3 Reports of IERS components
3.1 Directing Board

The IERS Directing Board (DB) met twice in the course of the year 2005. Summaries of these meetings are given below.

Meeting No. 40

April 28, 2005, Technical University Vienna, Vienna, Austria

C. Ma welcomed the participants of the meeting and reported about the following activity since the last Directing Board (DB) meeting: The letters of some institutions confirming that they are still supporting their work within the IERS arrived with a delay. IGN informed the IERS that Z. Altamimi is taking over the position as head of the ITRS Centre from C. Boucher. There have been also other changes within the DB since the last meeting: C. Ma was elected as Chair of the IERS DB; T. van Dam replaced B. Chao as Head of GGFC; A. Moore has been approved by the IGS Governing Board as the second representative of IGS within the IERS DB.

A certificate was given to J. Vondrak to accomplish his work as the chair of the IERS DB. Certificates of honour will also be mailed to the former DB members C. Boucher, D. McCarthy and J. Souchay.

Reports of the Unions (IAU, IAG/IUGG)

N. Capitaine reported about planned activities for the IAU:
1. The 26th IAU General Assembly is in preparation. It will be held in Prague (Czech Rep.) from 14 to 25 August 2006. Three proposals for scientific meetings during this 2006 GA were supported by Division I (Fundamental Astronomy): two Joint Discussions and one Symposium; those approved by the IAU Executive Committee during its joint meeting with the Division Presidents (April 2005 in Rome) have been the following:
i. Joint Discussion on „Nomenclature, precession and new models in fundamental astronomy; Applications and scientific contribution to astronomy“ (Chairs of the SOC: N. Capitaine, J. Vondrak and J. Hilton; Organized by Division 1 and Commission 19 (Rotation of the Earth); Supports: Division X (Radio Astronomy) and Commissions 4 (Ephemerides), 5 (Documentation and astronomical data), 7 (Celestial Mechanics and Dynamical Astronomy), 8 (Astrometry), 31 (Time), 40 (Radio Astronomy));
ii. Symposium on „Near Earth Objects, our celestial neighbours: opportunity and risk“ (Chairs of the SOC: B. Valeschi and A. Milani; Organized by Divisions: I and III (Planetary System Sciences) and Commissions 7 and 20 (Position of minor planets, comets and satellites).
2. According to the revision of the scientific organization of the IAU, the new IAU Working Rules have been adopted by the IAU EC and are now available on the IAU web page at <http://www.iau.org/IAU/

Organization/admdoc/workrulee.html>. These rules explain how the Divisions, Commissions and Working Groups are intended to work. The main point is that the Commissions are no more permanent but are intended to evolve in agreement with the evolution of the scientific matter so that their activity should be reviewed every other GA, beginning on 2006.

3. The special Committee, chaired by T. Fukushima, that is in charge of proposing the new Division 1 organization within the newly adopted IAU rules has not yet reached any conclusion, although this will be very important for identifying to which Commission the IERS will have to report in the future. For some information regarding alternative possibilities, see the summary of the discussion at the Journées 2004 in Paris at <http://syrte.obspm.fr/journees2004> (see Programme, Discussion 1, Summary). It will be important to prepare in advance proposals for new Division I WG to be established at the 2006 GA, as for example a new WG devoted to ICRS/ICRF issues.

4. The current IAU Division I Working Groups are circulating draft reports which contain a few recommendation proposals for the next GA, regarding nomenclature (see the web page of the IAU WG on Nomenclature in Fundamental Astronomy (NFA) at http://syrte.obspm.fr/iauWGnfa/ , Chair: N. Capitaine) and Precession (c.f. WG on Precession and the Ecliptic (P&E), Chair: J. Hilton). These recommendations, agreed by the WGs NFA, P&E, RCMAM, will be supplements to the IAU 2000 Resolutions (i.e. improvement of the nomenclature and recommendation of an improved precession). This issue will be discussed at the Journées 2005 (September 2005, Warsaw, Poland).

5. Following the 2003 European Descartes award that was given to the IAU–IUGG Nutation WG, a series of 4 Summer schools and Workshops are in preparation for the years 2006–2009, the first one being a School on „Precession–nutation“ (to be held at Les Houches, France, May 2006).

