Université Joseph Fourier — C.N.R.S.
Cellule MathDoc - UMS 5638
BP 53 - 38041 Grenoble Cedex

COMITÉ de PILOTAGE

et d'ÉVALUATION

14 septembre 2001

Cellule de Coordination Documentaire Nationale pour les Mathématiques
UJF – CNRS

Cellule MathDoc – UMS 5638
Université Joseph Fourier
B.P. 53
38041 GRENOBLE Cedex 9
(France)

Fax : 04 76 63 56 11
accueil@mathdoc.ujf-grenoble.fr
www-mathdoc.ujf-grenoble.fr/

Université Joseph Fourier — C.N.R.S.
Cellule MathDoc - UMS 5638
BP 53 - 38041 Grenoble Cedex

www-mathdoc.ujf-grenoble.fr

SOMMAIRE

A. – INTRODUCTION

Le Comité de Pilotage et d'Évaluation 2001 est composé des membres du comité de pilotage et de deux experts Leif Andresen (Library Advisory Officer, Danish National Library Authority) et Jacques Ducloy (Responsable du Département Produits et Services de l'INIST, Conseiller au LORIA).

Pour faciliter le travail d'expertise de Leif Andresen, ce rapport a été en grande partie écrit en anglais.

Le chapitre «MathDoc Cell 1995 2001: an overview» présente les activités de la Cellule MathDoc, selon une double division en missions («tasks») et en unités de travail («work packages»), et fournit quelques perspectives pour l'avenir. Il est complété par des tableaux synthétiques.

Le chapitre «Detailed presentations of some work packages» contient des analyses plus complètes de certaines opérations (Catalogue Fusionné des Périodiques de Mathématiques CFPM, Accès-multibases MOPAC, projet EULER) ou développements logiciels (EDBM, LGD). Ces textes actualisent ceux figurant dans les rapports d'activité 1998 et 1999 (références CP1998 et CP1999). Ce chapitre contient également une présentation (en français et en anglais) du programme de NUMérisation de Documents Anciens Mathématiques (NUMDAM) qui a débuté en juillet 2000 et qui ne figurait donc pas dans les rapports antérieurs.

Les deux chapitres suivants présentent respectivement le Budget et la Chronologie des missions.

Je tiens à rendre hommage au travail et à la disponibilité de Thierry Bouche, Elizabeth Cherhal, Maud Fernandez, Claude Goutorbe, Laurent Guillopé, Monique Marchand, Estelle Nivault et Gérard Vinel, membres ou collaborateurs de la Cellule MathDoc.

Pierre Bérard
Directeur de la Cellule MathDoc
Juillet 2001

B. – MATHDOC CELL 1995 – 2001 : AN OVERVIEW

Pierre Bérard, July 2001

1. INTRODUCTION

Documentation is very important for all academic activities. It plays a central role in mathematics. The main reason is that mathematics is a cumulative science: a mathematical result remains valid forever, at least in principle, and it is quite frequent for mathematicians to use or work on several decade old documents.

The informal circulation of results (letters, preprints, emails, eprints) as well as their formal communication (peer reviewed journals, conferences) are a longstanding tradition. It is estimated that less than 1000 mathematical papers were published annually in the late 1870's while about 80 000 papers are published annually today, most of them available via the Internet on department servers, eprints databases and on-line journals[1]. In our digital era, databases play a growing role to make one's way into the fast growing literature.

Creating or maintaining facilities such as specialised libraries, journals (in both print and electronic forms), eprint servers and databases are therefore challenges of strategic importance for any scientific community that wants to play a role at the international level. This is especially true in mathematics.

The ambition of the MathDoc Cell today is to help the French mathematical community to answering these challenges, to have better access to the scientific information and to improve the visibility of its achievements on the web.

The purpose of this report is to give an overview of the MathDoc Cell in the past seven years (structure, activities) and to explain the reasons that motivated its creation and underlie its actions.

2. THE STRUCTURE

2.1. ORIGINS

The MathDoc Cell[2] was created for the period 1995–1998 in the framework of the contracts that are signed on a 4-year basis between the Ministry in charge of higher education and research, the CNRS[3] and the Université Joseph Fourier (UJF for short). It has been renewed for the duration of the 1999–2002 contract.

The MathDoc Cell (MDC for short) is a join unit UJF – CNRS, with national scope. The tasks assigned by the authorities – Research Division (Direction de la Recherche) of the Ministry in

[1] Archiving is of prime importance for mathematics. Although electronic communication is used very much, print journals still have a long life ahead of them. They are so far the safest means of archiving the mathematical patrimony.
[2] Cellule MathDoc (Cellule de Coordination Documentaire Nationale pour les Mathématiques), Unité Mixte de Service 5638 CNRS – Université Joseph Fourier.
[3] CNRS : Centre National de la Recherche Scientifique.

charge of higher education and research & Centre National de la Recherche Scientifique – were two fold:

- Coordinate and provide technical support to mathematics libraries and departments in order to improve access to and circulation of scientific information in the opening electronic era,
- Lead a Franco - German cooperation on Zentralblatt-MATH in the perspective of its transformation into a large European research infrastructure for mathematics.

The MathDoc Cell actually began its activities in late 1995, after the Université Joseph Fourier appointed two engineers and allocated office room to the MDC. The strong support of Professor Daniel Bloch, who was then Rector of the Université Joseph Fourier, should be acknowledged.

2.2. STAFF

Permanent staff

- Elizabeth Cherhal, engineer (IE), Université Joseph Fourier (November 1995 →)
- Claude Goutorbe, engineer (IR), Université Joseph Fourier (October 1995 →)
- Monique Marchand, assistant (TCE), CNRS (June 1996 →)
- X, engineer (IR), CNRS (November 2001 →)

Part time scientific staff

- Pierre Bérard, director, professor Université Joseph Fourier (October 1995→)
- Thierry Bouche, scientific collaborator, maître de conférences Université Joseph Fourier (October 2000 →)
- Laurent Guillopé, vice-director, professor Université de Nantes (October 1995 →)
- Gérard Vinel, scientific collaborator, PRAG Université Joseph Fourier (October 1999 →)

Part time temporary staff

- Maud Fernandez, Université Joseph Fourier (October 2000 → July 2001)
- Estelle Nivault, CNRS (February 2001 → July 2001)
- Trainees (students with computer science curricula: 1997, 1998, 1999)

2.3. FINANCIAL MEANS[4]

Research Division (Direction de la Recherche), ***Ministry in charge of higher education and research***

- Recurrent funding (within the 4-year contract)
- Funding of specific actions (ZM servers, SSS)

[4] The details are given in the budget section. The acronyms of MathDoc Cell work packages are described below.

CNRS

- Recurrent funding (within the 4-year contract)
- Funding for specific actions (NUMDAM)

European Contracts

- EULER (April 1998 – September 2000)
- LIMES (April 2000 – March 2004)

2.4. NEEDS AND PROBLEMS

- The activities of the MathDoc Cell have since 1995 increased both in number and in size. The MDC needs a new staff member to take care of the administration and follow-up of the services, contracts and collaborations. This is very important in order to make sure that we will find mathematicians willing to act as chairperson of the MDC while keeping their teaching or research activities.
- The Université Joseph Fourier has not yet solved the long-standing problem of the administrative situation of Elizabeth Cherhal and Claude Goutorbe. It is very important that this question be settled by the 2003 – 2006 contract.

Acknowledgements

The activities of the MDC rely entirely on the efficiency and commitment of its technical staff (Elizabeth Cherhal, Claude Goutorbe and Monique Marchand) and scientific collaborators (Thierry Bouche, Gérard Vinel). I would like to express my deep gratitude to them. Laurent Guillopé helped me to set up and develop the activities of the MathDoc Cell. His influence, his work, and his support have been decisive. I am very grateful to him.

The support of the Université Joseph Fourier, the Centre National de la Recherche Scientifique and the Direction de la Recherche is also gratefully acknowledged.

3. ACTIVITIES

The activities of the MathDoc Cell are divided into **tasks** and **work packages**.

3.1. TASKS

- *Documentation*:
  Improving access to documentation for the French mathematical community,
  Improving the visibility of French mathematics on the web,
  Support to mathematics libraries, departments and journals.

- *Cooperation with the Zentralblatt-MATH* database in the perspective of its transformation into a large European research infrastructure for mathematics under the auspices of the European Mathematical Society.

The tasks are described in Section **Activities, comments on the tasks** below. Some hints for the future are given in Section **Future**.

3.2. WORK PACKAGES

- Services offered to the mathematical community,
- Item of the cooperation with Zentralblatt-MATH,
- Software developments,
- Other items.

Work packages are described in Section **Activities, comments on the main work packages** below. They are summarised in the charts *MathDoc Cell work packages* and *MathDoc Cell work packages: chronological implementation.*

The interaction between the work packages and the tasks of the MathDoc Cell are summarized in the chart *MathDoc Cell: Tasks / Work packages*.

4. ACTIVITIES, COMMENTS ON THE TASKS

4.1. DOCUMENTATION

4.1.1. The general framework

As we mentioned earlier, documentation plays a central role in mathematics. The MathDoc Cell has developed actions in several directions, all of them aiming at improving access to information and improving the diffusion of the information.

4.1.2. Actions

The first actions of the MathDoc Cell were to **improve access** to on-line resources

- Catalogues of books or serials (see MOPAC, CFPM entries[5]),
- Tools such as the *Mathematics Subject Classification* scheme (see entry MSC),
- Databases: installation of site servers for the Zentralbatt–MATH database, including consortia agreements (see details in the next section),
- Current contents service (see entry SSS).

Actions were taken to **improve the visibility** of French mathematics, in particular on the web:

- Better coverage of French serials by the reviewing and abstracting journal Zentralblatt–MATH (see details in next section),
- Better visibility of mathematics preprints and theses or habilitations: grey literature indexes and collaboration with Math-Net.preprints/MPRESS (see entry GREY below),
- Support to academic publishing: SemProba database, Saint-Jean-de-Monts conference proceedings (see entries SemProba and JEDP below),

[5] Some entries are summarised below. All entries, together with their relationships with MathDoc Cell tasks are listed in the chart.

- Digitisation programme of French mathematics serials (see entry NUMDAM below).

Other actions include indirect support to mathematics libraries and departments through technical assistance and the organisation of training sessions and workshops.

4.2. COLLABORATION WITH THE ZENTRALBLATT–MATH DATABASE

4.2.1. The general framework

Mathematicians have soon been aware of the importance of databases.

The *Jahrbuch über die Fortschritte der Mathemati*k (JFM) was founded in 1868 by the mathematicians Carl Ohrtmann and Felix Müller. The authors described their intention in the preamble of the first issue:

"Das Ziel, das uns vorschwebte, war einerseits: Demjenigen, der nicht in der Lage ist, alle auf dem umfangreichen Gebiet der Mathematik vorkommenden Erscheinungen selbstständig zu verfolgen, ein Mittel zu geben, sich wenigstens einen allgemeinen Überblick über das Fortschreiten der Wissenschaft zu verschaffen: andrerseits: dem gelehrten Forscher seine Arbeit bei Auffindung des bereits Bekannten zu erleichtern."

(Our intention was on the one hand: To provide a tool for those who are not able to follow all publications on the comprehensive field of mathematics, and to gain a general overview about the development of the science. On the other hand: It should help the active scientist to find out known facts.)

The JFM appeared in 68 issues from 1868 to 1942 (some volumes contain publications of several years). More than 200.000 mathematical publications in this period were reviewed by the JFM.

The *Répertoire Bibliographique des Sciences Mathématiques* was founded by the Société mathématique de France in 1885 under the influence of Henri Poincaré who chaired the project. This endeavour has been active for about 27 years. Over fifty mathematicians scattered in 16 different countries participated in analysing and classifying over 20.000 papers between 1894 and 1912.

