

3 Reports of IERS components

3.1 Directing Board

The IERS Directing Board (DB) met once in the course of the year 2004. A summary of this meeting is given below.

Meeting No. 39 *September 23, 2004, Bureau International des Poids et Mesures (BIPM), Sèvres, France*

J. Vondrák welcomed the participants of the meeting and reported about the following activity since the last DB meeting: A letter with respect to the future of the *Standards Of Fundamental Astronomy* (SOFA) was sent to the Particle Physics and Astronomy Council (PPARC) of UK. In reply PPARC regrets that, due to dramatic cuts in the budget, it will not be able to provide the required resources to continue the SOFA development in the future. Nonetheless Dr. Vincent asked the general director of ESO whether she would allow them to count the SOFA work against their contribution to ESO operations. J. Vondrák also informed the DB that N. Capitaine will replace him as the IAU representative.

Concerning the necessary renewal of IERS components and the re-appointment of DB members, the DB decided the following: Changes of the ToR are not necessary presently. A general review of IERS components was made during the IERS Retreat 2003 in Paris. Currently the IERS is in transition again. Next year a lot of changes/transformations will appear, therefore an *internal* review is proposed by the end of 2005.

In the event that an *external* review will be planned later, the Directing Board should set up a review committee and organise a workshop with participants from other IAG / IAU components. The reviewers should take part in the workshop but report to the DB independently.

B. Richter summarized the present membership and the upcoming changes in the DB. The members are appointed for 4 years and can be re-appointed once (see ToR):

- Change from J. Souchay to R. Gaume (as announced in the proposal for the ICRS Centre)
- Change for the GGFC head (see below)
- Decisions have to be made to re-appoint the following scientific representatives: D. Gambis, C. Boucher, B. Richter. Their term will expire at the end of 2004.
- The term of the Analysis Coordinator will end in August 2005; M. Rothacher is willing to work for another term as AC. The IERS DB welcomed and accepted this offer.

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To renew the term of the scientific representatives of the Earth Orientation Centre, the ITRS Centre and the Central Bureau, a letter should be written to the directors of the hosting institutions, expressing the IERS DB gratitude for their support of the IERS and asking them to prolong the term of the scientific representatives. The letter should be signed by the chair of the DB.

B. Chao gave a short summary on the status of the Special Bureaus of the GGFC. At the SB Loading a 6-hr atmospheric loading product has been created as a first step toward becoming operational as a real-time data provider. At the SB Atmosphere a 6-month post doc from China will start working soon on AAM data update and on uniform formatting of the data of the SBA, SBO, and SBH. The finances come from the Descartes prize. A data processing example with different views, description of data (metadata), xml format, ascii format, plots, etc. has already been realized.

After seven years B. Chao will resign as chair of the GGFC but will continue as head of the SB Mantle. He raised the question about what should be done to elect a new head of the GGFC. The Chair of the Directing Board and the Central Bureau will send a letter to the GGFC SB heads to initiate the process of finding a new GGFC representative in the IERS DB. It is the consensus of the DB that the new chair should be a SB chair and should be elected by the SBs themselves.

For the election of new Chair of the DB, the following procedure was proposed and accepted and should be organized by the Central Bureau: All present DB members will be asked by e-mail whether they are willing to be a candidate for election (mid of October). There will be an election by e-mail (end of October), deadline mid-November.

M. Feissel-Vernier proposed R. Noomen as IERS Representative to the IDS Governing Board. The proposal was accepted without dissenting votes.

B. Richter reported that B. Schutz is willing to continue for another term as IERS Representative to the ILRS Governing Board. The proposal was accepted without dissenting votes.

G. Petit reported about the status at the Conventions Centre. A new Web site has been set up at the BIPM containing a Conventions Discussion Forum. A session with respect to the IERS Conventions is planned for the EGU 2005 in Vienna. Less than 10 answers have been received to the "Questionnaire on the Conventions". From these answers it could be concluded that the structure and overall quality of the Conventions 2003 are fine but the delay of the publication is a problem as well as some inconsistencies / deficiencies. To gather new and updated information for future Conventions there should be a survey to the community, expert groups, and technique services. This information should be used to update

the Conventions by discrete increments (e.g. yearly). However, a paper version would be useful.