6. The IAU is very much concerned by the future of FAGS (Federation of Astronomical and Geophysical Data Analysis Services) to which IERS is belonging as a service of IAG and IAU. FAGS will cease to be an Interdisciplinary Service of ICSU following the 28th ICSU General Assembly next October. New arrangements for the affiliation of the FAGS Services will be necessary. This issue will be discussed during a special meeting of the FAGS Council at UNESCO (2–3 May) in Paris where the FAGS Service Directors and the IAU and IUGG General Secretaries will participate.

C. Wilson presented news from IUGG and IAG. The next IUGG General Assembly will be held in 2007 in Perugia, Italy. The next IAG assembly will take place on August 22–26, 2005 in Cairns, Australia. It will be a joint assembly with IAPSO and IABO. The IUGG Resolutions from the General Assembly in Sapporo (2003)

have not yet been reported at a DB meeting. Relevant for the IERS are resolutions number 3 (IGGOS, now GGOS), 4 (IAU Resolutions) and 10 (GNSS) (<http://www.iugg.org/assemblies/2003sapporo/comptesRendus.pdf>, page 37ff). The IAG has been re-organized. The new structure was adopted in 2003. The former Sections are now Commissions (1–4). GGOS has been declared to be the main project of IAG. The role of the services (Technique Services, IERS, etc.) within the IAG was clarified and the work of the services was recognized. The IERS became much more prominent than in the past thanks to the service representatives in the Executive Committee of the IAG.

International Projects: GEO and GEOSS

B. Richter gave an overview about international projects, especially about GEO and GEOSS. An ad-hoc group of senior political officials from all participating countries and organizations, named the Group on Earth Observations (GEO), was formed. GEO was charged to develop a "Framework Document" plus a more comprehensive report to describe how a collective effort could be organized to continuously monitor the state of our environment, increase understanding of dynamic Earth processes, and enhance forecasts on our environmental conditions all based upon existing observing systems (Global Earth Observation System of Systems – GEOSS). Furthermore, it was to address potential societal benefits if timely, high quality, and long-term data and models were available to aid decision-makers at every level, from intergovernmental organizations to local government to individuals. Through six meetings of GEO, from late 2003 through February 2005, the required documents were prepared for adoption. Presently GEO is supported by 59 nations and 43 organizations. During the summit in Tokyo 2004 IAG became a member organization and is represented by G. Beutler respectively by C. Reigber as chair of the group. The GEOSS 10-Year Implementation Plan establishes the intent, operating principles, and institutions relating to GEOSS. It is supported by a longer Reference Document, which is consistent with the Plan and provides substantive detail necessary for implementation. The Plan was negotiated by the ad hoc GEO in Ottawa in November 2004, and adopted at the third Earth Observation Summit in Brussels, in February 2005. The Reference Document was extensively reviewed by technical experts, countries, and international organizations. More details can be seen under <http://earthobservations.org/>. The 10-year roadmap for creating GEOSS as a distributed system of systems will be built step-by-step on current cooperation efforts among existing observing and processing systems. IAG's pilot project, the Global Geodetic Observing System (GGOS), should become a prominent element of GEOSS and first steps for integrating GGOS into the GEO process have already been done. Contri-

butions to the 10-Year Implementation Plan and the Reference document discussed during the 4th and 5th GEO meeting result in recognition of the geodetic reference frames as a common product for Earth observation.

Status of ITRF2004

Concerning the status of ITRF2004, the following reports were presented:

IGS (G. Gendt): For the submissions for ITRF2004 IGS generated a combined solution covering 9 years of data (1996–2005). The individual solutions cover different time spans. Generally recent (from 1999 on) solutions are of better quality. No re-analysis of original data has been done. The parameter set is inhomogeneous, because EOPs have not been estimated before 1999. Additionally, re-analysed solutions are available (SIO: covering data from 1991, GFZ and JPL announced re-analysed data series). Nevertheless, the official product that should be used for ITRF2004 is the combined solution; individual solutions should be used for quality checks and feed-back only.