In 1931, Otto Neugebauer created a new reviewing journal, *Zentralblatt für Mathematik und ihre Grenzgebiete,* in order to answer for efficiency and quickness of reporting. He later had to flee to the United States to escape from the Nazi regime. In 1940 he created another reviewing journal, the *Mathematical Reviews,* for the American mathematical society.

In 1909, Henri Poincaré wrote *« Toute classification est une théorie déguisée, et ce n'est pourtant qu'en classant les faits qu'on pourra se mouvoir dans le dédale sans s'égarer. »*

(Any classification is a disguised theory. However, this is only by classifying facts that one will be able to move in the maze without losing one's way.)

The classifying efforts of the earlier reviewing journals were merged by the Mathematical Reviews and Zentralblatt für Mathematik in 1991 when they produced a join *Mathematics Classification Scheme* (MSC 1991; this scheme has been updated into MSC 2000, with slight modifications).

Mathematical reviews (MR) and Zentralbatt-MATH (ZM, as it is called today) are today the two main reviewing journals and databases for mathematics. They cover the literature exhaustively (including connected domains such as theoretical physics and theoretical computer science) and provide experts insight on current mathematics publications. Although other databases (INSPEC, PASCAL, etc.) include mathematics, none of them offers the range, depth and quality of indexation provided by MR and ZM.

In 1994, the Mathematical Reviews and Zentralblatt für Mathematik had discussions in an attempt to merge into a single database and hence share the heavy maintenance costs. These discussions failed. It then became clear that there was a risk that ZM might eventually disappear thus creating a de facto monopoly on mathematics databases.

In 1995, the French ministry in charge of higher education and research decided to support the idea of attempting to transform Zentralbatt für Mathematik into a large European research infrastructure for mathematics under the auspices of the European Mathematical Society. As a first step in this direction, it was decided to set up a Franco - German cooperation on Zentralblatt für Mathematik. The MathDoc Cell was then entrusted the task to lead this cooperation.

4.2.2. Earlier steps of the cooperation

In 1995, Zentralblatt für Mathematik suffered from quality defects, lack of visibility and from a poor electronic offer.

The first actions of the MathDoc Cell were to popularise the idea of the transformation of ZM into a European infrastructure, to improve its visibility (in particular among the French mathematicians) and to improve the electronic access to the database.

- A web search interface was made available by the end of 1995 and a demo access database was installed in Grenoble. A specific database manager was then developed (1st module: search and display).
- Site consortia were discussed with ZM officials allowing the installation of site servers thanks to a specific funding from the ministry (full access to the database given to a whole campus, access controlled by IP numbers, small departments offered much reduced subscription fees). In all 18 servers were installed providing access to 45 institutions.
- An electronic input system was designed in order to send bibliographical records directly from the journals to the ZM database thus reducing the maintenance costs and improving the coverage of the literature produced in France.

The technical input of the MathDoc Cell was made official in a contract between the Fachinformationszentrum FIZ–Karlsruhe and Université Joseph Fourier.

The main achievements of this earlier period, and we believe the MathDoc Cell played an important role for this purpose, have been the installation of the international mirror of the Zentralblatt-MATH database in Strasburg (September 1997) and the fact that the European Mathematical Society became the 4th partner of ZM in 1998, sharing the copyright with the three original partners (Akademie der Wissenschaften Heidelberg, Fachinformations-zentrum FIZ–Karlsruhe, Springer Verlag) and becoming a member of the Coordination Committee of Zentralblatt für Mathematik. On this occasion, the name Zentralblatt für Mathematik und ihre Grenzgebiete was changed to Zentralblatt–MATH. This choice was meant to point out the long standing tradition, the transformation into a European infrastructure and the importance given to the electronic access.

4.2.3. Present status of the cooperation

The MathDoc Cell is responsible for the development of the search and display software used by the (international, regional and local) mirrors of the ZM database. It takes part in the LIMES (Large Infrastructure in Mathematics – Enhanced Services) European project as a main contractor. The purpose of this project is to improve the quality of the database – technical and scientific aspects – and to set up distributed editorial offices thus sharing the costs at the European level and implementing the transformation into a European infrastructure.

The MathDoc Cell cooperates with French journals and publishers to improve the coverage of the literature produced in France and to electronically feed the ZM database with bibliographical records.

The MathDoc Cell takes part in the Coordination Committee of ZM and regularly proposes improvements of ZM.

In 2000, the MathDoc Cell installed a network of three national mirrors for French subscribers. They are meant to substitute the local site servers, to offer the advantages of the international mirrors (monthly updates of data, regular updates of the software) while preserving the flexibility of the local servers (administration of IP numbers, consortia agreements). For the future it is planed to add national functionalities such as links to RNBM[6] library resources.

4.2.4. The future of the cooperation

Efforts have been made towards improving the quality – both scientific and technical – of Zentralblatt–MATH and towards its transformation into a large European research infrastructure for mathematics. The LIMES European project is indeed an important step in both directions.

Our main concern however is that ZM officials (at the Coordinating Committee as well as at the Berlin editorial office) are reluctant

- to acknowledge the necessity of sharing the scientific responsibility,
- to implement the changes which are necessary in order to improve both the scientific and technical quality of the database.

[6] Réseau National des Bibliothèques de Mathématiques / National Network of Mathematics Libraries.

The MathDoc Cell continues to believe in the goals set up in 1995 (improve ZM in order to turn it into a strong competitor to the Mathematical Reviews, transform ZM into a European infrastructure for mathematical research). However, we feel that the whole enterprise will fail if the ZM officials do not enforce drastic changes in the production and administration of the database.

5. FUTURE

Three items in the MathDoc Cell activities described in the preceding section deserve special attention for the future.

- **NUMérisation de Documents Anciens Mathématiques (NUMDAM / Digitization programme of Ancient Mathematics Documents)**

The digitisation programme is at its very beginning. It is very ambitious and will hopefully be technically successful.

The main issues for the coming years are its successful visibility to the mathematical community worldwide, its continuation (extension to all French mathematics journals and to other important documents such as informal proceedings of famous 20th century seminars or books) and cooperation with other similar programmes.

- **GREY literature indexes**

The recently created CCSD, CNRS-UPS 2275 (Centre pour la communication scientifique directe – Centre for direct scientific communication) gives us a unique chance to be actors in the world of electronic communication by setting up a trans-disciplinary cooperation with the arXiv.org eprints repository.

The collaboration between MathDoc Cell and CCSD should lead to setting up a repository of theses (hopefully before the end of 2001) and later to setting up overlay preprint servers and journals.

- **Cooperation with Zentralblatt-MATH**

If one looks back at the state of the ZM database in 1995, we can consider that the cooperation has been quite successful. The survival of the ZM is however not yet guaranteed.

The main task for the coming years is probably not so much to help improve the ZM database – although this is absolutely necessary – but rather to make the persons responsible of its management realize that the only way out is to accept drastic changes.

6. ACTIVITIES, COMMENTS ON THE MAIN WORK PACKAGES

Acronym: **CFPM**
www-mathdoc.ujf-grenoble.fr/perio/per.html

Catalogue **F**usionné des **P**ériodiques de **M**athématiques
Join Catalogue of Mathematics Serials
Person in charge: *Elizabeth Cherhal*

TODAY*:* This service relies on an SQL database of about 8 000 mathematics serials. The DB contains a complete description of each journal, including identifiers (ISSN, CCN[7]), list of RNBM[8] libraries holding the title (if any) together with the state of the collection, URL, links to SSS[9] or other current contents services (e.g. article@inist). The CFPM database also includes information on free access electronic journals.

Participating libraries (21) send their serial catalogues on a regular basis for inclusion into the CFPM. In some instances these catalogues were corrected or completed and sent back to the libraries.

This service is freely available. It is linked (both ways) to SSS, the Current Contents Service.

The number of participating libraries, access logs, as well as messages sent to point out errors or new electronic journals prove that this service is used and very much appreciated both by librarians and by mathematicians.

EARLIER: This service was first set up in 1996. The first database then only contained ISSN journals and relied on perl programs. The SQL database and upload mechanism were implemented in 1999. The data for serials without an ISSN or electronic journals was completed in September 2000. Two trainees worked on this project.
The new version was released for public use in January 2001.

REFERENCE: Elizabeth Cherhal, *Combined Mathematical Journals Catalogue (CFPM) and journal table of content server (sSs)*, July 2001.
www-mathdoc.ujf-grenoble.fr/perio/
www-mathdoc.ujf-grenoble.fr/sSs

cf. **C.1**, page 34
cf. CP1998, § 2.2 page 15 & CP1999, § 2.2 page 15

[7] CCN : Catalogue Collectif National, a national catalogue of serials held by French libraries. Today this catalogue is part of the SU (Système Universitaire), see www.abes.fr/ for more information.
[8] Réseau National des Bibliothèques de Mathématiques / National Network of (French) Mathematics Libraries.
[9] Service de SommaireS / Current Contents Service. One of the services offered by the MathDoc Cell, see details below.

Acronym: **SSS**
www-mathdoc.ujf-grenoble.fr/sss.html

Service de **S**ommaire**S**
Current Contents Service
Person in charge: *Elizabeth Cherhal*

TODAY: The present service began in 1999 (beta version) and was confirmed in 2000. The database contains the table of contents of almost 900 serials (400 in the core of mathematics; others in connected fields including computer science). Data are provided on a weekly basis by Swets - Européridiques SA in the framework of a 3-year national consortium agreement (2000 – 2002). The cost of the 3-year subscription was covered in part by a specific grant from DR-MRT[10].

Access (available from the mathematician's desk) is free for all mathematics departments and controlled by IP numbers under the supervision of the MDC. An alert service informs mathematicians by email of new TOCs as they appear.

The data are hosted by the MDC and the software was provided by IMAG (Institut de Mathématiques Appliquées de Grenoble).

TOMORROW: The system presently uses perl programs and WAIS. The MDC plans to replace WAIS by EDBM in order to improve the indexation and hence the search and display capabilities and to re-design the interface.

REFERENCE: Elizabeth Cherhal, *Combined Mathematical Journals Catalogue (CFPM) and journal table of content server (sSs)*, July 2001.
www-mathdoc.ujf-grenoble.fr/Activites/sss.html

cf. CP1998, § 2.4, page 20 & CP1999 § 2.3, page 16

Acronym: **MOPAC**
www-mathdoc.ujf-grenoble.fr/bibs/ouvrages.html

Interrogation multi-bases des catalogues d'ouvrages
Access to distributed on-line catalogues of books
Person(s) in charge: *Elizabeth Cherhal* [in coll. with *Raymond Douet* – BJH, Orsay – starting mid 2001]

TODAY: Participating libraries (16) export their catalogues to a local wais (or wais/sfgate where available) database. A search mask on the MDC server allows users to search a subset of these catalogues in a transparent manner. This service is very much appreciated by the users (librarians and mathematicians).

[10] DR – MRT : Direction de la Recherche, Ministère de la Recherche et de la Technologie / Research Division – Ministry in charge of research and technology.

It is interesting to note that it frequently happens that a small library holds _the_ unique copy of a book.

This service is a very strong cohesion force for the RNBM.

The system suffers from network problems (overload as well as security) and from the fact that wais is no longer maintained/developed.

TOMORROW: Using the experience gained from the EULER[11] project, the MDC is collaborating with the RNBM to improve the present MOPAC service. The idea is to collect export files from library catalogues, to treat them on a central site (BJH-Orsay[12]), to use the EULER deduplication key to merge the catalogues into a unique database and to provide a search interface on the central site.

EARLIER: This service was first set up by the RNBM in the early 1990's using wais. In 1996, the MDC helped libraries to improve the service by installing wais/sfgate (i.e. wais with search fields).

