

Recommendations on Information and Communication

The Math-Net Charter

The Charter

General

In the spirit of the centuries-long tradition of open exchange within the mathematical community, this Charter describes an international effort to establish, maintain, and continue to develop a global electronic information and communication system for mathematics. This system, called Math-Net, is intended to organize and enhance the free flow of information within mathematics. The objective is to place efficient access to high quality mathematical information at the fingertips of the user. The use of Math-Net is free. Information in Math-Net is freely available whenever and wherever possible limited only by technical, legal, and privacy constraints.

Math-Net is supported and fostered by individuals, mathematical organizations and institutions worldwide. Math-Net is organized under the aegis of the [International Mathematical Union](#) and is steered by the IMU [Committee on Electronic Information and Communication \(CEIC\)](#). See also the Web server of CEIC <http://www.mathunion.org/ceic>.

Principles

Math-Net, from a technical point of view, is a [structured](#), [distributed](#), [interoperable](#), [user-friendly](#), and [high quality](#) electronic information and communication system. Math-Net is organized via a [user-driven](#) and [not-for-profit](#) activity [open](#) for all willing to provide mathematical information electronically.

Math-Net is based on voluntary contributions of organizations or individuals. Depending on their role, they are designated as [Math-Net Members](#) or as [Math-Net Service Providers](#). Math-Net Members make their information resources electronically available in a standardized fashion. They have full responsibility for the quality, accuracy, timeliness, and appropriateness of the data they contribute. Math-Net Service Providers combine these data into services. These services aim at providing fast and well-structured access to the mathematical resources within Math-Net (and possibly beyond).

Efforts will be made to facilitate participation in Math-Net for those who have limited financial means.

Organization

The organizational structure supporting Math-Net is intended to be light and flexible yet sufficient to coordinate and steer this activity.

The following institutions form the organizational backbone of Math-Net:

- the [IMU Committee on Electronic Information and Communication](#),
- [Math-Net Members](#) and their designated [Information Coordinators](#),
- [Math-Net Member Associations](#),
- [Math-Net Service Providers](#),
- the [Math-Net Technical Advisory Board \(TAB\)](#).

Their tasks and responsibilities are as follows:

CEIC steers and coordinates all activities. CEIC, in particular, appoints a Technical Advisory Board (TAB). TAB supports CEIC in the development of technical concepts and their realization.

Any institution, person, or group of persons willing to make its mathematical electronic resources available within the scope of Math-Net may become a Math-Net Member. Each Math-Net Member, represented by its Information Coordinator, participates in the advancement of Math-Net through Math-Net Member Associations.

Services, useful for the mathematical community, will be defined and developed within Math-Net. Each Math-Net Service is established and maintained by a Math-Net Service Provider which may be a single institution, or a group of institutions or volunteers. CEIC will especially draw on the expertise of representatives of Math-Net Service Providers to form the Technical Advisory Board.

Status of the Charter

This Charter forms the basis of the Math-Net activities. It has been accepted by the Executive Committee (EC) of the IMU at its meeting on May 16, 2000. CEIC is asked to report to the EC by May 30, 2002 about the experience with the Charter and the way Math-Net is operating. CEIC is also requested to suggest possible modifications so that the General Assembly of the IMU can decide on (a possibly adapted version of) the Charter at its meeting in August 2002.

CEIC is asked to formulate a supplement to this Charter in which organizational and other issues necessary to implement Math-Net are explained in more detail. This supplement should be made available electronically together with the Charter employing appropriate links. It is expected that the organization of the Math-Net System and the Math-Net activities undergoes an evolutionary process and that changes are reflected in the supplement of the Math-Net Charter whenever necessary.

Supplement

The Math-Net endeavor is specified by its

- [aims](#),
- [contents](#),
- [characteristics](#),
- [organization](#).

Aims

The general aims of the Math-Net activities are

- to establish a high-quality electronic information and communication (short: i&c) system for mathematics along the lines of the [Math-Net Principles](#),
- to install portals to mathematical information,
- to improve access to mathematical resources.