ILRS (R. Noomen): The operational products for IERS long time series converged since November 2003 (the generation process already started in 1999). 5 individual solutions produced by four different software packages are being used for combination. The two combination solutions are completely independent using different software packages and following different analysis strategies. The official ILRS product is available since June 2004. Both solutions have to fulfil the same requirements and are equal in terms of quality. However, the official product comes from ASI (ilrsa) while the DGFI solution has to be regarded as a backup product (ilrsb). The combined solution is going to be generated with a delay of 4 days after the last data has been collected. At the moment ILRS is working hard to deliver the time series for the ITRF2004 (deadline from Z. Altamimi is May 31). In the future the time series should be extended backwards from 1992 to 1983 (in summer or fall 2005) and later back to 1976.

IVS (A. Nothnagel): To create the combined solutions for the IERS Long Term Series 6 individual solutions coming from 3 different software packages are being considered. The data goes back to 1984.

IDS (M. Feissel-Vernier): The IDS does not yet provide a combined solution. 4 individual analysis centre solutions exist. The DORIS contribution for the ITRF will have some strengths for the generation of ITRF2004.

IERS Data Centre (W. Schwegmann): All data for the CPP and ITRF2004 will be archived within the IERS Data Centre. Every hour it is being checked whether there are new weekly solutions available. New solutions will be downloaded and renamed with respect to the CPP file naming conventions. Metadata will be extracted

with respect to every file. The data are available via anonymous ftp from <ftp://iers1.bkg.bund.de>. Dynamic Web pages with detailed information about the available files are provided. An e-mail message with this information will be sent out via the CPP e-mail exploder. The pages will be modified to underline which solutions are the official solutions and which ones should be used for validation only. A trial version of the Data and Information System for validation within the Directing Board will be activated on May 9.

ITRF Data Centre (Z. Altamimi): The new web site is now operational. Detailed information about all ITRF solutions can be found as well as information with respect to all stations. SINEX files containing specific stations can be downloaded. Online requests for Domes Numbers can be made and many more features are feasible. The pages are available at <http://itrf.ensg.ign.fr>.

ITRS CC NRCan (extract of an e-mail sent by R. Ferland): All recent work related to IERS has been to prepare the IGS contribution for ITRF2004 which was made available within the prescribed deadline. Hopefully, the contribution is in a state that will allow to generate ITRF2004 without delays. Details of that contribution have already been circulated, and he believes that the IGS coordinator (G. Gendt) will attend the meeting and provide more details. There has not been more activity on the „IERS ITRF CC“ simply due to lack of resources.

ITRS CC DGFI (H. Drewes]): The strategy for the generation of an ITRF2004 used at DGFI was reported. He pointed out that only one solution per technique will be included (the combined solutions from the technique services) and raised many questions that have to be clarified between the ITRS CCs.

ITRS CC IGN (Z. Altamimi): The activities of IGN as an IERS ITRF CC are presented together with the strategy for the ITRF2004 (next paragraph).

Z. Altamimi reported about the strategy for generating the ITRF2004. He repeated the description of requested data according to the call and mentioned that IERS has to give feedback to people with individual solutions to accomplish their work even if the individual solutions will not be considered. The ITRF2004 should be available in August 2005. He proposed to set up a validation group for the ITRF2004.

M. Rothacher gave some comments on the strategy: Each centre should be free to choose its own strategy to ensure a diversity of approaches and the best results. However, there are a lot of questions that have to be discussed and for that a consensus is necessary. We have to distinguish between two groups of users: For users who need a reference frame of best quality a first solution should be generated that covers only very good stations. For users from the fields geophysics and geodynamics a second solution

can be generated considering also older and historic stations. He presented quality criteria to check the individual solutions as well as a validation strategy. The final validation criteria should be set up by the AC together with the ITRS CCs.

An extensive discussion took part on the ITRF2004 and on the proposed validation panel. The decision on the panel was postponed.

Working Groups

In a report of the Working Group on Site Survey, J. Dawson pointed out that this WG has a research focus and will not be an operational group. It is a very small group. Meetings took place in Nice 2004 and a few days before this DB meeting. A further meeting is planned in Cairns. One main activity is the set up of a pilot project to specify site survey standards. The Site Survey and Co-location Pilot Project (SSCPP) has been initiated. Four groups have sent a proposal for a contribution. An important task is the request for information about local ties, that should be sent to the observation stations. It was decided that the IERS CB will send out a list of stations with addresses of persons responsible for the station and the administration. This list should be completed by the Technique Centres. Finally the letter should be sent out as a joint action of all TCs (IDS, IGS, ILRS, IVS), the IERS and the IAG/GGOS working group on “Ground Networks and Communication” (chair M. Pearlman), to avoid that the stations and the officials will receive this letter more than once.