REFERENCE: Elizabeth Cherhal,. *Math OPAC Project: One query to all math library catalogues*, July 2001.
http://www-mathdoc.ujf-grenoble.fr/Activites/index_ouvrages.html

cf. CP1999, § 2.4, page 16 ff

Acronym: **MSC 2000**
www-mathdoc.ujf-grenoble.fr/MSC2000/

Classification Mathématique par Matières, version 2000
Mathematics **S**ubject **C**lassification scheme **2000**
Person in charge: *Laurent Guillopé*

The MSC has been compiled since the seventies by the editorial offices of Mathematical Reviews and Zentralblatt – MATH. It is used for indexation purposes by these abstracting and reviewing services and by most mathematical journals. The MSC 2000 differs slightly from the preceding 1991 revision.

TODAY: The MSC 2000 is offered for searching and browsing on MDC server, together with information on the revisions that were made and links to the MSC 1991.

EARLIER: The MSC has been present on MDC server since 1996.

[11] European Libraries Electronic Resources in Mathematical Sciences, European project April 1998 – September 2000.
[12] BJH – Orsay : Bibliothèques Jacques Hadamard – Orsay. Its status is similar to that of MDC: a joint service unit CNRS – Université Paris Sud (Orsay) with national scope and tasks.

Acronym: **EULER**
www-mathdoc.ujf-grenoble.fr/euler/

EUropean **L**ibraries **E**lectronic **R**esources in Mathematical Sciences
Persons in charge: *Elizabeth Cherhal* and *Laurent Guillopé*

TODAY: The experience gained by participating in the EULER project has been very useful for other work packages (metadata / indexes of grey literature; deduplication key / MOPAC).

EARLIER: MDC participated as a main contractor to the EULER European project (April 1998 – September 2000).

REFERENCES:
Laurent Guillopé and Bernd Wegner, *The EULER projects: achievements and continuation*, European Mathematical Society Newsletter 38, December 2000.

Elizabeth Cherhal, *EULER Project Evaluation*, July 2001.
cf. **C.3**, page 43.

Acronym**: Z–MATH mirrors**
www-mathdoc.ujf-grenoble.fr/ZMATH/

Miroirs pour la base de données Zentralblatt – MATH
Mirrors for the **Z**entralblatt**–MATH** database
Person in charge: *Claude Goutorbe*

TODAY: A national network of 3-mirrors (Grenoble, Marseille, Orsay) has been installed in the second term of 2000. They benefit from the same monthly data updates and regular software updates as the international mirrors. The list of authorised IP numbers is managed by the MDC.

TOMORROW: It is scheduled to offer more services, for example links from the ZM database to resources in the libraries (through CFPM and MOPAC).

EARLIER: There were ZM 18 sites servers whose main drawback was to only have bi-annual updates (very often with delays) some of them are still running.

Acronym: **Z–MATH database**

Alimentation de la base de données **Z**entralblatt**–MATH**
Data input to the **Z-MATH database**
Person in charge: *Laurent Guillopé*

Bibliographical records from French journals are transmitted in electronic format to the ZM database. As of today, the journals concerned with this procedure are: Annales de l'Institut Fourier, all SMF (Société mathématique de France) publications – Bulletin et Mémoires, Astérisque, Revue d'Histoire, … – and SMAI (Société de mathématiques appliquées et industrielle) publications – ESAIM – Calculus of Variations, ESAIM – Probability and Statistics – as well as some books.

The purpose is both to reduce the costs of maintaining the ZM database and to improve the coverage of French literature (in speed and range). Some publishers also send their books for review. This action is limited by the manpower that is available at the MDC. It would indeed be desirable to install a (distributed) editorial office of the ZM database in France (provided a clear policy on distributed units is established by the ZM and provided one can find enough manpower to ensure stability).

cf. CP1998 § 3.3, page 27

Acronym: **Z–MATH R&D**

Recherche **& D**éveloppement pour la base de données **Z**entralblatt**–MATH**
Research and Development for the Zentralblatt–MATH database
Person in charge: *Claude Goutorbe*

The MDC is in charge of developing and maintaining the search and display software used by the mirrors of the ZM database (12 international mirrors as well as regional and local mirrors).

The MDC has also produced specific software to make incremental updates so that updating the mirrors via the Internet becomes an easy task.

Finally, the MDC is developing a new indexer to improve the indexation of the database and hence the search and display capabilities.

The MDC believes that these developments have been very important when it was urgent to upgrade the ZM database. More could have been done in this direction if the ZM editorial office were not so reluctant to changes.

see entry EDBM for more details (**C.5**, p.47)
cf. CP1999 § 3.1, page 26 & § 3.2, page 27

Acronym: **LIMES**
www-mathdoc.ujf-grenoble.fr/LIMES/

Large **I**nfrastructure in **M**athematics – **E**nhanced **S**ervices
Persons in charge: *Pierre Bérard* and *Laurent Guillopé*

TODAY: The purpose of this European project (April 2000 – March 2004) is to improve the Zentralblatt–MATH database (scientific and technical quality of the database, coverage, technical quality of the input and managing system).
This project in important from the political point of view as it is the first positive response from the European Union to the EMS[13] proposal of transforming the Zentralblatt–MATH database into a large European research infrastructure for mathematics.

The project is also important to improve the quality of the ZM database.

[13] EMS/SME : Euroepan Mathematical Society / Société Mathématique Européenne.

TOMORROW: The goal is to turn the ZM database into a European infrastructure with costs, means and responsibilities shared at the European level and with recurrent EU funding. The MathDoc Cell still believes this is the only way to avoid a de facto American monopoly on mathematics databases but its faith has been weakened by the reluctance of the ZM editorial office to changes and to sharing the responsibility.

REFERENCE:
See www-mathdoc.ujf-grenoble.fr/LIMES/

Acronym: **NUMDAM**
www-mathdoc.ujf-grenoble.fr/NUMDAM/

Programme de **NUM**érisation de **D**ocuments **A**nciens **M**athématiques
Digitisation programme of Ancient Mathematics Documents
Person in charge: *Thierry Bouche*

TODAY: The purpose of this programme is to take part in the international efforts to make ancient documents available electronically. This is particularly important in a field like mathematics in which using decade old documents is very frequent. This programme is lead by the MathDoc Cell on behalf of CNRS and strongly supported by DR–MRT.

The first phase of the programme began in July 2000 and is concerned with five serials: Annales de l'Institut Fourier, Annales scientifiques de l'École normale supérieure[14], Bulletin de la Société mathématique de France, Mémoires de la Société mathématique de France, Publications mathématiques de l'institut des Hautes études scientifiques et Journées des équations aux dérivées partielles (proceedings of the conferences held in Saint–Jean–de–Monts). The collections have been carefully examined in order to prepare the technical work, a schedule of conditions has been written with the assistance of a specialised consultant. A group of trainees from ENSSIB[15] made interviews among users (mathematicians and librarians), journal publishers and institutions to establish a first schedule of conditions for the service that will host the digitised documents.

An invitation to tender has been issued by CNRS in June 2001. The choice of an operator will hopefully be made in September 2001 and the work begin before the end of 2001.

TOMORROW: The first objective is to make the digitised collections as easily available as possible (both in terms of access fee – free access to full metadata and small fee, if any, on the access service to full documents – and of visibility). For this purpose, national (INIST, BnF[16]) as well as international (JSTOR[17], Cornell University, DIEPER) collaborations will be looked for. A second objective is to strongly link the digitised collections with the electronic versions of the respective journals. A third objective is to continue the programme and to treat other French mathematics journals as well as important other documents (e.g. the Séminaires Cartan, etc.).

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[14] The inclusion of this journal is subject to the agreement of the publisher.
[15] ENSSIB : École Nationale Supérieure des Sciences de l'Information et des Bibliothèques.
[16] INIST : Institut National de l'Information Scientifique et Technique; BnF: Bibliothèque nationale de France.
[17] JSTOR : Journal STOrage, see www.jstor.org); DIEPER, see gdz.sub.uni-goettingen.de/dieper/

REFERENCE: Thierry Bouche, NUMDAM, NUMérisation de Documents Anciens Mathématiques, Proceedings *"Journée d'études organisée par le laboratoire Reconnaissance de Formes et Vision de l'INSA dans le cadre de L' Institut des Sciences du Document Numérique Rhône-Alpes - I.S.D.N., 25 juin 2001, Lyon.*
cf. **C.4**, page 44.

Acronym: **GREY**
www-mathdoc.ujf-grenoble.fr/prepub.html

Index nationaux de littérature grise: prépublications, thèses et habilitations
National indexes of **grey** literature: prepublications, theses and habilitations
Person in charge: *Elizabeth Cherhal*

TODAY: Metadata based on Dublin Core are collected on servers of participating mathematics departments. These metadata are merged into two different indexes, one for prepublications and one for theses and habilitations. They are also merged into the international Math-Net.preprints/MPRESS index that contains metadata from preprint servers in Austria, Brazil, Canada, France, Germany, Italy, etc. Individuals can also declare a preprint or a thesis in the indexes if the laboratory they work in does not yet participate in the project.

The distributed architecture underlying the grey literature indexes is rather easy to install. It also presents several drawbacks: data do not always comply with the scheme that was decided upon at the beginning of the project, preprint servers do not always reply either because they are down or due to network problems. Home pages of individuals who declared a preprint or a thesis tend to disappear as time passes.

TOMORROW: The MDC began a collaboration with CCSD[18] in 2001. The first step will be to make a thesis server where individuals or laboratories could deposit theses. The eprints will permanently be available and metadata will be extracted and included in the grey literature indexes as well as in the MPRESS index. As a second step, we schedule cooperation on preprints. The CCSD is constructing a (symmetric) mirror of the arXiv.org database. These mirrors will offer the possibility of making overlay preprint servers and journals and we plan to induce mathematics preprint servers and journals to participate.

REFERENCE: *cf.* www-mathdoc.ujf-grenoble.fr/Activites/index_indexnat.html
cf. CP1999 § 2.5, page 18 ff

Acronym: **MPRESS mirror**
www-mathdoc.ujf-grenoble.fr/MPRESS/

Miroir de l'index international Math-Net.Preprints/MPRESS
Mirror for the Math-Net.preprints/**MPRESS** index
Person in charge: *Elizabeth Cherhal*

[18] Centre de Communication Scientifique Directe, CNRS - UPS2275
Centre for Direct Scientific Communication, see http://ccsd.cnrs.fr/

The MDC server hosts a mirror of the Math-Net.preprints/MPRESS international index whose master is in Osnabrück (Germany). There is collaboration between MDC and the Osnabrück team.

cf. CP1999 § 2.5, page 18 ff

Acronym: **CCSD**
ccsd.cnrs.fr/

The MathDoc Cell has been collaborating with the CCSD (**C**entre pour la **C**ommunication **S**cientifique **D**irecte – Centre for Direct Scientific Communication, CNRS-UPS 2275, director Franck Laloë) since it was created in July 2000.

REFERENCE:
Franck Laloë, *Une nouvelle unité de service au CNRS : le CCSD, Centre pour la Communication Scientifique Directe*, Lettre SPM n° 36, Février 2001.

Acronym: **Math-Net IMU**
www.math-net.de/

The MathDoc Cell takes part in the Math-Net endeavour. Math-Net is a project of the International Mathematical Union, lead by Martin Grötschel. Math-Net aims at making mathematical resources available on the Internet: preprints, lecture notes, directories of mathematicians, descriptions of curricula, etc. (see also the MPRESS entry).

