

3 Reports of IERS components

3.1 Directing Board

The IERS Directing Board (DB) met twice in the course of the year 2003. Short summaries of these meetings are given below. Before Meeting No. 37, the DB met with other experts for an IERS Retreat, a report of which is given in Section 4.1.

Meeting No. 37 *Wednesday, April 2, 2003, Observatoire de Paris, Paris, France*

J. Vondrák welcomed the participants of the meeting and introduced the vice president of the Observatoire de Paris, Dr. Claude Zeppen. On behalf of the president of the Paris observatory Dr. Zeppen gave his warm welcome to the IERS meeting. The minutes of the IERS DB Meeting No. 36 were approved. J. Vondrák introduced William Wooden as new head of the IERS Rapid Prediction Centre at USNO.

M. Rothacher gave a summary of the IERS Retreat (see Section 4.1). In addition to the “formal” minutes the following comments were given: J. Souchay stated that there is a need for a better connection between the ICRS and the IAU; the upcoming meeting of the IAU in Sydney should be used to start activities. – Being confronted with the problems of keeping the Grasse Laser Station running there is a general request from the scientific community to strongly support the lunar laser ranging technique. – The TC group pointed out that ocean as well as atmosphere loading values should be provided by the SB for Loading; in addition series of geocentre values should be made available. No decision was made yet with respect to the demand for a new “ITRF2000A”, i.e., for more frequent updates of the ITRF – a decision will be made later by the ITRS Centre / DB after a proposal of the WG on ITRF datum. In this context it was discussed to re-activate the WG on ITRF datum as part of the IERS; in addition a WG on site co-location should be created as part of the IERS – this WG has to be set up in cooperation with the CSTG.

The DB made several decisions on organizational consequences and on possible additions to the existing structure of the IERS (see Section 4.1).

J. Vondrak reported that GGFC has started some activities for information systems as part of INDIGO and as projects in the name of the IERS. – M. Rothacher was elected as IERS service representative in the IAG executive committee.

B. Richter gave a report of the Central Bureau. Contributions for the Annual Report 2002 were received more or less in time and are nearly complete; work on publication will start. – The deadline for

Technical Note No. 30 (Proceedings of the Munich workshop) has been closed and the editing will be done. – The IERS data base will now move from technical investigations to first realizations. It will run on an Apache Web Server using an open source data base system and PHP scripts as access to the database information from web browser. As a first step the IERS products and the data series will be stored within a simple file systems similar to CDDIS. It was discussed that sometimes the original data from the TCs have to be edited by the PCs and it is rather unclear whether to keep both versions of the data, because it might lead to capacity problems. However, an announcement to the PCs will be made to make the products and all input data available. – There were far more proposals than expected for the EU Networks of Excellence (NoE). As most of the proposals for a NoE, the IERS proposal EPISTAGE has been declined because the applications were targeting rather in the direction of “cooperation” than of “integration” as expected by the EU.

The Central Bureau will compile a list of all DB members containing the terms of their representation within the IERS DB as well as all representatives of the IERS in other organizations / institutions.

Meeting No. 38 *Monday, December 8, 2003, Marriott Hotel, San Francisco, USA*

J. Vondrák welcomed the participants of the meeting and introduced the new members of the Directing Board: G. Gendt (Representative of IGS), M. Feissel-Vernier (Representative of IDS), and W. Wooden (Rapid Service/Prediction Centre). The minutes of the IERS DB Meeting No. 37 were approved.

It was reported that (1) a letter with respect to the renaming of the IERS was sent to IAU, IUGG, IAG, and FAGS. (2) The IERS report for 1999–2003 was submitted to IAG. (3) Two letters asking for further support of SLR stations were sent to AUSLIG and OCA; so far no official responses were received. (4) The IAU EC prolonged the mission of J. Vondrak as IAU representative to the IERS DB until the end of 2004. (5) C. Ma has been nominated for the Steering Committee of IAG, Commission 1 – Reference Frames. (6) A description of the IERS has been sent as input for the IAG Geodestist's Handbook. (7) A letter asking for further support of the NASA SLR activities was sent to William Watson. (8) R. Forsberg proposed P. Schwintzer as representative of the IGFS to the IERS DB.

D. Gambis presented the new tools for users of the Earth Orientation Centre (EOC). They have been developed by C. Bizouard and S. Lambert and are usable at EOC's web site. He mentioned that the new web pages of the EOC were designed as a compromise

between easy access for non-professional users and an access with detailed options for professional scientific users. All data series of the EOC are available with respect to the IAU1980 and IAU2000A precession-nutation system; the input data series are available, too. Links to data series from the GGFC Special Bureaus with respect to the excitation of the Earth rotation are also given. Additionally, statistics on all data series are available as well as the Earth Orientation Matrix and Earth Rotation Vector.

The *Standards Of Fundamental Astronomy* (SOFA) are a key part of the IERS Conventions software and sophisticated at a basic level. However, the support by Particle Physics and Astronomy Council (PPARC) of UK will end in April 2004. It was decided that J. Vondrak should write a letter asking for continuing support. The SOFA archive can be mirrored by the new IERS Archive and Database System.