M. Rothacher presented a detailed report on the Working Group on Combination and on the Combination Pilot Project. He reported about the current status and future perspectives of the WG and possible consequences for the IERS. It is already a great success that now routinely weekly SINEX combination files are available from IGS, ILRS and IVS. IDS provides solutions from four individual analysis centres and hopefully will provide a combined solution in the near future. The solutions are available by far less than the requested delay of 8 weeks. First inter-technique combinations at the observation level are available from GRGS.

Possible new products of the IERS

C. Ma raised the possibility of organizing and presenting EOP and geophysical excitation data in a much more integrated way to facilitate scientific interpretation of events like the 2004 Sumatra earthquake and tsunami. This could be accomplished by more direct coordination and linking of data sets between the Earth Orientation Centre and the GGFC.

IAG project GGOS

M. Rothacher gave a detailed report on the latest developments of GGOS, the Global Geodetic Observing System. He showed the activities with respect to GGOS, the structure and ToR as well as

the link to GEOSS, the Global Earth Observing System of Systems. He mentioned that there will be a GGOS programme for the IAG General Assembly in Cairns. H. Drewes mentioned that GGOS will take care that geodesy is visible within the Global Earth Observing Strategy GEOS. The GGOS programme in Cairns does still accept contributions. He proposed that the IERS DB should propose a meeting between the geometric services (TCs and IERS) and the International Gravity Field Service (IGFS).

IERS Conventions

G. Petit reported that the Web site is updated from time to time. The Advisory board has been installed in February 2005 and had its first meeting during the EGU General Assembly. Some expert groups have already started their work. The question was raised how updates should be handled and who probably has to accept them? It was agreed that proposals for significant updates should be circulated by e-mail to the DB before being introduced on the Web site and announced. B. Richter mentioned that it has already been decided that updates should be visible within the Web site. Additionally, they can be distributed via the distribution list for IERS messages and major updates should be included in the IERS Annual Report. Every 2 or 3 years a reprint of the Conventions should be made.

Report of the Central Bureau

B. Richter reported that the proceedings of the Matera workshop are finished and the Annual Report 2003 is in print. For the Annual Report 2004 the missing contributions were listed.

Proposal: EOP Prediction Comparison Campaign

H. Schuh presented a proposal for an EOP Prediction Comparison Campaign which should run under the auspices of the IERS. The proposal was accepted to be performed in cooperation with the IERS Rapid Service and Prediction Centre. It has been decided that H. Schuh should contact W. Wooden to work out the details.

Miscellaneous

The IERS DB decided that Claude Boucher's mandate as IERS representative in the IGS should be prolonged. The CB was asked to contact him to ask if he is willing to continue as IERS representative in the IGS.

The CB will contact Rene Forsberg to ask for an IGFS/IGeoidS representative as successor of Peter Schwintzer.

In fall of this year an IERS CPP workshop is planned. The workshop is planned at GFZ in Potsdam but there is a proposal to run the workshop in conjunction with the ILRS workshop in Sussex for cost saving reasons. The date and location will be fixed soon.

For 2006 there is an invitation of the European Centre for Geodynamics and Seismology ECGS to held a joint IERS/ECGS workshop dedicated to the subjects of the Geophysical Fluid Cen-

tres. The ECGS will provide financial support for the organisation of the workshop which can be used e.g. to invite people.

The next IERS DB Meeting will possibly be held during the AGU Fall Meeting 2005 at San Francisco.

Meeting No. 41

December 5, 2005, Marriott Hotel, San Francisco, USA

C. Ma welcomed the participants of the meeting and reported about the following activity since the last Directing Board (DB) meeting: In coordination with the DB he sent a letter of support for the Australian National Geospatial Reference System. He noted the departure of Martine Feissel and Sheng Yuan Zhu. Both were member of the IERS for a long time, especially Martine Feissel who served as the first director of the IERS Central Bureau.

Reports of the Unions (IAU, IAG/IUGG)

Nicole Capitaine as IAU and FAGS representative reported about the latest actions and information.