Acronym: **EDBM**
www-mathdoc.ujf-grenoble.fr/Activites/index_edbm.html

European **D**ata**B**ase **M**anager
Person in charge: *Claude Goutorbe*

EDBM is a by-product of the Franco – German cooperation on the Zentralblatt-MATH database. EDBM was originally designed for the web access to the ZM database. EDBM was later on modified as a generic database manager. The Zentralblatt-Math, Jahrbuch, Didaktik der Mathematik and SemProba databases currently use it. An indexer component is being developed (v. 1 already available) in the framework of the LIMES project. Other applications of EDBM are possible (MOPAC, SSS, GREY, see these entries).

REFERENCE:
Laurent Guillopé and Claude Goutorbe, *EDBM 1996 – 2001*, June 2001.
cf. **C.5**, page 47.
cf. CP1999, § 3.1, page 26

Acronym: **LGD**
www-mathdoc.ujf-grenoble.fr/lgd/lgd.html

Logiciel de **G**estion **D**ocumentaire
Documentary Management Software
Person in charge: *Claude Goutorbe*

The LGD has originally been developed as a model. The idea was to give mathematics libraries the possibility to test the schedule of conditions they would need to write in order to upgrade their current library software. The LGD is available since mid-2000 and was demonstrated to interested librarians and engineers between November 2000 and February 2001.

The LGD is based on free software (MySQL and GTK) and has so far been installed on Linux machines. A documentation has been written to help librarians use it but no installation software is available yet.
The LGD has been installed as an emergency (temporary) solution in replacement of Texto in libraries where the computer hosting Texto crashed (Institut Fourier, March 2000; Montpellier, Fall 2001).

Many commercial library softwares are available. It seems that most of them are either too expensive or not quite satisfactory for libraries of intermediate size. These softwares also frequently require specialised manpower to be adequately tuned. To develop a solution based on free software, with code sources available, still seems desirable.

The MDC does not have enough manpower to be able to provide user support as a commercial company should. The LGD will therefore, at least for the time being, remain a model and not become functional software to be installed on demand.

The MDC will however continue to develop the LGD for its own purposes (for instance as a management tool for the NUMDAM database of digitised articles). The MathDoc Cell is open to cooperating with libraries wanting to use the LGD as library software and to improve it on local manpower.

REFERENCES:

- Cellule MathDoc, *Le point sur le logiciel de gestion documentaire (LGD)*, 06 mars 2001. *cf.* CP1999, § 2.6, page 20 ff
- Gérard Vinel, *Aide à l'utilisation du LGD*, mars 2000. *cf.* www-mathdoc.ujf-grenoble.fr/lgd/lgd.html
- Laurent Guillopé, *A library management system*, July 2001. *cf.* **C.6**, page 53.

Acronym: **Server**
www-mathdoc.ujf-grenoble.fr/

Serveur d'informations de la Cellule MathDoc
Information **server** of the MathDoc Cell
Person in charge: *Elizabeth Cherhal*

This server provides access to the services offered by the MDC (CFPM, SSS, MOPAC, MSC 2000, Z-MATH mirrors, NUMDAM, GREY, MPRESS mirror), as well as information and links which are useful to mathematicians or to librarians (directories of mathematics institutions, etc.). A mirror of the server is available at the Université de Nantes.

www-mathdoc.ujf-grenoble.fr/
www-mathdoc.math.sciences.univ-nantes.fr/

Acronym: **CIMPA** web pages
www-mathdoc.ujf-grenoble.fr/CIMPA/

Pages du CIMPA (**C**entre **I**nternational de **M**athématiques **P**ures et **A**ppliquées)
ICPAM web pages (International Centre for Pure and Applied Mathematics)
Person in charge: *Monique Marchand*

MDC offers its technical help to CIMPA/ICPAM by hosting their web pages. This institution in charge of promoting mathematics in developing countries is supported by the French ministries in charge of higher education, research, foreign affairs and development and by UNESCO.

Acronym: **SemProba**
www-mathdoc.ujf-grenoble.fr/Activites/index_SemProba.html

Base de données du **Sé**minaire de **Proba**bility de Strasbourg
Database of the Probability Seminar, Strasburg
Person in charge: *Laurent Guillopé*

The Probability Seminar exists since 1967. Many important contributions to probability theory were announced or published in the annual proceedings. Colleagues in Strasburg decided to make a database available by adding to the table of contents comments and indexation. This important editorial work was supported by the MDC, which provided technical help including the search and display. The system is based on EDBM (see this entry).

REFERENCE:
Laurent GUILLOPÉ, *Statique et dynamique de documents mathématiques*
(Actes Congrès GUT'99, Cahiers GUTenberg, 32 (29-34), 1999.
cf. www.gutenberg.eu.org/pub/GUTenberg/publicationsPDF/32-guillope.pdf

cf. CP1999, § 2.7, page 22 ff

Acronym: **JEDP**
www.math.sciences.univ-nantes.fr/~sjm/

Actes des congrès Journées équations aux dérivées partielles.
Proceedings of conferences on Partial differential equations.
Person in charge: *Laurent Guillopé*
The MDC as provided technical advice and help to make an electronic version of these proceedings available since 1998.The conferences have been held for 25 years, mainly in Saint-Jean-de-Monts, with support from CNRS (GDR 1151 "ÉDP"). The old issues of the proceedings will be digitised in the first phase of the NUMDAM programme.

REFERENCE:
cf. CP1999, § 2.8, page 24 ff

Acronym: **RNBM**
www.biblio.math.jussieu.fr/reseau.html

One of the institutions MDC collaborates with: **R**éseau **N**ational des **B**ibliothèques de **M**athématiques – National Network of (French) Mathematics Libraries (chaired by *Geneviève Sureau* and *Bernard Teissier*).

Acronym: **CONSORTIA**

Several consortia were managed by the MDC:

- National consortium agreement with Zentralblatt-MATH database: 15% discount on public subscription fees, 5-year agreement with fees freezed at 1999 level, local agreements for smaller institution to be aggregated to a larger one at very reduced rates (usually 10% of the normal subscription rate),
- National 3-year agreement with Swets – Europériodiques SA for SSS, the Current Contents Service. Data are downloaded weekly from the Swets server and made freely available to the French mathematics community (access controlled by IP numbers under the responsibility of the MathDoc Cell). The access fee was paid in part on funds made available to the MDC by DR – MRT.

The MathDoc Cell also collaborates with the RNBM to set up consortia agreements with publishers to provide access to electronic journals.

Acronym: **ADMIN**

Administration and Gestion Management
Person in charge: *Monique Marchand*

The activities of the MathDoc Cell would not be possible without this important (yet not visible from the outside) work package.

7. CHARTS

7.1. MATHDOC CELL WORK PACKAGES : SUMMARY CHART

Acronym	Full name	Person(s) in charge of the wp	Details
CFPM	Catalogue Fusionné des Périodiques de Mathématiques Join Catalogue of Mathematics Serials	Elizabeth Cherhal	This catalogue comprises over 8 000 journals, including free access electronic journals, and provides localisation in mathematics libraries in France, links to SSS and other current contents services, as well as links to journal web pages if any. www-mathdoc.ujf-grenoble.fr/perio/per.html Free access
SSS	Service de SommaireS Current Contents Service	Elizabeth Cherhal	This service provides the contents of about 900 journals (400 in the core of mathematics and 500 in connected fields). Data are downloaded on a weekly basis from the Swets server (3-year consortium agreement). www-mathdoc.ujf-grenoble.fr/sSs.html Access is free of charge for mathematics departments and controlled by IP numbers.
MOPAC	Accès multi-bases aux catalogues ouvrages des bibliothèques de mathématiques → Moteur de catalogue ou catalogue fusionné des ouvrages Mathematics On-line Public Access Catalog	Elizabeth Cherhal [coll. With Raymond Douet – Orsay – from mid 2001 on]	The purpose of this service is to provide a transparent access to catalogues in mathematics libraries (books). Service under re-construction. www-mathdoc.ujf-grenoble.fr/bibs/ouvrages.html Free access
MSC2000	Classification mathématique par sujets Mathematics Subject Classification (MSC2000)	Laurent Guillopé	The MSC has been established by the editorial offices of Mathematical Reviews (Ann-Arbor, USA) and Zentralblatt-MATH (Berlin, Germany). It is used by these databases and by mathematics journals for indexation purposes. The MathDoc Cell server provides a search interface for the MSC. www-mathdoc.ujf-grenoble.fr/MSC2000/ Free access
EULER	European Libraries and Electronic Resources in Mathematical Sciences	Elizabeth Cherhal	MDC participated in this European Project (April 1998 – September 2000) as a principal contractor. The purpose of this project was to make a search engine for distributed heterogeneous resources on the web. A beta engine has been produced. www-mathdoc.ujf-grenoble.fr/euler/

Acronym	Full name	Person(s) in charge of the wp	Details
Z-MATH mirrors	Réseau de 3 miroirs nationaux pour accès à la base de données Zentralblatt-MATH Network of 3 national mirrors to access the Zentralblatt-MATH database	Claude Goutorbe	These mirrors provide improved access to the database for French institutions. www-mathdoc.ujf-grenoble.fr/ZMATH/ Access restricted to registered users (French consortium of Zentralblatt-MATH users)
Z-MATH database	Transmission automatique du signalement des articles de certaines revues françaises dans Zentralblatt-MATH Automatic transmission to the Zentralblatt MATH database of bibliographical data for papers published in some French mathematics journals	Laurent Guillopé	The purpose is to improve the coverage of the mathematical literature published in France, as well as to share the costs of maintaining the ZM database.
Z-MATH R&D	Développements logiciels pour la base de données Zentralblatt-MATH Software developments for the Zentralblatt-MATH database	Claude Goutorbe	The purpose is to improve the software used by Zentralblatt-MATH : search and display software, software for updating the databases in the mirror sites (about 50 worldwide), indexation software. This software is freely available for subscribers to Zentralblatt-MATH (about 80 local servers worldwide). See EDBM entry below.
LIMES	Large Infrastructure in Mathematics – Enhanced Services	Pierre Bérard	MDC participates in this European project (April 2000 – March 2004) as a principal contractor. The purpose of the project is to improve the quality of the Zentralblatt-MATH database. See EDBM entry below. www-mathdoc.ujf-grenoble.fr/LIMES/
NUMDAM	NUMérisation de Documents Anciens Mathématiques Digitisation of Ancient Mathematics Documents	Thierry Bouche	The MDC is in charge of leading an ambitious digitisation programme supported by the French authorities in charge of research and higher education (Direction de la Recherche, Ministère de la Recherche et de la Technologie, et Centre National de la Recherche Scientifique. www-mathdoc.ujf-grenoble.fr/NUMDAM/
GREY	Index nationaux de littérature grise en mathématiques Grey literature indexes	Elizabeth Cherhal	The purpose of these indexes is to improve the visibility of the grey literature available on-line in the mathematics institutions (eprints, theses). Meta data are collected on participating sites and made available on the MDC server. These indexes participate in Math-Net.preprints/MPRESS (see MPRESS entry). www-mathdoc.ujf-grenoble.fr/prepub.html
MPRESS mirror	Miroir de l'index Math-Net.preprints/MPRESS Mirror of the Math-Net.preprints/MPRESS index	Elizabeth Cherhal	The MDC hosts the mirror of the Math-Net.preprints/MPRESS index. www-mathdoc.ujf-grenoble.fr/MPRESS/

