3.2 Central Bureau

General activities

The IERS Central Bureau (CB), hosted and funded by Bundesamt für Kartographie and Geodäsie (BKG), organized and documented the IERS Directing Board (DB) Meetings No. 42, April 8, 2006, at Technical University Vienna, Austria, and No. 43, December 11, 2006, in San Francisco, USA. Between the meetings the CB coordinated the work of the DB.

Together with the GGFC, the CB prepared an IERS Workshop on Global Geophysical Fluids, held December 6–7, 2006, at Hotel Grand Hyatt in San Francisco, CA, USA. 21 specialists took part in this workshop. The presentations were published at the IERS web site. For a summary see Section 4.

The CB presented the activities of the IERS with oral and poster presentations at the Geotechnologien Statusseminar 2006 and the Geodetic Reference Frames GRF2006 Symposium. In March 2006 B. Richter took part in the FAGS council meeting in Paris and gave a report on the IERS activities.

IERS components maintain individually about 20 separate web sites. The central IERS site <www.iers.org>, established by the CB, gives access to all other sites, offers information on the structure of the IERS, its products and publications and provides contact addresses as well as general facts on Earth rotation studies. It contains also electronic versions of IERS publications, a list of meetings related to the work of the IERS, and an extended link list for IERS, Earth rotation in general and related fields. At the beginning of 2006, the web site was re-launched with a new layout and new organization (see below).Throughout 2006 the web site was regularly enlarged and updated.

The book “The International Celestial Reference System and Frame, ICRS Center Report for 2001–2004” (edited by Jean Souchay and Martine Feissel-Vernier) was published as IERS Technical Note No. 34 in online and printed forms. The IERS Annual Report 2004 appeared in printed form. The CB prepared also the IERS Annual Report 2005 for publication. Along with the reports of the IERS components, it contains information on the IERS compiled by the CB.

During the year 2006, 25 IERS Messages (Nos. 80 – 104) were edited and distributed. They include news from the IERS and of general type as well as announcements of conferences.

Address and subscription information has regularly been updated in the IERS user database. There were about 2500 users in 2006 with valid addresses who subscribed to IERS publications for e-mail and regular mail distribution.

Several questions from IERS users concerning IERS publications and products as well as Earth rotation and reference frames in general were answered or forwarded to other specialists.

IERS Data and Information System (DIS)

Since the end of 2005 the new dynamic and database-driven IERS DIS is running in operational mode. It is based on a LAMPP System, running on an Apache Web server, storing data in a MySQL database and presenting data and information via PHP. At the end of 2006 the LAMPP system was upgraded to a newer version, i.e. from Apache 1.x to 2.x, from MySQL 3.x to 5.x and from PHP 4.x to 5.x, because the newer versions get rid of several bugs, provide more options and are more stable.

The basic characteristics of the system, i.e. the usage of the eXtensible Markup Language (XML) as common technique to describe all data formats as well as the maintenance of ISO standardised metadata was already described in detail in the IERS Annual Report 2005. Because all IERS products and data are transformed into formats based on XML, the data can easily be integrated and combined and the same XML based tools can be applied on all data, like for example the IERS Plot Tool. The administration of product metadata allows to search for data with respect to content, time, location, etc. Considering the ISO 19115 standard *Geographic Information – Metadata*, the metadata can be easily distributed to so-called Meta Information Systems (MIS). MIS collect metadata from various sources, thus realizing an integrated search for data from various geo-sciences which will enlarge the users of the IERS products. In 2006 a test implementation phase was started, in order to distribute the metadata of some IERS products to the GeoPortal.Bund (<http://www.geoportal.bund.de>), an MIS to search for geo data in Germany. The Catalogue Service Web (CSW) interface of this Portal was adapted to the IERS metadata database, thus allowing to read the metadata of the IERS products and to display them within the GeoPortal.Bund Web interface.

The Plot Tool, designed in 2005 and described in the IERS Annual Report 2005, was implemented and evaluated. It consists of two main components: a Java based Plot Engine to render the plots and a PHP based user interface (Web pages) to configure the plots, to select between several plot configurations and their plot options and to invoke the Plot Engine. Since the user interface is build upon the same techniques as the IERS DIS and its Administration Tool – i.e. a LAMPP system – it can be integrated seamlessly into the existing system. The Plot Tool allows the users to visualise data from the various available products on the fly. If reasonable, datasets can be presented in one plot and compared to each other. The data for the plots are being extracted from the product versions by using their XML format descriptions. Likewise, the XML format description is being used by the administrator to define in beforehand which data from which products are available for a plot and which plot configurations are meaningful. The visualisation module

provides all defined plot configurations to the user, who can choose a specific presentation from the available pre-defined configurations.

Currently the Plot Tool provides only a basic user interface which is not sophisticated enough for all external users and thus it has to be adapted especially for non expert users. However, the Plot Tool can already be used in the so called batch mode in order to create pre-defined plots automatically. The creation of such plots and their integration into the IERS web site will be realized in 2007.

Publications

Dick, W. R.; Richter, B.; Schwegmann, W.: The ICRS and the IERS Information System. In: R. Gaume, D. McCarthy, J. Souchay (eds.), The International Celestial Reference System, Maintenance and Future Realizations, Proceedings of IAU General Assembly XXV, Joint Discussion 16, Sydney, Australia, 22 July 2003. [Washington, D.C.: U.S. Naval Observatory, 2006], p. 154–157

Richter, B.; Schwegmann, W.: IERS Data and Information System. In: J. Flury, R. Rummel, C. Reigber, M. Rothacher, G. Boedeker, U. Schreiber (eds.), Observation of the Earth System from Space. Berlin, Heidelberg: Springer-Verlag, 2006, p. 321–332.

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