Math-Net will engage itself to

- structuring, organizing, and standardizing the information offered by Math-Net Members,
- describing and analyzing the contents of objects and links,

- indexing data and [metadata](#),
- archiving material of long-term interest,
- developing and applying high-quality presentation and authoring methods,
- developing enhanced methods for retrieval,
- insuring software interoperability and interdisciplinary compatibility,
- improving scientific information services.

Contents

Math-Net intends to cover the complete range of mathematical information, e.g.,

- preprints, published papers, theses, monographs, and collections of papers such as proceedings and collected works,
- abstract and reviewing services,
- lecture notes, teaching and educational materials,
- information about mathematical departments, institutions, and societies,
- information about research projects and job offers,
- information about special interest groups and other networks of mathematicians,
- professional data of mathematicians,
- announcements of events such as talks, colloquia, workshops, and conferences,
- software and data collections relevant to mathematics,
- visualization, audio, video and other multimedia data of mathematical interest.

In order to enable user-friendly access to mathematical information Math-Net intends to develop suitable methods, tools, and standards. Math-Net is

- a structured i&c system:
Math-Net Members make their local information available according to standardized principles. This is realized via a so-called Math-Net Page and the use of metadata. The Math-Net Page is a special homepage (a "secondary" homepage) for the member institution with a standardized, simple layout and structure. Metadata is an expression for "data about data". Metadata serve to provide information, e.g., about the contents, form, terms, and conditions of a document. They are in particular used for the automatic indexing, processing, and retrieval of large data sets. Metadata sets will be defined for important types of documents within Math-Net following international standards such as [Dublin Core](#) or [RDF](#).
- a distributed i&c system:
The information Math-Net Members contribute to Math-Net is stored and maintained on the servers of the participating institutions. Math-Net Members retain ownership of their data. However, they agree to make metadata available to enable Math-Net Services. Math-Net Services gather and process local information to make them globally accessible in a unified fashion. Math-Net Services are distributed too: They are provided on the servers of the Math-Net Providers who may be spread around the world.
- an interoperable i&c system:
Interoperability is of high priority. Special efforts will be made to ensure compatibility of Math-Net with similar information systems currently under development in other scientific disciplines.
- a user-friendly i&c system:
Math-Net will have a simple and intuitive user interface. Powerful retrieval mechanisms will provide easy access to its content. Math-Net will also supply useful tools for robust and simple input of documents and metadata.
- a high-quality i&c system:
Math-Net Members commit themselves to offer high-quality information only. CEIC may

decide to define quality criteria and seek for methods to ensure that these standards are followed.

The Math-Net activity is

- user-driven:
Math-Net is - under the aegis of the IMU - in fact a grass root activity driven by individuals and institutions with an interest in making mathematics electronically accessible. Math-Net does not only address active mathematicians but also all other persons and institutions interested in mathematics. Math-Net will develop along the needs of its users. The IMU invites every interested institution and individual to participate in this endeavor. CEIC will set up mechanisms to ensure broad participation and to take up and realize suggestions.
- not-for-profit:
All Math-Net activities are not-for-profit. CEIC acknowledges widespread uncertainty about terms and conditions with respect of the use of electronic and electronically distributed information. CEIC will make an effort to define and provide suitable and practicable guidelines.
- open:
All interested institutions and persons can take part in Math-Net activities. All interested users have access to Math-Net. Math-Net is open for all types of mathematical information. All standards and recommendations developed within Math-Net will be made publicly available in the Web.

Organization

Math-Net Membership

To become a Math-Net Member it is necessary:

- to locally offer mathematical information of high quality,
- to structure the information according to the Math-Net Standards and Math-Net Recommendations,
- to appoint an Information Coordinator,
- to accept the Math-Net Charter.

Application for membership has to be directed to CEIC or an institution authorized by CEIC. The CEIC or an authorized institution will advise applicants and decide on membership applications.

Math-Net Member

The Math-Net Members constitute the base of Math-Net. They are, in particular, the prime data providers. Math-Net Members may actively take part in the Math-Net activities.