Acronym	Full name	Person(s) in charge of the wp	Details
CCSD	Centre de Communication Scientifique Directe Center for Direct Scientific Communication	Pierre Bérard	The MDC collaborates with CCSD (CNRS, UPS 2275) to set up a theses and preprints servers. ccsd.cnrs.fr/
Math-Net IMU	Math-Net Union Mathématique Internationale Math-Net International Mathematical Union	Pierre Bérard	The MDC takes part in the Math-Net endeavour that has been launched two years ago by the International Mathematical Union. The purpose is to make mathematical resources freely available worldwide (directories, lecture notes, eprints, theses, etc). http://www.math-net.org/
EDBM	European DataBase Manager	Claude Goutorbe	The MDC develops this software both for its internal needs and in the framework of the cooperation with Zentralblatt-MATH (in particular within the LIMES project). EDBM is used for instance by the databases Zentralbatt-MATH and Jahrbuch. Several components have already been developed: EDBM/W3 (search and display), EDBM/updates (updating databases), EDBM/indexer. The EDBM/W3 component is freely available to Zentralblatt-MATH subscribers. www-mathdoc.ujf-grenoble.fr/MATH/edbmw3-fr.html
LGD	Logiciel de Gestion Documentaire Software for Library Management	Claude Goutorbe Gérard Vinel (interface with the Institut Fourier library)	The development of this software has originally been undertaken as a model to help libraries renew their documentary software. Three modules have been developed (cataloguing, user management, loan). The MDC continues the development for its own purposes (in particular as a database manager for the NUMDAM programme). www-mathdoc.ujf-grenoble.fr/lgd/lgd.html
Information Server	www-mathdoc.ujf-grenoble.fr/	Elizabeth Cherhal	The information server of the MathDoc Cell hosts the various services which are currently available, as well as directories (mathematics institutions in France) and other information of general interest.
CIMPA web pages	www-mathdoc.ujf-grenoble.fr/CIMPA	Monique Marchand	The MDC hosts and maintains the web pages of CIMPA/ICPAM (Centre International de Mathématiques Pures et Appliquées / International Centre for Pure and Applied Mathematics) supported by the French authorities in charge of higher education and by UNESCO. www-mathdoc.ujf-grenoble.fr/CIMPA/

Acronym	Full name	Person(s) in charge of the wp	Details
SemProba	Séminaire de Probabilités de Strasbourg Probability Seminar Strasburg	Laurent Guillopé	The Probability Seminar publishes annual proceedings since 1967. The MDC provided the search and display interface (based on EDBM) as well as technical assistance to the colleagues who make the SemProba database. This service is freely available at www-irma.u-strasbg.fr/irma/semproba/index.shtml
JEDP	Actes des Journées équations aux dérivées partielles de Saint-Jean-de-Monts Proceedings Saint-Jean-de-Monts	Laurent Guillopé	The proceedings of the annual Partial differential Equation congress held in Saint-Jean-de-Monts are electronically available since 1999. The MDC provided technical advice and assistance for the on-line publication of these proceedings (the corresponding collection is part of the documents to be digitalised in the first phase of the NUMDAM programme). www.math.sciences.univ-nantes.fr/edpa/
Assistance to RNBM Training librarians		Elizabeth Cherhal	The MDC has regularly assisted mathematics libraries : installing opacs, installing or configuring software (WAIS, WAIS/SFGATE, Texto), installing LGD. The MDC also participates in training sessions for librarians (web and catalogues, electronic documentation).
Consortia		Pierre Bérard	The MDC has set up national consortia on behalf of the mathematical community (3-year consortium with Swets for SSS, the current contents service; 5-year consortium with Zentralblatt-MATH providing a general 15% discount on public subscription fees, freezing subscription fees for the period 2000–2004 at the 1999 level; local arrangements for small departments). The MDC also collaborates with RNBM to set up consortia providing national access to commercial electronic journals.
ADMIN		Monique Marchand	This transversal work package makes activities of the MathDoc Cell possible. It involves management (finances and budget, staff travel, organisation of meetings and workshops, European contract management, management of trainees), reporting on the activities of the MDC as well as maintaining pages of the web server.

7.2. MATHDOC CELL : TASKS / WORK PACKAGES

MathDoc Cell Tasks →	Improving access to information	Improving diffusion of French mathematics	National coordination in collaboration with RNBM	Technical support to mathematics libraries, departments or journals	Cooperation with Z-MATH database	R&D	Contracts Consortia EU projects	Collaborations
Work packages ↓								
CFPM	X		X			X		X
SSS	X						X	
MOPAC	X		X	X		X		X
MSC browser	X							
EULER	X			X		X		X
Z-MATH mirrors	X		X		X		X	X
Z-MATH database		X		X	X	X		X
Z-MATH R&D	X				X	X	X	
LIMES					X	X	X	X
NUMDAM	X	X						
GREY	X	X	X			X		X
MPRESS mirror	X	X				X		X
CCSD	X	X				X		X
Math-Net IMU	X	X						X
EDBM					X	X	X	X
LGD			X	X		X		X
Information Server	X	X			X			
CIMPA web pages	X	X		X				X
SemProba	X	X		X		X		X
JEDP	X	X		X		X		X
Assistance to RNBM training librarians				X				X
Consortia	X		X		X		X	X
ADMIN	X	X	X	X	X	X	X	X

7.3. MATHDOC CELL WORK PACKAGES : CHRONOLOGICAL IMPLEMENTATION

MathDoc Cell	**1995**	**1996**		**1997**		**1998**		**1999**		**2000**		**2001**		**2002**	
	2nd term	1st term	2nd term	1st term	2nd term	1st term	2nd term	1st term	2nd term	1st term	2nd term	1st term	2nd term	1st term	2nd term
Work packages	**Improving access to information**														
CFPM		<Prototype>		<CFPM v. 1, 16 libraries + INIST>						<CFPM v. 2, 21 libraries + INIST>					
SSS								<Prototype>		<SSS v. 1, 3-year consortium>					
MOPAC	<wais access>	<installation of wais/sfgate & new search interface : 17 opacs available>												<New system scheduled>	
MSC browser		<MSC 1991 available on-line>								<MSC 2000 available on-line + MSC 1991 vs MSC 2000>					
EULER							<April 1998 – September 2000> <EULER engine beta v . + deduplication key>								
	Collaboration with Zentralblatt–MATH database														
Z-MATH mirrors		<Grenoble ZM demo access>													
		<Site servers : 18 in France thanks to 1997 special funding from ministry>								<network of 3-national mirrors installed : Grenoble, Marseille, Orsay>					
					<Strasburg international mirror>										
Z-MATH database			<Annales Institut Fourier bibliographical records to ZM database>												
						<SMF – Astérisque, Bulletin, Mémoires – bibliographical records to ZM database>										
										<SMAI – EDPSciences ESAIM series bib. Records to ZM db>					
Z-MATH R&D						<R&D contract MDC–FIZ, 04/98–12/99>									
	<zb/w3 interface>														
			<zb/w3 search/display software>			<edbm software : search/display, updates, indexer>									
											<MSC browser>				
LIMES										<LIMES April 2000 – March 2004>					

MathDoc Cell	1995	1996		1997		1998		1999		2000		2001		2002	
	2nd term	1st term	2nd term	1st term	2nd term	1st term	2nd term	1st term	2nd term	1st term	2nd term	1st term	2nd term	1st term	2nd term
Improving visibility of French mathematics on the web															
NUMDAM											<NUMDAM programme phase I>				
GREY		<lists of preprint servers w. links>				<grey literature indexes : prepublications & theses – habilitations + coll. with MPRESS>									
MPRESS mirror															
CCSD											<active collaboration> <theses repository to be installed before end 2001>				
Math-Net IMU								< collaboration with Mat-Net and in particular Osnabr¨cuk team>							
Software developments															
EDBM							<edbm v. 1, search/display, updates>			<edbm v. 1, improved functionalities, indexer>					
LGD					<Feasibility study>										
								<Schedule of conditions, functional model> <presentations>				<Developments for internal puposes>			
										<Emergency installation at Institut Fourier to substitute existing sofware no longer available>					
Other actions : information server, support to mathematics libraries and departments															
Infor. Server		<v. 1>				<v. 2>								<v. 3>	
		<Nantes mirror>													
CIMPA web pages															
SemProba			<Developments for SemProba : prototype, v. 0, v. 1, installation in Strasburg>					<slight upgrades, assistance>							
JEDP						<Help to electronic edition>									
Assistance and Training for RNBM libraries and math. dpts.		<Assistance, training sessions> <Workshops on preprint servers, library software, …>													
		<Restricted area for librarians on MDC server>													
		<Restricted access discussion list for librarians>													
Consortium ZM			<15% discount on public price subscriptions to ZM database, local consortia>												
Consortium ZM								<5-year agreement for 2000–2004 : local consortia and subscirption fees freezed at 1999 level>							
Consortium SSS								<beta agreement>		<3-year national consortium for mathematics>					
ADMIN															

C. – DETAILED PRESENTATION OF SOME MATHDOC CELL WORK PACKAGES

1. Acronym: CFPM

Combined Mathematical Journals Catalogue (CFPM[19]) and journal table of content server (sSs[20])
Elizabeth Cherhal, July 2001

Aims and Purpose of CFPM

The aim of this document is to explain the history, the technical working and the future perspectives for the "catalogue fusionné des périodiques de mathématiques" (combined mathematical journals catalogue.
Started in 1997, with "home made" programs, the application allows the user, in one query, to get, for a given journal, its bibliographical data, library holdings, and links to different services concerning it (table of contents servers, such as sSs, article@inist) or directly to the contents on the editors site. It is very much appreciated by users and offers important service to the community.

Technical working

The CFPM is not a distributed application, like EULER or the present version of MOPAC. It is built in a centralised fashion on MathDoc Cell server out of files (exported copies or extracts of catalogues) sent every now and then by the participating libraries.

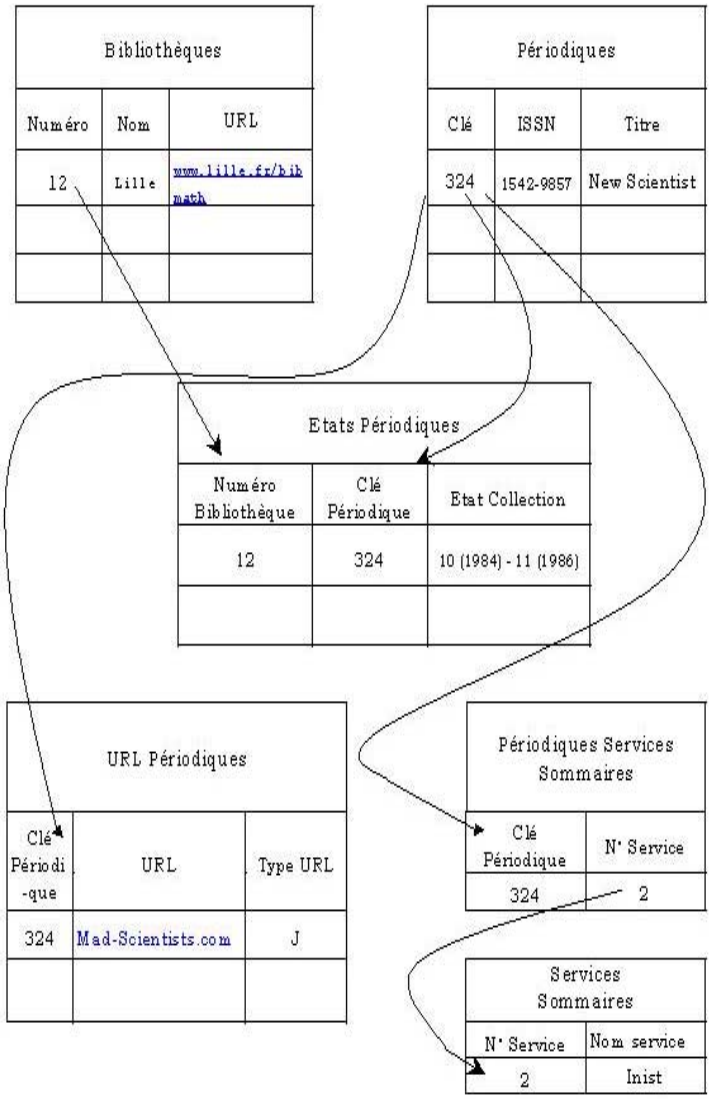
- MathDoc Cell made a journal database, by downloading, in agreement with the ISSN centre, the bibliographical records concerning the journals contained in the mathematical libraries catalogues. New records are downloaded from the ISSN database every now and then (if necessary every time a library sends an update of its catalogue).