The XXVIth General Assembly of the IAU will take place in Prague from August 14 to 25, 2006. The GA is organised as four Invited Discourses, six Symposia, 17 Joint Discussions and seven special sessions. The details of the preliminary programme are given under http://astro.cas.cz/iau2006/SciProgram.html. The relevant Joint Discussion to IERS subjects is coordinated by Division I, Commission 19 together with Division X, Commissions 4, 5, 7, 8, 31, 40 and titled “Nomenclature, Precession, and New models in Fundamental Astronomy”. The six sessions of the Joint Discussion will cover the state of the art of the implementation of the IAU resolutions, the precession and the ecliptic, the high accuracy models for reducing astronomical observations, new terminology in fundamental astronomy, scientific applications of high accuracy astronomy and a general discussion. For 2007 the IAU Division I proposes an IAU symposium “A giant step for astrometry: Hipparcos to GAIA” in Shanghai, October 22–26.

During the 28th ICSU General Assembly in China, October 18–22, 2005, it was decided to extend ICSU’s sponsorship of FAGS for a period of three years. During this 3-year period, FAGS will continue to fulfil its role of coordination among the services, while ICSU will examine integration of this function within its activities in data and information. This decision is the result of an action from the IAU, IUGG and URSI, who submitted this alternative to the ICSU GA that received a strong majority of votes among both the national members and union delegates of ICSU. On March 29–31, 2006, there will be a FAGS council meeting in Paris to discuss with the service directors possible future steps to guarantee the continuation.

Clark Wilson summarized the scientific highlights of the IAG 2005

assembly in Cairns. During the Global Geodetic Observing System (GGOS) project meeting Markus Rothacher became the new chair with Ruth Neilan and Hans-Peter Plag as vice chairs. GGOS should become operational in 2007. The IAG Executive Committee adopted the following motion on UTC: "On the basis of … surveys conducted by the IERS, indicating that a large majority in the IAG user community would like to maintain the status quo, the IAG EC recommends at this time no change in the current method of relating UTC to UT1."

International Projects: GGOS and GEO

Markus Rothacher reported on GGOS. The goal is to implement GGOS as a functional system the next 2 to 3 years. Therefore it is necessary to strengthen the internal organization, develop a GGOS implementation plan and take into account the rapid external developments in GEO/GEOSS and IGOS-P. Presently GGOS is preparing a strategic paper to join the Integrated Global Observing Strategy – Partners (IGOS-P) programme. The proposed theme for IGOS-P is "Earth System Dynamics". GGOS will define its contribution to GEOSS with respect to the nine social benefit areas and will try to increase the visibility of GGOS (and geodesy) in GEO. Rothacher sees the coordination of the services as the main internal goal of GGOS. The goal is to generate a highly-accurate, consistent set of GGOS products for society, going from data to interpretation / information. A GGOS retreat is scheduled in early 2006.

B. Richter gave a short review on the process to establish the Group of Earth Observation (GEO) and the involvement of geodesy presented in the reference document. For 2006 a work plan exists to lay the foundation of GEOSS. E.g., GEO members and participating organizations are asked to reach agreements on GEOSS interoperability specifications, and an inventory should be produced, by societal benefit area, of existing in-situ observation networks.

Report of the Conventions Centre

Gérard Petit introduced Brian Luzum as his new partner in USNO and presented a short overview about the latest developments in the Conventions Centre. The advisory board started working in February 2005 and identified several topics which should be included in the Conventions like the pole tide correction and the diurnal / semidiurnal atmospheric pressure loading effect. Furthermore the Conventions Centre established a discussion forum and new web pages to report conventions updates.

Report on Combination Workshop in Potsdam, Oct. 10–11, 2005

In his talk Markus Rothacher summarized the highlights and the results of the workshop. The presentations given at the workshop are displayed at <www.iers.org/MainDisp.csl?pid=66-25727>. The workshop publication is under way.

