendation from the IUGG for the adoption of the ITRF as the Terrestrial reference frame. The IERS should get the mandate to issue the ITRF for a large community. A draft recommendation has to be prepared for the next IUGG meeting in Birmingham in July 1999. Similarly to the various services IGS, IVS and ILRS the idea of the IDS (International DORIS Service) is progressing. It is hoped that this Service be organized in the course of 1999.

ITRF2000

This solution will be available at the beginning of the year 2000. Claude Boucher is asked to prepare a scenario draft on the basis of the ITRF1997. He will circulate this scenario to the Board. The question to include DORIS data in the ITRF was discussed. Older data not yet released should be processed. Previously, it is important that the ITRF Bureau clarifies the time schedule with respect to the Analysis Centers for such recomputations. It is also of prime importance that technical specifications be prepared by the ITRF group (in agreement with the Analysis Centers), in particular for the problems of constraints of the solutions and the free networks solutions.

The next ILRS meeting will be held in April 1999 during the Haque EGS meeting.

The IVS Analysis Coordinator, IVS Network Coordinator, and IVS Technology Coordinator will be chosen in January among candidates.

New Terms of reference are being adopted at the IGS meeting on Sunday 6 December.

"Would the CDDIS be a possible data center for the IERS products?"

Before the meeting was closed Ivan asked for general agreement of the Board members by a vote.

"The IERS DB globally accepts the new IERS ToR as prepared by Ivan Mueller.

ABSTENTIONS: 1

- Because of the IUGG meeting in Birmingham, no IERS workshop is scheduled in 1999. The 2000 EGS meeting will take place in Firenze, Italy in Spring 2000.

Two business meetings of IERS/MGGF were conducted in 1998. The first one was held in conjunction with the IERS 1998 Workshop (see PAST AND FUTURE ACTIVITIES), at the GeoForschungsZentrum in Potsdam, Germany, on October 1, 1998. The second one was held during the American Geophysical Union's Fall Meeting in the Moscone Center in San Francisco, USA, on December 9, 1998. Both meeting were attended by the Special Bureau (SB) Heads and open to interested scientists (a

total of about 30 people in Potsdam and 16 in San Francisco). The following summarizes the various discussion topics, issues, and resolutions:

Website Development: It is decided that a main MGGF website will be established at NASA's CDDIS (Crustal Dynamics Data Information System) at the Goddard Space Flight Center, with links to IERS website (which is under construction) as well as to all the SBs. The 7 individual SB websites will be concurrently constructed by SB Heads. It is also decided that the SB sites (rather than the MGGF main site) will be responsible for information, communication, and data archive and dissemination for the SB-specific data sets. The MGGF main site, however, is ready and available for back-up should such need arises. Two propositions have been received (and welcome) for setting up mirror websites for easy access worldwide: one at EOPGS in Strasbourg, France (by P. Gegout), one in the National Astronomical Observatory in Mizusawa, Japan (by Y. Tamura). Official agreements will be pursued (B. Chao).

Document Preparation: An IERS Technical Notes (TN) will be written to delineate the mandates and operations of MGGF services. The text will include an overall section and individual sections based on the SB webpage material. The Coordinator B. Chao will take the lead in the preparation. A 20-page TN is envisioned. The plan is to have hard copies produced and physically distributed at the IUGG Assembly in Birmingham, UK, during July 18-30, 1999. The camera-ready document should be sent to IERS Central Bureau in May for the production. In addition, MGGF will contribute to the IERS Annual Reports, and issue IERS Gazette when needs arise. The possibility of contributing to the IERS Convention 2000 from MGGF as a whole was discussed, but determined to be pre-mature at this time because of the nature of the work involved.

Future Activities: It is decided that MGGF will take the opportunity of major international meetings to present a collective paper by the Coordinator or SB Heads that are present. Appropriate upcoming forums include the EGS'99 (April, the Hague-- session organized by R. Gross and V. Dehant), Spring AGU'99 (May, Boston --paper to be presented by D. Salstein), IUGG'99 (July, Birmingham -- session organized by J. Dickey), and Fall AGU'99 (December, San Francisco). For the latter, tentative plans include a session on Core angular momentum by V. Dehant and/or certain dedicated MGGF session. Another activity discussed was the participation of IERS in the "Geospectra 99" International Trade Fair to be held in Dusseldorf, Germany, June 9-15, 1999. MGGF will contribute graphic display material to IERS booth upon request (B. Chao).

SB reports were given by the Heads in San Francisco. In particular, V. Dehant reported the advanced stage of SB Core website development, while R. Gross reported on the SB Ocean meeting in Keystone, Colorado, in conjunction with the Topex/Poseidon meeting in October, 1998, and his view of the data archiving and management.

The issue of data type and their archive format was discussed. Obviously it is desirable to have standardized SB archives to the extent possible. R. Gross and D. Salstein will be the point persons to work on the issue, with support from P. Gegout.

It was resolved that the language to be used in the new IERS Terms of Reference to describe MGGF service (under "Product Centers") is "Monitoring of Global Geophysical Fluids Coordinating Center and Special Bureaus, providing relevant geophysical data sets and related computational results to the scientific community." Considering the travel plans of the SB Heads, the opportune time for the next MGGF business meeting is during the IUGG'99 meeting in Birmingham.