- Every library sends a file (or an URL to download) to MathDoc cell made up of an exported copy of their own catalogue. MathDoc does not impose any particular file format, provided the data be structured in some way. The only mandatory fields used are:
    - *Title, ISSN, holdings information (the ISSN number is necessary for automatic processing)*
    - *If the catalogue has a specific "missing numbers" field, this is also useful.*

- The files are read by a programme and data is put into a homogenous form for processing.
- The database can be queried via the web, by a cgi programme.

[19] www-mathdoc.ujf-grenoble.fr/perio/
[20] www-mathdoc.ujf-grenoble.fr/sSs

As the application was getting more and more complicated, we decided, in June 1999, to re-conceive the database, using a proper relational database (MySql) comprising different tables: (journals, libraries, holdings, URLs, etc…).
The database scheme is as follows.



The aim of this change is to facilitate updating, to simplify the application, and to enable integration of journals which are not in the ISSN database (old or rare journals, or on the contrary, new or purely electronic ones).
For the libraries, nothing changes. They must still give a copy of their holdings information to MathDoc Cell.

Problems and Solutions: (problem - *explanation)*

The following problems can sometimes appear when querying the CFPM database:

- **The journal is not in the database**:
  - *Sometimes, a journal is not yet in the database because its record has not yet been downloaded from ISSN.*
  - *Sometimes, a journal exists, and has a ISSN number, but it is not yet recorded in the ISSN database.*

- **A Journal is in the database, but a library which does have the journal does not show up.**
  - *The holdings information is loaded into the database via a programme, which reads the file the library transmitted to MathDoc, if the file contains an error (for instance the ISSN number is badly input), the holdings information for that journal will not be updated.*

The first problem's solution depends on MathDoc, New records can be easily down/uploaded to the database, even manually if necessary. The last problem is still incumbent to the libraries: they must check they transfer correct data.

New possibilities of the latest version of CFPM

Inclusion of journals with no ISSN number

The old version of CFPM used ISSN numbers as unique keys. CFPM has its own key, and therefore journals from different sources can be added.

In the case of an old journal, the corresponding record is down/uploaded from the CCN (myriade) database, and the CCN unique number is used as a way of identifying it instead of the ISSN number.

In the case of a new, or purely electronic, journal, a temporary record is added to the database, which is replaced when the ISSN record becomes available.

Personalised services for libraries

Libraries can now get their data back enhanced with information extracted from the CFPM database, sometimes, they like to put this information on their own websites without having to do unnecessary data input, for instance they can get:

- All records from library X with all possible associated URLs.
- List of journals with URLS consultable free of charge by mathematical libraries
- More complete bibliographical records about their journals (all possible fields filled)
- etc…

Conclusion

The CFPM is a service much appreciated by mathematicians and librarians. The MySql database structure, and all the associated programs (usually written in perl) have proved so well adapted to needs, that a similar model is currently being elaborated to deal with the books catalogs also. But we must stress the fact that the system works well thanks to regular updates from libraries, without which there would be less awareness of new journals, and also incorrect holdings information.

Journal Table of Contents server (sSs)

Aims and purpose of sSs

Linked to the CFPM via its web cgi program, MathDoc Cell's journal table of contents server (sSs) is also a very useful service for mathematicians. Tables of contents of 895 journals are made available for browsing and searching. The data covered is from 1993 -> today. Mathematicians can also subscribe to an alert service and receive in their mailbox tables of contents of their favourite journals as they appear.

How it works

Data are downloaded every week by ftp from SWETS (Europériodiques), thanks to a consortium agreement. The data are rewritten by some perl programs, and indexed for searching. For each journal, dynamic links to its CFPM record, and URLS as recorded in the CFPM database are generated along with the display of the contents.

sSs in the future

To improve the service given by sSs, we plan to re-conceive the data model, and make the service more integrated with the CFPM database. We need to be able to exploit these data to their full possibilities (output the contents of a journal for a whole year for instance). Experience from both NUMDAM and CFPM projects will be useful for this work, which should start in late 2001.

List libraries participating to *"Join Catalogue of Mathematics Serials" (CFPM)*

Angers
Bordeaux
Besançon
Bibliothèque nationale de France
Clermont-Ferrand
Grenoble:
- Institut Fourier
- Médiathèque IMAG

Lille
Marseille:
- Centre International de Rencontres Mathématiques
- Centre Mathématiques et Informatique

Nancy Institut Élie Cartan
Nantes, Laboratory of Mathématics (CRDM)
Nice, Laboratory J.A Dieudonné (J.A.D)
Orsay, Library J. Hadamard
Paris Centre
- École Normale Supérieure
- Institut Henri Poincaré
- Jussieu (JMR)

Rennes, Institut de Recherche en Mathématiques
Rocquencourt, INRIA
Sophia-Antipolis, INRIA
Strasbourg, Institut de Recherche en Mathématiques
Villetaneuse, Bibliothèque du LAGA (Paris 13)
INIST

List laboratories access to *"Journal Table of Contents server" (SSS)*

Amiens LAFMA
Angers
Besancon
Bordeaux
Brest
Bretagne
ENS Cachan
Clermont
Compiègne
Dijon
Grenoble Institut Fourier
Grenoble Médiathèque IMAG
Jussieu
La Rochelle
Lille AGAT
Lille Probabilités-Statistiques
Limoges
Lyon EC
Lyon ENS
Lyon Laboratoire ISIL
Marne la Vallée
Marseille CIRM
Marseille CMI
Marseille CPT
Marseille IML
Montpellier
Nancy IECN
Nantes
Nantes EC
Nice Laboratoire J.A. Dieudonné
Orléans
Orsay Département Mathématiques
Palaiseau Polytechnique
Palaiseau CMAT CMAP GAGE X
Paris CEREMADE, Dauphine
Paris ENS
Paris 5
Pau
Pau
Poitiers
Reims
Rennes Département Mathématiques
Rouen
Savoie
Sophia Antipolis
Strasbourg IRMA
Toulon
Toulouse
Tours
Univ du Littoral
Vannes
Versailles
Villetaneuse Département Mathématiques
Paris 13

2. Acronym : MOPAC

Math OPAC Project: One query to all math library catalogues

Elizabeth Cherhal, July 2001

Abstract

This document presents the french mathematical libraries' "multibases" facility: its evolution over the years, the lessons learned from different projects who have endeavoured to do the same thing, and proposes an architecture for the future "MOPAC" service. In this article "catalogue" usually refers to the mathematical libraries' main book catalogue. The combined mathematical journals catalogue[21] is described in another article.

History

At the beginning of the 1990s, the RNBM (Réseau National des Bibliothèques de Mathématiques) decided to use the WAIS indexing software to make its catalogues available via the Internet. The data were processed as follows:

- Starting with the library management software (usually "texto" or 4D) an ascii file is exported, and when necessary copied to the machine hosting the WAIS server.
- This ascii file is reindexed by the WAIS software ("waisindex" command).
- The WAIS database is made accessible to the Internet by the WAIS server ("waisserver" commmand)
- The user can access all the WAIS databases via a special WAIS client installed on her machine (mac, pc or unix).
- The client and the server communicate via a special protocol (Z39.50 first version), use of this protocol enables simultaneous distributed queries (as does Z39.50 as we know it today).
- Heterogeneity of the indexed data makes a uniform presentation, and deduplication of results practically impossible. (If 5 libraries have the same document, we obtained 5 responses, all slightly different).

At this time, the web was still in its childhood.

In the mid nineties, the web is developing fast, with the CGI (common gateway interface) library, WAIS developers in Dortmund wrote the WAIS/web gateway SFgate. Thanks to SFgate, one could query multiple databases via a web navigator.

- SFgate is installed in different places: Grenoble (upon creation of MathDoc Cell in 1995), Jussieu, Orsay, Lille, etc…
- At the same time, the first web/database interfaces appear (the ZBW3 (ancestor of EDBMW3) software developed in Grenoble for Zentralblatt-MATH is an early example). Library software houses start developing their web interface (Texto/web Ever/web, etc…).
- As each web/database interface is a specific development, multibase distributed queries are not possible. The libraries who acquire (Lille, Strasbourg) or develop (Bordeaux,

[21] www-mathdoc.ujf-grenoble.fr/Activites/CMJC.html

Nice) web interfaces keep the WAIS server running to remain compatible with the "multibase" SFgate-based system.
- New libraries set up the WAIS/SFgate system, and some old ones update their server, thus permitting field searches (which was impossible with the first versions of WAIS).

In the late nineties, the web explodes. Everyone has their server.
- The important libraries (central campus libraries, BNF, etc…) now have their web interface.
- The Z39.50 protocol, (much talked about, but less implemented) is implemented in certain campus (Valenciennes, Lyon 3) , town or county (Val d'Oise[22]) libraries. The Z39.50 multibase distributed query facility starts being used.
- Mathematical libraries start to have their own web interface, and do not always see the point of a multibase distributed querying system.

The EULER project and its multibase distributed query system

Early 1998, MathDoc Cell is contacted for participation in a European project aiming to make available all sorts of heterogeneous documentary resources (library catalogues, but also online documents, such as preprints and articles from online journals) in mathematics. The EULER project partners decide to use the "Dublin Core" element set as a common denominator for bibliographical description, and the Z39.50 protocol for distributed queries. Software from Indexdata (Denmark) was used for the Z39.50 server and client.
The technical working of this solution is very like the WAIS RNBM one, but with a few improvements:

- The libraries/information managers/project partners convert their records (either classical bibliographical records, or in the case of online documents, existing metadata) into the "EULER XML format", which is compliant with Dublin Core. The conversion programmes are generally quite simple and adaptable from one case to another.
- The "records" produced by conversion programs are then processed by a common postprocessor which uniformizes the accents and produces, with the values of certain fields, a "deduplication key".
- The result of this postprocessing is then indexed by the Z39.50 server ("zebraidx" command).
- The databases created by zebraidx are made accessible to the network by the Z39.50 server ("zebrasrv" command).
- The client (web/Z39.50 gateway) provides a uniform access to all the databases.
- As the data is pre-converted, the results can be written in a uniform manner.
- Thanks to the deduplication key, the result list is presented "deduplicated" to the user. (if 5 libraries have the same document, it will appear only once with a clickable list of holding databases).

Pros and Cons of WAIS/SFgate or "EULER" solutions

Let us first say that both solutions have a major drawback: the necessity of working with an exported copy of the database rather than accessing the database itself. Records will

[22] webbdp.cg95.fr/web2/tramp2.exe/log_in?SETTING_KEY=Valdoise

never be updated more than daily, and "real time" access to the database is impossible (one cannot obtain up to date information about whether a book is on loan, for instance).

This drawback is in itself also a major advantage: the web access system is totally independent from the actual library management system. Practically nothing must be changed if the library acquires new software.

The following table summarises other pros and cons.

Problem	WAIS solution	EULER solution
Compiling and Installation	WAIS easy, SFgate quite difficult	Easy if one adopts the "out of the box" EULER configuration. Difficult if one wants to do something else
Configuration	Quite easy	Needs a data conversion programme (programmes converting popular "ajout piloté" or "tabular" formats have been written)
Result presentation	Heterogeneous Duplicates are inevitable	Homogeneous Deduplication works at 80%
Performances	Distributed queries are very slow Network protocol inefficient Indexing and searching not very efficient	Client/server system more efficient Indexing and searching very fast
Limits	A WAIS database is limited to about 25000 records	No limit
Compatibility	The protocol used by WAIS is not compatible with Z39.50. WAIS is only compatible with itself	Use of Z39.50 V3 should facilitate use of the same client program to search EULER databases along with other ones from libraries.