Report of Technique Centres (Intra-technique combination, Input to ITRF2004 and CPP, CONT05)

IGS contribution

Remy Ferland recapitulated the status of the IGS solutions contributing to the ITRF. The input GPS series started in 1996 with improving accuracy from 10 to 2 mm for the horizontal and 30 to 10 mm for the vertical. Weekly solutions are available comprising an increasing number of stations from 75 in the beginning to 250 now. Earth Rotation Parameters and apparent geocentre variations are analysed from the second half of 1999 on. Today eight analysis centres routinely produce weekly solutions using six different software packages. About 50 % of the stations show discontinuities but the detection entails some subjectivity. With the change from relative to absolute antenna calibration most of the IGS users are affected.

ILRS contribution

On behalf of Ron Noomen Peter Shelus gave a brief overview about the ILRS analysis work. Six analysis centres contribute to the weekly combined solution, which is calculated by ASI with a backup solution prepared by DGFI. The combined ILRS solution is available each week on Wednesday and comprises about 10 – 25 SLR stations. A reanalysis has been done with observations from today to 1993. In a next step older SLR observations will be reanalysed as well. The reanalysed data sets are available for the new ITRF.

IVS contribution

Chopo Ma gave a short presentation about the implications of 0–24 h UT observations and the CONT05 campaign. Currently the session start times are arranged according to personnel working schedules and air freight times. Changing to 0–24 h UT sessions without additional costs and data transfer delays would require unattended operation and transmission of data via network. CONT05 had 15 continuous days with 11 stations. Preliminary results are good.

IDS contribution

Hervé Fagard said that a call has been issued to elect a new analysis coordinator because Martine Feissel-Vernier has retired. A new station at Monument Peak, USA is co-located with the SLR station. IGN supports more co-locations and would like to see recommendations from the IERS to the IDS for better co-location. Nine DORIS stations are co-located with SLR stations. The IDS network could have more new stations but nonetheless keep the old stations which are not co-located.

In view of ITRF2005, Pascal Willis and several colleagues provided a synthesis document for combination centres, describing specific problems related to DORIS station discontinuities and non-linearity as well as specific DORIS data problems (P. Willis et al.: IDS recommendations for ITRF2004, version 1.0, November 2005, http://ids.cls.fr/html/report/reports.html).

Status of ITRF

The ITRS Combination Centres DGFI (Detlef Angermann) and IGN (Zuheir Altamimi) reported about their first results for the new ITRF. NRCan (Remy Ferland) was not able to produce a combined tech-

nique solution but gave more details about the IGS combined solution.

The DGFI and IGN used weekly SINEX solution files (positions and daily EOPs) as input:

- GPS (NRCan): 1996–2004 (updated up to July 2005). EOPs before June 1999 are not available.
- VLBI (GIUB): 1984–2005 (new version submitted in Oct. 05)
- SLR (ASI): 1993–2005 (new version submitted in Nov. 05, called V4 at IGN and V5 at DGFI)
- DORIS (3 Individual AC solutions: IGN, LCA, INA): 1993–2004. Co-location tie vectors (recently updated by IGN).

Discontinuity tables for station positions were provided by IGS, IVS, IDS but are still missing from ILRS. The adjusted parameters are station positions, velocities and EOPs.

The DGFI solution introduced an a priori datum by setting up Helmert-transformation parameters and accumulated the weekly normal equations. A new approach was tested: simultaneous estimation of the TRF and EOP where the EOP serve as a “global tie” between the different techniques so that the EOP provide valuable information to validate local tie selection. In a test case combining VLBI and GPS solutions 13 “good” co-location sites were identified.

Zuheir Altamimi prepared some time series analysis of the submitted solutions to ITRF2005. The quality of the combined technique solution is dependent on the quality of the individual stations. The effect was demonstrated using “all” SLR stations versus the quality of a combined solution built by selected “well performing” stations. Therefore the weekly WRMS (internal precision) of ILRS solutions is better than 1 cm when using the well performing stations. The SLR trend in the z-component and in scale, with respect to ITRF2000, might result from the fact that there is only one core ILRS site (Yarragadee: co-located with GPS and DORIS) in the Southern hemisphere. A new VLBI solution was provided by the IVS in November including all observations from 1980 on. The NASA SOLVE program had software problems in providing the NEQ for some sessions. For DORIS only the IGN and the LCA solutions were taken into account since a combined DORIS solution from the IDS was not available.

In total the new ITRF will comprise about 600 stations with the majority being GPS stations. EOP will include polar motion, UT1 (from VLBI) and LOD.