D. McCarthy proposed a new product of the IERS Convention Centre: Opinions of the IERS Convention Centre. This series would consist of documents published electronically as needed to address questions regarding the application of some portion of the IERS Conventions. B. Richter mentioned that these opinions can be connected to the FAQs, Glossary, and Acronyms Web pages of the IERS Information System. The DB agreed that the Convention Centre should proceed in this direction.

M. Feissel-Vernier introduced the International DORIS Service (IDS). Some of the main tasks to be performed in the near future by IDS are the improvement of site co-locations, the creation of analysis centres outside France (proposals from AUSLIG and INASAN) and the start of an analysis campaign to study the impact of gravity fields on terrestrial reference frames. Products of the IDS are: orbits, global SINEX solutions, time series of SINEX solutions and time series of specific parameters. In the future more products will be available. A DORIS analysis workshop was held in February 2003.

J. Vondrak reported that during the IAU General Assembly several meetings of Division I that are of interest to IERS have taken place: (1) Session on the implementation of the IAU2000 resolutions. (2) Session on precession and astronomical standards. (3) Session on new Division I Working Groups (two new WGs should be set up). (4) Joint Discussion 16 – The ICRS: Maintenance and Future Realization. (5) Commission 8, 19, and 31 meetings.

At the IUGG General Assembly the results of the IERS Retreat were presented in a talk by M. Rothacher. In addition, two posters describing the IERS and the data and information system were presented by the Central Bureau. M. Rothacher reported that a new structure of the IAG has been set up: IAG Bureaus, IAG Commis-

sions, IAG Inter-Commission Committees. Service representatives in the IAG executive committee are: R. Neilan, M. Rothacher, and H. Schuh.

C. Ma reported about the IERS Workshop on Site co-location (see Section 4.2). Z. Altamimi mentioned that the costs for the survey of one site are about 20.000 • to 30.000 •. Currently the site survey at Wuhan is being done by IGN/CNES, but support by other agencies will be necessary.

W. Schwegmann gave a status report on the IERS Database as well as on the new Information System. This Database is meant to archive all products of the IERS at a central place. The system is currently being developed. It will allow IERS to mirror easily the products of IERS Product Centres and to archive all relevant data. The data are going to be transformed to XML (eXtensible Markup Language) to allow a comfortable exchange and combination of the data. The use of XML as central format has several advantages; as an example formats like the SINEX will be automatically checked and an error message will be generated. Nevertheless, the data will also be available in original format. The Web pages are going to be re-designed. The new Information System is a dynamic database driven system. Thus, it allows an easy maintenance of the Web pages with respect to timeliness, redundancy and consistency. The contents of the Web pages are based on XML, too. Interactive tools have to be developed to work with the data. Links to existing interactive tools, such as the interactive tools at the Earth Orientation Centre, will be included in the Web pages.

A *Working Group on Reference Frames* in cooperation with IAG Subcommission 1.2 is going to be set up. The chair will be Geoff Blewitt, the goals, objectives and research agenda are described in a draft charter. The title of the working group should be IERS Working Group on Datum Definition of Global Terrestrial Reference Frames (jointly with IAG).

The main task of the *Working Group on Combination* is the coordination of the *Combination Pilot Project*. A draft of the charter was presented. M. Rothacher explained the time-table of future combination procedures. The results of the intra-technique combinations should be available within 7 weeks after the observation whereas the inter-technique combination results should be available 3 weeks later. M. Feissel-Vernier mentioned that DORIS data is not released until 8 weeks after the observation. Therefore the final deadlines should be discussed within the WG.

The main focus of the *Working Group on Co-location* is the co-location of space techniques at geodetic fundamental stations and especially the establishment of accurate local ties in SINEX format including the full variance-covariance information. A draft of the charter

was presented.

The final charters of the Working Groups will be approved by e-mail.

B. Chao discussed future activities of the GGFC. The Web pages of the GGFC have been re-designed and new datasets are available, e.g. at the Special Bureaus for Hydrology, Oceans, and Tides. However, the SBs in the USA currently do not receive funding and in the future they won't be able to do work in the framework of the IERS. The GGFC appreciated the work done at the Earth Orientation Centre in Paris and at the Central Bureau in Frankfurt. It is important to consider the data of the GGFC Special Bureaus in this work.

B. Richter reported that the IERS Annual Report 2002 was sent out. Technical Notes No. 30 (Proceedings of the Munich Workshop) and No. 31 (ITRF2000) are available in electronic form, the printed versions are in preparation. Technical Note No. 32 (Conventions 2003) is available in electronic form at the Web pages of the IERS Convention Centre, the printed version is currently being reformatted with respect to the layout of the IERS Technical Notes. The IERS Web pages maintained at the Central Bureau now contain FAQs, a Glossary, and Acronyms. Comments should be sent to W. Dick who continuously updates the pages. Possibilities of reducing the mailing costs for the IERS Annual Reports and Technical Notes were discussed.

M. Rothacher reported that the CONT Sessions in 2002 were very helpful to learn about the combination of data. Thus, he proposed to initiate new *COMBO-CONT Sessions* for 2004/5 considering all space geodetic techniques as well as meteorological data and other auxiliary data sets. The Central Bureau will send a proposal to encourage such new CONT Sessions.

It was decided that an IERS recommendation should be distributed, encouraging software developers to use UT1 instead of UTC.

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