Tasks

Math-Net Members offer

- metadata of their documents and information resources,
- full versions of their electronic documents - whenever possible.

Information Coordinator

Every Math-Net Member appoints its Information Coordinator who is the Member's official contact person for all Math-Net activities.

Tasks

- The Information Coordinator is responsible for the local information offer.
- The Information Coordinator engages actively in ensuring comprehensive local information of high quality and stays in contact with the Math-Net Service Providers to make sure that the local data can be accessed by the service mechanisms.
- The Information Coordinator participates in the global Math-Net development, e.g., via Math-Net Member Associations.

Math-Net Member Associations

Guided by CEIC, the Math-Net Members organize themselves in Math-Net Member Associations. These associations may arise by regional, national, subject-oriented, or other forms of cooperation. Mathematical societies are requested to engage in forming Math-Net Member Associations and to support their work.

Tasks

- The Math-Net Member Associations take part in the development of Math-Net. They support the communication process within the Math-Net activities.

The Committee on Electronic Information and Communication

The IMU appoints the members of CEIC. CEIC has the final responsibility for all activities within Math-Net. CEIC may form Math-Net Member Associations, appoint subcommittees, a secretariat, boards, or task forces to serve special purposes or to suggest solutions for open problems. All activities proposed by these groups are subject to CEIC approval.

Tasks

Tasks of CEIC are, in particular, to

- define guidelines for the Math-Net activities,
- cooperate with the Math-Net Member Associations,
- organize the communication within Math-Net,
- coordinate the Math-Net activities with the IMU and other professional societies in mathematics,
- define Math-Net Services and conclude agreements with Math-Net Service Providers,
- declare Math-Net Standards and Math-Net Recommendations,
- communicate and cooperate with other initiatives in the field of scholarly communication,
- support Math-Net Members that have limited financial or technical resources.

The Technical Advisory Board (TAB)

TAB is a subcommittee of CEIC. CEIC appoints the members of TAB. Math-Net Service Providers are represented in TAB. TAB may form task forces for the solution of technical problems and may draw on expertise from the Math-Net Member Associations and outside.

Tasks

- The purpose of TAB is to propose methods, standards, and tools for the further technical development of Math-Net. Math-Net uses methods, standards, and tools that should be as simple and robust as possible. TAB should follow the development of emerging and enhanced techniques for the improvement of Math-Net.

- TAB and/or task forces develop and propose Math-Net Standards and Math-Net Recommendations.
- TAB is responsible for the technical aspects of the Math-Net Communication Platform.

Math-Net Services and Math-Net Service Providers

A Math-Net Service is an official predicate awarded by CEIC. Math-Net Services are portals to Math-Net resources. The quality of Math-Net Services is essential for the use and the acceptance of Math-Net. Math-Net Services work independently within the limits of the Math-Net Charter. A Math-Net Services Provider can be a consortium of institutions and/or persons or a single institution and/or person. The Math-Net Service Providers are represented in TAB.

Tasks

- Math-Net Services gather information provided by the Math-Net Members and others, index and process this information (data and particularly metadata) and make it accessible in a user-friendly fashion.

Math-Net Standards and Math-Net Recommendations

Math-Net Standards define minimal criteria and requirements for the structure, the contents, and the design of the local information offered by Math-Net Members. They similarly guide the contributions of Math-Net Services Providers.

Math Net Recommendations are intended to structure enhanced and emerging services or to test future standards. Math-Net Standards and Math-Net Recommendations are essential for the interoperability within Math-Net and the compatibility with other scientific information services. CEIC together with TAB and the Math-Net Member Associations organize a transparent and open discussion process about Math-Net Standards and Math-Net Recommendations and their development.

Math-Net Communication Platform

The Math-Net Communication Platform ensures the mutual interplay of the institutions participating in Math-Net. The contents of the Math-Net Communication Platform will be defined by CEIC. TAB together with the Math-Net Member Associations organize the Math-Net Communication Platform. Possible forms are, e.g., web servers and newsgroups, mailing lists, electronic newsletters, conferences, workshops, and meetings.