Updating the conventions means to update models, ensuring global consistency and providing all necessary information. It has to be discussed whether models for short-term periodic effects should be considered as well as which technique-dependent effects should be treated within the Conventions.

G. Petit proposed to implement an Advisory Board for the IERS Conventions update. The Board should advise the Conventions Centre in its work of updating the Conventions, review and propose directions to the Conventions Editorial Panel, and approve / recommend for approval the new official updates. It should represent the approach of users based on their needs and experience. Proposed members are a Chair named by the IERS Directing Board, one representative of each Technique Centre and each Product Centre, the IERS Analysis Coordinator, and additional members proposed by TCs / PCs. There should be one meeting per year and additional e-mail work.

The Directing Board welcomed the activity and supports the idea to set up an Advisory Board. It was decided that the Advisory board is an action of the Conventions Centre, i.e. the Directing Board just has to find consensus on the proposed procedure and then the Conventions Centre can proceed and set up the Advisory Board.

B. Richter presented the following considerations about the role of the IERS in the future and about legal aspects:

All IAG services including the IERS are set up according to their "Terms of Reference". Calls for participation were issued to fill the duties within the services. The selected proposers provide their own financial resources to execute their obligations. Self-binding commitments are drawn up with the chairs of the respective IAG services with no legal status. Discussion on the participation in the IAG services come up episodically in conjunction with budget restrictions or national strategic reorganizations.

Since 2003 a GEOSS (Global Earth Observation System of Systems) initiative is under discussion to achieve comprehensive, coordinated and sustained Earth observations for the benefit of humankind. GEOSS will be a "system of systems" where those existing and future Earth observing systems that contribute to GEOSS retain their existing mandates (more information see <http://www.epa.gov/geoss>). At the beginning of this year IAG became a member of the GEOSS, and thanks to interaction on different levels, the IAG reference systems (and therefore indirectly the IAG services) are proposed to become the basis for all observation related to positions. If the document is signed by the participating nations (51 countries and 29 international organizations), it could become a basis for national activities to ensure the long-term geo-

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detic activities concerning observations / analyses.

N. Capitaine reported the following on the status of FAGS:

As being, since October 2003, the IAU Representative on the Council of FAGS (Federation of Astronomical and Geophysical Data Analysis Services), I participated in a FAGS Council Meeting in Southampton (UK) (19 April 2004).

The Services belonging to FAGS, were reviewed during this meeting; the points that have been especially emphasized are the importance for the services of (i) having an active Directing Board and (ii) making the data available on an efficient website in order to have the activities worldwide known. No money will be allocated any more by ICSU (International Council for Science) due to the fact that that ICSU has decided, as part of a rationalization of its structure, to discontinue its sponsorship of FAGS as an ICSU Interdisciplinary Body. An option that is under study is to find a way to associate FAGS with UNESCO.

There will be a meeting in Paris in May 2005 of the FAGS Council with the Union representatives and the Directors of the Services which will be an opportunity to consider whether there is sufficient common interest between UNESCO and the present FAGS activities for the federation of services to present a proposal for the FAGS work to become a UNESCO-associated body. If this UNESCO association does not work, an other possibility would be to create a Joint Committee between the three supporting international Unions (IAU, IUGG, URSI) that will replace the FAGS Council and will be in charge of reviewing the activities of the Services and of allocating the (weak) financial support coming from these Unions.

C. Boucher reported on the status of the ITRF. The ITRF2000 goals have been achieved but now it is time to consider a new ITRF. An update is required because of new stations, improved estimates of positions and velocities, new data including local tie information, discontinuities (earthquakes, antenna changes, ...). He proposed the following procedure: specifications to be prepared for new solutions by the ITRS Product Centre together with the Analysis Coordinator for e-mail approval by the IERS Directing Board. A first ITRF 2004 solution should be available in April 2005, computation will be done according to the ToR by the ITRS Combination Centres IGN, DGFI and NRCan. The strategy to be used should be consistent with the Combination Pilot Project. The specifications for ITRF2004 are

- weekly input data: time series, single technique combined solutions plus additional individual solutions,
- the model: TRF+EOP combination.

The exact specifications are to be distributed by e-mail to the members of the Directing Board, the deadline is mid /end October, 2004.

Afterwards they should be distributed immediately to the Technique Centres and to other relevant people.

