

1 THE COMMITTEE ON ELECTRONIC INFORMATION AND COMMUNICATION

This is a report on the meeting of the Committee on Electronic Information and Communication (CEIC) of the IMU in Berkeley, December 5, 1999, MSRI, during and after the conference ‘The Future of Mathematical Communication’ Berkeley, Dec. 1-5, 1999, see: <http://msri.org/activities/events/9900/fmc99/index.html> for the full record of the conference including overheads and streaming video. The conference was very successful. It was jointly sponsored by the three Canadian research Institutes (CRM, Fields and Pims) and by MSRI, with additional support from the IMU, AMS, CMS, Springer, Cambridge University Press, Mathematica and Maple. Their support is gratefully acknowledged.

There were roughly 100 participants and 35 speakers from more than a dozen countries representing mathematicians, computer scientists, physicists, educators, librarians, software developers, publishers and many other perspectives. One highlight was a stimulating public symposium held on December 4th. This symposium — as much of the rest of the meeting — helped emphasize that we are a small part of a much larger world. In particular, there are three parts to the mathematical literature: commercial journals, freely accessible parts (see below), and all the rest.

The CEIC is a standing committee of the IMU which held its first meeting in Berlin in November 1998 and its second meeting on December 5th, 1999 at Berkeley. It will meet next fall in Vienna. As described in Appendix 1, the CEIC has an ambitious mandate and is now quite advanced in its activity. Some details of the December 5 meeting follow. They give a good sense of the CEIC’s preoccupations and of topics discussed at the conference.

2 THE DECEMBER 5 1999 CEIC MEETING

The morning was a session of the CEIC, open to the general public, with the following lectures:

- Peter Michor, Martin Grötschel: Presentation of CEIC, its members, and its subcommittees
- Wolfram Sperber: The Idea of Secondary Home Pages in MathNet
- Roland Schwänzl: Metadata — a Tool for Indexing and Linking Mathematical Preprints Globally
- Wilfrid Hodges: What do you want from your publisher? (Copyright issues)
- Peter Michor: Electronic services offered by the European Mathematical Society
- Jonas Gomes: MathNet in Brazil
- Kapil Paranjape: The Situation in India
- Open Discussion of the Prospects for MathNet and Similar Activities

The afternoon was a closed session of CEIC. *Present:* Jonathan Borwein (deputy chair, CA), John Ewing (US), Jonas Gomes (Brazil), Wilfrid Hodges (UK), Martin Grötschel (D), Kapil Paranjape (India), Peter Michor (chair, A), David Morrison (US), Alf van der Poorten (AUS), Alexei Zhizhchenko (RU), *Absent:* Qin Zhou (China)

1. The MathNet initiative which was started in Germany will be developed as a world-wide system of access to electronic information and communication. It is based on the use of machine readable metadata for preprints, institutions, persons, etc., which are developed within the framework of the 'Dublin core metadata initiative'. Contacts are being preserved with the Santa Fee initiative on metadata for preprint servers. See <http://www.mathnet.de/> for an entry point into the existing system. A charter for the organizational infrastructure was discussed and will be available on the MathNet site soon. Many thanks are owed to our German colleagues who have been developing MathNet for several years.

It is anticipated that the CEIC will have a robust web site by April and will make a general call for the establishment of secondary home pages and for development of harvestable preprint servers. Prototypes are presently being checked in Vancouver, Rio de Janeiro and elsewhere.

2. A checklist devoted to copyright issues for authors of mathematical literature is in preparation. This will be continued as an open source initiative, lead by Wilfrid Hodges. See <http://www.maths.qmw.ac.uk/wilfrid/copyrightdoc.pdf>.
3. The CEIC discussed whether bundling of small and independent journals should be considered so that they could compete with the large electronic libraries of Elsevier, Springer-Verlag, and Academic Press in consortia negotiations. The European Mathematical Society EMIS (<http://www.emis.de>) is addressing this already, in freely accessible fashion. The work of EMIS is commended and encouraged by CEIC.

What will happen to the electronic material in the electronic libraries of the commercial publishers? Will the publishers archive this material permanently? Should there be an independent archiving facility somewhere?

4. The arXiv (<http://www.arXiv.org>) is a very reliable and technically very competent server for primary physical and mathematical literature, growing out of the Los Alamos preprint server. It is willing to consider reliable archiving for the indefinite future. The work of the arXiv is also commended and applauded by the CEIC.

3 APPENDIX 1: THE CEIC'S TERMS OF REFERENCE

Building on the enabling resolution passed by the General Assembly (GA) in Dresden on August 16, 1998, the Executive Committee of the International Mathematical Union establishes a *Committee on Electronic Information and Communication (CEIC)* of the International Mathematical Union (IMU).

Terms of Reference:

- a) The CEIC shall be a standing committee of the Executive Committee (EC) of the IMU, to be reviewed every four years by the EC at its meeting preceding that of the GA. Members will be appointed for four year terms by procedures similar to those for Commissions of the IMU. The Executive Committee will appoint one of its members to serve on the CEIC.
- b) The CEIC may meet as necessary in each four year period, review the development of Electronic Information and Communication as it impacts the international mathematical community and submit a report to the EC.
- c) The CEIC may organize or sponsor international meetings or forums to bring together representatives of all interested parties, including societies, publishers, libraries, and researchers, publish and otherwise disseminate proceedings, reviews of recent developments, and technical surveys for the use of the mathematical community.
- d) The CEIC may recommend international standards on issues related to electronic communication. Such recommendations should be reviewed by the EC and, if approved, may be published and promoted in the name of the IMU.
- e) During its first 4 year term, the CEIC is specifically asked to address the coordination of world-wide efforts to establish web-based servers for mathematical papers, preprints, journals, and books. This includes issues of uniformizing metadata, document identifiers and supported formats, promoting mirroring and the development of search engines for mathematical material and coordination of existing servers. It should publish its findings with the goal of making the use of these servers universally understood and usable by the whole mathematical community. It is also asked to consider transferring the World Directory of Mathematicians to an electronic freely accessible form.
- f) Membership:
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