ACTIONS ITEMS

List of actions after IERS/DB meeting No 26, 5 December 1998
Status, as of January 1999

What	Who	By	Status
Acknowledge the new FAGS representative	DG		Done
Revise list of IERS Corresponding Members	DG	asap	Started
Prepare the new IERS Website	DG	asap	Started
ITRF2000 Prepare a draft scenario and circulate it	CB	asap	
Geocenter topic, Technical Note Investigate the status of the TN by J. Ray	DG	asap	Done
Motivate M. Watkins to continue to coordinate in order to get time series and make the synthesis	BC	asap	
List the IERS products	DB		
Consult Carey Noll about CDDIS data bank	DB		
El Nino TN Ask the co-editors to write a general introduction	DG	Dec 98	Done
ISGN Report sites where 3 techniques are available for specification of the IERS label.	CB	asap	
IUGG and ITRF recommendation - draft recommendation of the adoption of ITRF by the IUGG at Birmingham.	CB or BG	asap	
BC = Ben Chao CM = Chopo Ma BS = Bob Schutz PW = Pascal Willis RN = Ruth Neilan CB = Claude Boucher DG = Daniel Gambis DB = Directing Board PS = Peter Shellus FA = Felicitas Arias CR = Chris Reigber DM = Dennis McCarthy IM = Ivan Mueller			

APPENDIX 1

DISTRIBUTION OF TASKS FOR THE MAINTENANCE OF THE INTERNATIONAL CELESTIAL REFERENCE SYSTEM AND THE INTERNATIONAL CELESTIAL REFERENCE FRAME

According to Resolution B2 of the IAU 23rd General Assembly (Kyoto, 1998), after 1 January 1998 the IAU celestial reference system is the International Celestial Reference System (ICRS) as defined by the International Earth Rotation Service (IERS) and the corresponding fundamental reference frame is the International Celestial Reference Frame (ICRF) constructed by the IAU Working Group on Reference Frames.

The IAU Resolution requests the IERS to take appropriate measures, in conjunction with the IAU Working Group on Reference System, to maintain the ICRF and its ties to the reference frames at other wavelengths. In the present IERS structure, two groups will share this task: the VLBI Coordinating Center (VCC) and the Celestial System Section of the IERS/CB (CSS).

When a new organization and structure is adopted, the tasks will be continued, but some reorganization may be required. The proposed activities will be conducted in close cooperation with the IAU ICRS Working Group.

Maintenance of the ICRS and ICRF involves the following tasks:

- a) maintenance of the axes,
- b) maintenance of the frame,
- c) maps and images
- d) accessibility of the system,
- e) information for users.

MAINTENANCE OF THE AXES

The maintenance of the axes is a task of the CSS. To accomplish this task the CSS will:

- 1) monitor the ICRS orientation relative to the conventional systems to assure consistency of the ICRS with other IERS products,
- 2) work with the VCC to ensure that any changes to the ICRF maintain the direction of the ICRS axes

MAINTENANCE OF THE FRAME

The maintenance of the frame is a task of the VCC. To accomplish this task the VCC will;

- 1) assure the observation of all radio sources of interest for various reasons (defining, candidate, link objects) in VLBI programs,
- 2) perform solutions to obtain VLBI coordinates to contribute to ICRF (new sources, more precise non-defining coordinates, or a possible completely new ICRF). The positions of the 212 current defining ICRF sources will not be changed in any ICRF catalog until a new celestial reference frame is realized in the future. A new realization is not expected unless an intolerable error is found in the coordinates of a defining ICRF source or if new user requirements emerge which cannot be satisfied otherwise. Recommendations for any such future revisions will be prepared jointly by the VCC, the CSS, and the IAU Working Group on the International Celestial Reference System.

MAPS AND IMAGES

The VCC will conduct a program to image the radio frequency intrinsic structure of ICRF sources. These images will be made available to the scientific community as they are processed. The CSS together with the VCC will produce source structure indices to quantify the astrometric quality of sources.

ACCESSIBILITY OF THE SYSTEM

The CSS will take charge of the maintenance of the links of ICRF to other reference systems. This includes dynamical reference frames and catalogs in other observing wavelengths. It will provide the VCC the lists of radio sources necessary for the various links. The CSS, or its equivalent in the future IERS structure, will become organized to monitor any kind of link.

INFORMATION FOR USERS

Permanent contact with users will be assured through a web page/ftp site. This will be done via an official IERS/ICRF page, which reflects the contribution of both teams. Both the CSS and the VCC will coordinate the information to be included, each contributing the data for which it is responsible. These will include:

- 1) the original ICRF catalog tables from IERS TN 23,
- 2) a table of improved positions for selected candidate and other sources,
- 3) a table of positions of new sources,
- 4) image maps of sources at both frequencies,
- 5) structure indices of sources at both frequencies,
- 6) tables of auxiliary information and alias names,
- 7) covariance matrix information, and
- 8) an archive of previous updates.

New sources will be added in a timely manner and announced by a "What's New" link and an e-mail note to interested parties. Individual improved and new positions will be given solution date identification to distinguish between various updates. At regular intervals the most recent concatenated ICRF catalog consisting of unchanged defining positions, original and improved positions of candidate and other sources, and positions of new sources will be sent to the cognizant individuals at the various VLBI correlators.