M. Rothacher presented the current status of the IERS Combination Pilot Project (CPP). The CPP should be extended into the past by including long time series of weekly SINEX files dated before the start of the CPP. With the call IERS 2005 he proposes a rigorous combination of ICRF/EOP/ITRF using these long-term series.

The IERS DB asks that both projects ITRF 2004 and IERS 2005 should be fully coordinated, because the same SINEX file time series are requested from the Techniques Centres.

M. Feissel-Vernier mentioned that both the IERS CPP and the proposed completion of ITRF2004 will bring in 2005 new knowledge and understanding of the time evolution of station coordinates, EOP and geocenter. As a result of these two complementary projects, key questions with respect to a truly integrated solution will have to be studied, e.g. consistency across techniques, station and radiossources instability, extended modelling of the combination. After these problems have been solved, the proposed IERS2005 can be realized. Chopo Ma mentioned that the naming ICRF 2005 might be misunderstood by astronomers, because there is only one official ICRF. R. Noomen mentioned that the IERS should emphasize the need for combined products from the TCs.

A CPP workshop will take place in the San Francisco Area prior to the AGU on December 9 and 10. The following sessions were proposed:

- Combination Pilot Project and CONT'02 („Weekly“ SINEX)
- Long Time Series and their combination (ITRF, IERS2005, ...)
- Handling of Systematic Biases
- Conventions, Modeling, Parameterization
- Local Ties

W. Schwegmann gave a status report on the IERS Database as well as on the new Information System. The IERS Database is meant to archive all products of the IERS and the corresponding data to produce the products at a central place. The system is currently running in test mode. It already allows to mirror the products of the IERS product centres and to archive all relevant data. The data are transformed to XML (eXtensible Markup Language) to allow a comfortable exchange and combination of the data. Metadata of all products are going to be extracted from the product files and maintained in a specific database. These metadata can be included in “Metadata Information Systems”, allowing users to search for data sets with respect to geosciences.

The Web pages are going to be re-designed. The new Information System is a dynamic database-driven system. Thus, it allows easy

maintenance of the Web pages with respect to timeliness, redundancy and consistency. The contents of the Web pages are based on XML, also.

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.

M. Feissel-Vernier suggested that the Web site should contain an overview of the characteristics of similar data sets (e.g. EOP data) and that the availability of data plots is important for the users. B. Chao mentioned that there is cooperation between the Central Bureau and the GGFC with respect to the usage of XML.

The IERS Working Groups 2 (on Site Survey and Co-location) and 3 (on Combination) presented reports about their work.

B. Richter reported that the IERS Annual Report 2003 is ready for electronic publication. The delay was caused by late submission of some of the contributions. The following IERS Technical Notes are in preparation.

No. 30: B. Richter et al. (eds.): Proceedings of the IERS Workshop on Combination Research and Global Geophysical Fluids, 2003 (*printed, will be distributed soon*)

No. 31: C. Boucher, Z. Altamimi, P. Sillard, and M. Feissel-Vernier: The ITRF2000, 2004 (*printed, will be distributed soon*)

No. 32: D.D. McCarthy and G. Petit (eds.): IERS Conventions (2003), 2004 (*printed, will be distributed soon*)

No. 33: B. Richter et al. (eds): Proceedings of the IERS Workshop on site co-location (*in preparation*)

Because it was the last IERS DB meeting chaired by Jan Vondrak, the IERS DB thanked J. Vondrak for his dedicated engagement as IAU representative and chair of the IERS DB.

He led the IERS in a difficult phase, when its new structure had to be tested in everyday practice. We can state now that this test was successful – thanks to Jan's efforts. He could also use his authority, his diplomatic abilities and his close contacts with colleagues in Paris and other parts of the world to resolve issues inside IERS or between the scientific community and IERS.

J. Vondrak will soon have to retire not only from the IERS Directing Board, but also from his home organization, the Astronomical Institute of the Academy of Sciences of the Czech Republic in Prague. The DB wished him an enjoyable retirement, but also expressed hope that he would remain active in the field as long as possible.

The next DB meeting will be held in Vienna in conjunction with the EGU General Assembly 2005 from 25 to 29 April 2005.

Bernd Richter, Wolfgang Schwegmann, Wolfgang R. Dick