Different other data models for "multibase" querying

"All Z39.50"

This solution, adopted by important libraries and combined catalogues, such as the "SU[23]", and the "CCF[24]", consists in having library management software frontended by a Z39.50 server, interacting directly with the database on the one hand, and the internet on the other (see the Val d'Oise[25] website). As all the servers speak the same language (Z39.50), one can access simultaneously different databases, as one currently does with WAIS or EULER, but without needing to bother to export, convert and re-index data.

This solution, ideal in principle, encounters a few obstacles, the most important of which is economical. It has proved that developing a Z39.50 server adapted to such and such software (or more precisely the underlying database management system) is a tedious and not always profitable business, and software vendors either hesitate to develop it, or sell it for a good price. Clients tend to prefer the "straightforward" web interface, and all the nice little features that often go with it to the more complicated (normalised) Z39.50 one. Real examples for mathematical libraries are that CINCOM proposes no Texto/Z39.50 (or today no CINDOC/Z39.50) or that GB concept has been selling Alexandrie/web for several

[23] www.abes.fr/su01.htm
[24] www.ccfr.bnf.fr/
[25] webbdp.cg95.fr/web2/tramp2.exe/log_in?SETTING_KEY=Valdoise

years, and has only just announced a Z39.50 server for 2001. In our opinion, it is unlikely that **all** french mathematical libraries will ever have the money to invest in a library management system supporting a Z39.50 server.

"All web" or "mixed"
Considering that each library likes to have its management software, and its web interface with its own particularities, why could we not, without Z39.50, develop a system only based on web software (httpd protocol, and cgi or java programs for instance) to access all databases with one query ? One of the best examples of this model today seems to be the KVK program[26] . However, it seems to us that development of such a system would be quite time consuming, and also, once developed, difficult to maintain. A site only has to change its web interface a little bit for the application to stop working without the developers realising it.
Another nice example of this model is the AskOnce[27] commercial software developed by xerox. However, apart from, or as well as, the initial cost, the same remarks apply as regards maintenance.

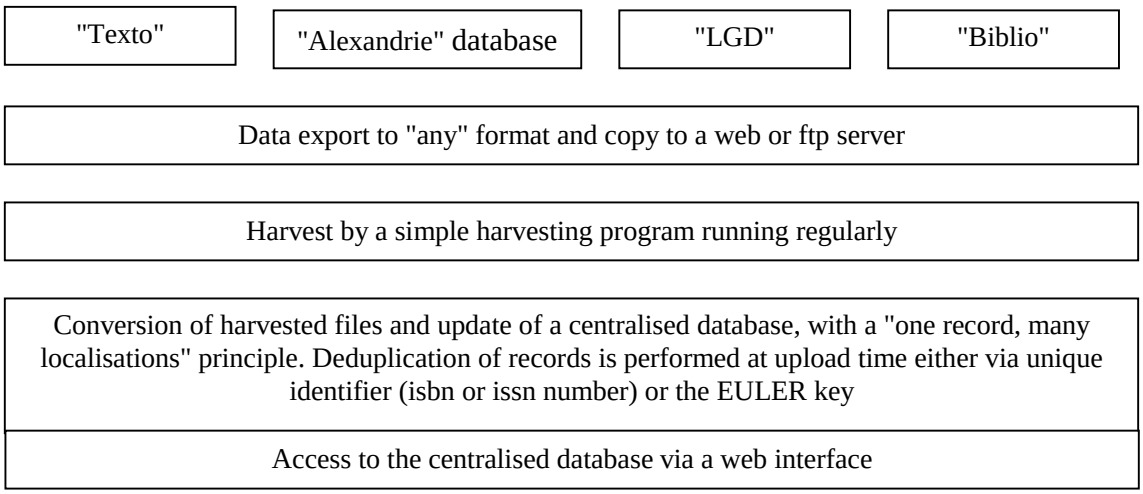
MOPAC , the catalogue search engine
Everyone is familiar with Internet search engines. They are based on a fairly simple idea: periodical visits to sites, harvesting and centralised indexing of the harvested files. Why not do something like this for mathematics library catalogues?
On the one hand, our evaluation of the EULER project, and its pros:

- The "dublin core like" metadata model and its expression in XML
- Easiness of writing conversion programs for most structured data to this format
- The "deduplication key" creation algorithm.

But also its cons:

- Heaviness of Z39.50 server and client software
- Difficulty installing servers everywhere.

And on the other hand, the positive experience of the "CFPM[28]" (Catalogue Fusionné des Périodiques de Mathématiques)database, leads us to propose a schema like this:



[26] www.ubka.uni-karlsruhe.de/hylib/en/kvk.html
[27] www.redoc-grenoble.org
[28] www-mathdoc.ujf-grenoble.fr/perio/

We estimate the total number of "deduplicated" bibliographic records in all mathematics libraries at about 150.000.
Currently, we are considering using MySql as the underlying database software for this application. Another possible option might be use of EDBM (indexer, search and display).

The advantages of such a system would be:

- Libraries have nothing to install. They only need to export their database every now and then to their web or ftp server.
- We are delivered from network problems. Harvesting is done in the background.
- Conversion programs are stored, and maintained at MathDoc Cell. This is easier to maintain than if we have multiple copies all round different sites.
- The software development and maintenance is easier than an "all web" solution.

The disadvantages would be:

- The data would not be totally up to date (but sufficiently we think)
- Libraries must trust a copy of their data to MathDoc Cell, or another site such as the UMS J Hadamard, Orsay. (on the other hand a copy of the data in another place might sometimes come in useful to libraries).
- Good cooperation is necessary when setting up the system (but we think this is easier than trying to get people to use "wais").

MathDoc Cell and RNBM (via UMS J. Hadamard, Orsay) are planning to set up the "MOPAC" protoype late 2001.

List of libraries participating to
"Access to distributed on-line catalogues of books".

- Interrogation by field searcher
  Grenoble (Institut Fourier et Médiathèque IMAG),
  Lille
  Lyon (UCB)
  Montpellier
  Nancy
  Nantes
  Orsay
  Rennes
  Villetaneuse:

- All libraries (Interrogation without field searcher)

- Others Catalogues of mathematics accessible on line
  Lyon ENS.
  Bordeaux BMI.
  Marseille CMI.
  Marseille CIRM.
  Nice, Laboratory JA Dieudonné.
  Paris Institut Henri Poincaré.

3. Acronym: EULER

EULER Project Evaluation
Elizabeth Cherhal, June 2001

The EULER project[29], cofunded by the European Union, took place from April 1st 1998 to September 30th 2000.
MathDoc Cell, who was a main partner in the project, played a very active part, together with Orsay and Strasbourg mathematical libraries, during the life span of the project.

The goal of the project was to make accessible the following resources:

Bibliographical databases (Zentralblatt-MATH et Jahrbuch),
Library catalogues,
Electronic journals from academic editors,
Online preprints or theses,
Internet math resources index,

via a unique user interface (the EULER engine[30]).

The goals of the project were all met, and the evaluation report was very positive.
Nevertheless, attempts to transform the "functional prototype" into a running service were not followed by effect.

MathDoc Cell, together with other project partners, considers the following aspects of the project useful and important:

- The common metadata model and the conversion programs written to convert the different databases (library catalogues, serials, preprint and theses) to this model.
- The principle of the "deduplication key"

The thoughts and technical achievements on these two points are directly useful for setting up the "MOPAC" project, together with *Bibliothèque Mathématique d'Orsay*, *Jacques Hadamard*, UMS 1786-CNRS.

On the other hand, we are less enthusiastic about the distributed architecture adopted by the project. Each partner kept his data on his own site and made them accessible by a Z39.50 server (zebra). This solution adopted by EULER does not seem to provide a satisfactory service.

- "Heaviness" of the Z39.50 protocol and software used.
- Difficulty in maintaining the application. Necessity of installing new versions of the server at each partner's site, query software complex and difficult to change.
- Problem of distributed queries via the protocol. Very unreliable reply-time, especially in the event of problems on one of the servers, critical mass, necessity for each site to remain compatible with the others.

In conclusion, our participation in this project brought us experience and enrichment profitable for future projects, be it on the technical side or on the more pragmatical one of european project participation (report writing, management…).

see also : Laurent Guillopé and Bernd Wegner, *The EULER projects : achievements and continuation*, European Mathematical Society Newsletter 38, December 2000.

[29] www-irma.u-strasbg.fr/EMIS/projects/EULER/
[30] euler.lub.lu.se/engine/beta2.html

4. Acronym: NUMDAM
NUMérisation de Documents Anciens Mathématiques

Digitization of ancient mathematical documents

Proceedings "Actes des Journées **La Numérisation des Collections",** Atelier - Journée d'études organisée par le laboratoire Reconnaissance de Formes et Vision de l'INSA dans le cadre de L'Institut des Sciences du Document Numérique Rhône-Alpes - I.S.D.N., 25 juin 2001, Lyon.
Thierry Bouche, June 2001

English version.

Different projects for digitization of ancient collections are taking place in the world. Such projects are especially important for fields, like mathematics, where documentation is remarkable for its durability.

One of the most important digitization projects for the academic world is probably the American JSTOR project (twenty or so American mathematical journals, some of which are over 100 yrs old, are available there). We must also mention the American Physical Society's PROLA project, and others at Cornell or Göttingen Universities. In as far as France is concerned, we must mention the important collection available on Gallica (BNF). We can also cite the technical know-how in INIST and IMAG Grenoble.

France produces twenty or so high level mathematical journals, some of which figure among the best internationally, and a few of which are over 100 years old. It was therefore desirable to set up an important digitization operation, the NUMDAM project, for these journals. Beside the immediate interest for mathematicians and science historians, the project will give better visibility to French mathematical journals in the world. It is planned to make links between the big mathematical databases (*Jahrbuch, Zentralblatt MATH* and *Mathematical Reviews*) and the digitized collections on the one hand, and between the digitized collections and other mathematical collections on the other hand, via cooperation agreements.

The CNRS has put MathDoc Cell in charge of setting up and managing the NUMDAM project.

General principles

The first important phase, funded by CNRS, will enable digitization of about 220 000 pages (approximately 8 000 articles). It started in September 2000, the invitation to tender for operators will be published during June 2001.
Five general-interest mathematical journals are concerned by the first phase.

The following general principles have been decided for the whole of the NUMDAM programme.

Above all, it is a scientific operation to enable better visibility of French mathematical journals and to grant wide access to the digitized collections for researchers, science historians and librarians.

The programme aims at maximum quality digitization, enabling OCR processing, thence indexation, of the texts and excellent quality for screen visualisation and printing.

- The operation was conceived with the idea of national or international cooperations with institutions developing similar projects (comprising an important part of mathematics) and with the UPS 2065 “ Archives de la Création Mathématique ”.
- Access to the digitized collections will be as widely open as possible.

Technical choices

The choices made up to now are:

- 600 dpi black and white digitization for typical pages, greyscale or colour for the rare plates and photos.
- Good quality cataloguing of articles (XML with a "home-made" DTD), OCR to allow fulltext searches: (except mathematical formulae, which could be processed at a later stage, technology allowing), possible cataloguing of bibliographies (possibility of refining searches to cited authors or titles).
- Delivery of articles to the users in multipage image form, with an ergonomical format (PDF in 300 or 600 dpi, DjVu…).
- Preservation of the economical balance of living journals by setting up a 5 year moving wall.

cf. www-mathdoc.ujf-grenoble.fr/NUMDAM/

French version

NUMDAM
NUMérisation de Documents Anciens Mathématiques
Thierry Bouche, June 2001

Introduction

Différents projets de numérisation de fonds anciens sont en cours dans le monde. De tels projets sont particulièrement importants pour les disciplines, comme les mathématiques, où la documentation se caractérise par sa pérennité.