The Technique Centres’ Analysis Coordinators will be informed about the results through a web site that is not accessible publicly.

Z. Altamimi promises a first “final” result in spring 2006. Because the data covers most of the year 2005 the new ITRF should be updated and named ITRF2005. The DB agreed with the renaming.

Consequences of ITRF2005: New polar motion/UT1/nutation series

Daniel Gambis characterized the current precision of various individual solutions with respect to other combined solutions. More critical than precision is the accuracy which reflects the real uncertainties of the solutions taking into account the inconsistency of the EOP system with respect to the terrestrial and celestial frames, inconsistencies, and systematic errors. In cooperation with IGN the CATREF software was used to derive polar motion, UT1 and LOD from a multi-technique combination of TRF and EOP. A first approach was given for corrections to align the C04 to the ITRF2005.

Based on these experiences the Earth Orientation Centre proposed to implement the new EOP solution based on ITRF2005 on 1 May 2006 with an extension of the combined solution to that date. The C04 would be then re-computed back to 1962 with all other combined EOP series (C01, C02) recomputed in the same frame. There would be a weekly update using CATREF for a combined TRF+EOP solution with a delay of some weeks. Moreover, the current computation based on techniques combined solutions (IGS, IVS, ILRS) and individual solutions would still be used for the permanent solution IERS C04 and prediction. After some discussion the IERS DB did not accept this new concept and will discuss the subject later again.

Possible "New Products and Structure of the IERS"

Markus Rothacher started this item on the agenda by giving his vision of new products and a future oriented structure of the IERS. Based on the experiences with the ITRF2005 and the WG on Combination possible future products could be:

- Multi-Year solutions (ITRF, EOP, ICRF – reprocessed high-accuracy combined long term intra-technique series),
- Weekly "Final" (EOPs, station coordinates – based on the "final" routine intra-technique combined products and the multi-year solutions),
- Daily "Rapid" (EOPs, station coordinates, (near real-time monitoring) – VLBI Intensive and IGS Rapid Products and, possibly SLR & DORIS),
- Daily "Predicted" (EOPs – combined daily rapid IERS products).

He proposed IERS Combination Centers (CCs) for multi-year, weekly "final" and daily "rapid" combined solution generation. The CCs should be selected through the usual IERS procedure, Call for Participation, asking institutions to apply for one or more of the combination tasks. Chopo Ma added that it is important to have more redundancy in the multi-year solutions, to include more institutions and make the IERS and the products more attractive for the outside users.

Claude Boucher emphasized that the IERS must continue to generate and document its unique products with a high consist-

ency. Zuheir Altamimi stated that the IERS already has well defined products for the TRF, EOPs and CRF and that renewal of the basic products should be between 1 and 4 years. Both did not agree to weekly coordinate products because they did not see users or applications. For EOPs the situation is different.

In a lively discussion no common agreement was achieved and decisions were postponed.

Working Groups

William Wooden presented the concept of a new Working Group on Prediction. In a short presentation he explained the background, the goals, the expected outcomes, the organization and the schedule. The DB confirmed the working group.

John Dawson terminated his membership and his function as chair of the Working Group on Co-location because of other business obligations in Australia. Gary Johnston was proposed as the successor. Geoscience Australia will provide funds so that he can lead the working group and participate in meetings. Zuheir Altamimi will contact him to make the transition.

The Working Group on Datum Definition, a joint working group with IAG Commission I, was never set up. The proposed chair Geoff Blewitt is not willing to chair the administrative part of the working group. Because there is no urgent need the DB decided to close the effort in setting up this IERS working group.

Ad-hoc Committee for Leap Second

Due to a lack of time the presentation of Daniel Gambis was postponed to the next DB meeting.

Report of the Central Bureau

For the same reason the report of the CB was shortened. The DB encouraged the CB to create a concept for an IERS monograph. A workshop on geophysical fluids in Luxembourg, October 5–6, 2006, was supported by the DB.

Next IERS DB meeting

The next IERS Directing Board meeting will be in conjunction with the EGU General Assembly in Vienna, Austria. It will be a full day meeting held at the Technical University on April 8, 2006.

Bernd Richter, Wolfgang Schwegmann, Wolfgang R. Dick