L’un des projets de numérisation les plus importants pour le monde académique est sans doute le projet américain JSTOR (une vingtaine de revues mathématiques américaines, dont certaines plus que centenaires, y sont en particulier disponibles). Il faut mentionner également le projet PROLA de l’American Physical Society, ainsi que d’autres projets à l’Université Cornell, à l’Université de Göttingen. Pour ce qui concerne la France, il faut mentionner l’important fonds disponible sur Gallica (BNF). On peut également citer à cet égard le savoir-faire acquis à l’INIST et à l’IMAG de Grenoble.

La France produit une vingtaine de revues mathématiques de haut niveau, dont certaines se situent parmi les meilleures au plan international, et dont beaucoup sont plus que centenaires. Il était donc souhaitable de mettre en œuvre une opération importante de numérisation pour ces revues : le programme NUMDAM. Outre l’intérêt immédiat pour les mathématiciens comme pour les historiens des sciences, une telle opération augmentera

la visibilité des revues mathématiques françaises dans le monde. Il est prévu en particulier que des liens soient établis entre les grandes bases de données mathématiques (*Jahrbuch*, *Zentralblatt MATH* et *Mathematical Reviews*) et les fonds numérisés d'une part ; entre les fonds numérisés français et d'autres autres fonds mathématiques importants d'autre part, ceci par le biais d'accords de coopération.

Le pilotage du programme NUMDAM a été confiée à la Cellule MathDoc (CMD) par le CNRS.

Principes généraux

Une première phase, significative et financée par le CNRS permettra de numériser de l'ordre de 220 000 pages (environ 8 000 articles). Elle a débuté en septembre 2000, l'appel d'offre pour les opérateurs sera publié courant juin 2001.

Cinq revues généralistes sont concernées par cette première phase.

Les principes généraux suivants ont été retenus pour l'ensemble du programme NUMDAM :

- Cette opération est avant tout une opération scientifique permettant de renforcer la visibilité des revues mathématiques françaises et de donner un large accès des chercheurs, historiens des sciences et documentalistes aux collections numérisées.
- Le programme vise une qualité de numérisation maximale permettant le traitement par OCR, donc l'indexation des textes, et une excellente qualité pour la visualisation sur écran et pour l'impression.
- Cette opération a été conçue dans l'optique de coopérations, nationales ou internationales, avec les institutions qui développent des projets analogues (comportant une part importante de mathématiques) et avec l'UPS « Archives de la Création Mathématique ».
- L'accès aux fonds numérisés sera le plus ouvert possible.

Choix techniques

Les choix retenus à ce jour sont :

- Numérisation à 600 dpi noir et blanc pour les pages typiques, en niveau de gris ou couleur pour les rares planches ou photographies.
- Catalogage fin des articles (XML selon une DTD propre), OCR pour permettre une recherche plein-texte (à l'exclusion des formules mathématiques : les formules pourront être traitées ultérieurement, si la technologie le permet), catalogage éventuel des bibliographies (possibilité d'affiner une recherche en tenant compte des auteurs ou des titres cités).
- Livraison des articles aux utilisateurs sous forme d'images multipages, selon un format ergonomique (PDF à 300 ou 600 dpi, DjVu…).
- Préservation de l'équilibre économique des revues vivantes par la mise en place d'un *moving wall* de cinq ans.

cf. www-mathdoc.ujf-grenoble.fr/NUMDAM/

Acronym : EDBM
European Database Manager for Mathematics

EDBM : 1996 – 2001

Claude Goutorbe, Laurent Guillopé, June 2001

The EDBM ("European Database Manager for mathematics") software has been created in the framework of the french-german cooperation on Zentralblatt-Math (ZM) and its European extension. Cornerstone of the ZM online access and essential tool used in other projects, the edbm suite has fully proved its efficiency as a database search engine, with customization possibilities for different applications, full integration in the web and evolution capabilities.

After a brief history, we describe the internal of the edbm software and give a list current applications as well as work in progress.

I. EDBM history

In 1995, the Cellule MathDoc was founded with a strong commitment in a french-german cooperation on the "Zentralblatt für Mathematik und ihre Grenzgebiette", one of the two bibliographical indexes covering the literature published in mathematical research worldwide. At that time, there was poor access to the database : one telnet access on the STN network (un-natural query language, poor display of mathematics), one proprietary frozen interface on local servers (the PFS system, limited to Solaris operating system) and a DOS-PFS interface (running on each cdrom separately, without giving a unique view on the global database). It was decided to explore the possibility to build an http access to the database (which was contained in a set of 4 cdroms). The first w3 interface, which was no more than an http gateway to the PFS software action, has been demonstrated in the spring 1995. Important features as query forms (in four language versions), different display formats were present, but dependence on a proprietary software (PFS by Krammer & Hoffman), limitation to one specific operating system, poor efficiency hindered the development of this solution.

At the end of 1995, it was observed that the indexes included on the cdrom could be easily read. As a consequence, a first prototype, based on the db library (taken in the Berkeley BSD unix, with a copyright statement that allowed its usage in this project), was made at the beginning of
1996. Search efficiency was impressive and Unix OS independence was established (development was done on Linux and ports done successfully on unixes from HP, Digital, Sun, IBM, Sillicon graphics). The zb/w3 software was delivered in 1997. Its user interface is well known (small enhancements have been introduced since then) and about 100 zb/w3 installations all over the world have been done, with IP identification procedures and cd updates capabilities.

The zb/w3 software was dependent from the cdrom produced through the PFS software. A major refoundation work was done in the 1998-1999 period, with the aim to have control on every step of the database exploitation. A new core for the search engine (based again on the db library and written in C) was designed, applications definitions and filter actions

through python modules were implemented, updates procedures with processing of the indexes were introduced, efforts to introduce more structure in the databases (classification browser, tentative author and serial indexes) were done. In the year 1998, a first version of the edbm/w3 engine was released, which has been widely installed. In the mean time, new applications (eg SemProba) were realized and the status of the software (essentially free software) was clearly defined.

The preceding work culminated in 2000 with the indexation module, which completely frees from the PFS software and, after various important low level optimisations, offers the possibility of indexation of huge data sets with great efficiency. This indexation module was delivered for production in the 2001 spring. Meanwhile the scope of possible edbm applications has grown up.
The software development is entirely due to Claude Goutorbe, computer scientist working at the Cellule MathDoc. During the years 1995-1999, the development was sustained on own resources of Cellule MathDoc (according to European rates, an investment of ?? euros), while the UE funded Limes project (start 2000, April 1st, duration 4 years) gives financial support for further edbm development.

In 1996, a 4 years contract was signed with the Fachinformationzentrum Karlsruhe, the Limes consortium agreement specifies how development after 2000 will be used by the partners and the scientific community in general. As a general matter, CNRS and Université Joseph Fourier did agree to consider edbm software as open source, freely available for non profit organisations.

II. EDBM internals

The EDBM software is based on a core written in C (about 4000 lines), linked by an API interface (about 1000 C lines) with python designed applications (the ZM application correspond to about 7000 python lines) which act as filters on the input data (the query), the output (the answer data) and organise the cgi treatment of the answers delivered to the user.

The database structure is covered by the db library (Berkeley).

An edbm database is mostly flat (even if it derives form a relationnal database) : it is a set of entries, made of fields (for display and/or searchable, textual, numeric, boolean).

```
df = ('num', 'au', 'ti')
num = ('num', 'c', 1, 'eq', 'num_op')
au = ('au', 'c', 1, 'and', 'au_op')
ti = ('ti', 't', 0, 'and', 'ti_op')
com = ('com', 't', 0, 'eq', 'com_op')
sf = ( num, au, ti, com)
```

The order of the entries (e.g. from the newest to the oldest), as given by the primary field 'num', is fixed and important for the edbm action.

II.1 edbm/w3

The edbm/w3 component is what operates on the server side when a user submits a query. The work can be decomposed mainly in three parts: analysis of the query, action of the search engine, action by the display engine. The http request sent by the user contains attributes of two types : search attributes and display attributes.

One executable (pyedbm) is called by the http server, with a configuration file, an application python file and the http (post or get) query.

The control is trough IP addresses.

Authentification is IP based, by scanning an authorization file (where IP addresses are defined in full, by class B subnets, with values, intervals or masking): in case of negative authentification, a limited answers subset can be given to the user or nothing at all.

II.1.a Analysis of the query

For each searchable field, there is an index file with position offsets which does permit near connectors (existence of stop words can disturb neighborhood search). Moreover, local search logic on a field (and, or, near, inequality for numeric fields) can be specified. Input filters act on search terms : using object oriented features of the scripting language python, hooks are attached to every search field, so that its value could be preprocessed just before the query should be applied on the data set.

One basic example for these hooks

```
def edit_com(self, com):
    return edbmutil.iso2ascii(com)
```

is the reduction of the query text to a 7-bit uppercased string: diacritical accents, as punctuation signs, are striped. Hence, the french "géométrie" coincides with the german "GEOMETRIE". More subtle processing could be introduced for non European transliteration and other reductions of field values to normal forms.

Such reductions can depend from the application : left truncation on author name is applied in the standard ZM query form, while no truncation holds in more advanced ZM query forms.

II.1.b The search engine

The search engine has a search equations solver, which can treat any boolean equation : most of them are written by filling up user friendly forms, but the user can write his own complex query (this feature is useful for data base maintainers to look deeply into the database).

At the end, the search engine delivers a sorted list of entries (according of the order of the database), which is taken by the display engine.

II.1.c The display engine

The scheme of the display, with the attributes set up by the user, is part of the application itself. Interactive lists (where the user can select some items for another display, appropriate to html or pdf answers) or static lists (e.g. ultimately for impressions) are the two main schemes which have been implemented (other corresponds to the "No_answer" or "no_access" case).

According to user specifications (such as range of entries to display –default is the first 20 answers–, full or short dispay type, display format -default is html with TeX source), every component of the answer can be taylored to user wishes in the framework defined for each application (a webmaster have easy control on that, while the user is free beyond the choices set by the webmaster).

For example, the displayed fields list for on entry is specified by

```
self.dtd["item"] = ["num", "au", "ti", "cla"]
```

As for input filters, each field display is specified by defining methods or strings attached to every field, eg

```
self.head_list["com"] = [htmlfmt.em(self.strings["com_label"] + " : ")]
self.tail_list["com"] = [htmlfmt.end_line]
def do_com(self, name):
    ccom=bf_html(self.data["com"])
return vol_html(self,self.data["com"]).
```

Examples of easy hook extensions is inclusion of links to external resources (query to localisation catalogue for journals characterized by their ISSN, full text document in some distant digitised library).

II.2 edbm/indexing and updating

The main edbm application (Zentralblatt-MATH) was still dependent on the indexes produced through the pfs system. This made it difficult to implement a reasonable updating system for the various international mirrors. The idea was to provide mirrors with new and modified data only, making it possible to transfer this data via the network, and avoiding the need to burn a large number of update cdroms each month. A local indexing and updating procedure would then produce the new version of the database.

While various ad-hoc indexing modules had been written for specific applications, their performance was poor and they could be used only on small datasets. A new, optimized indexing module was developped during fall 2000, together with an updating procedure that merges new and modified data with the current version of the database.

The indexing process is driven by a set of instructions, which essentially take the form of regular expressions matching and substitutions to be done on the input data, thus allowing various index terms to be produced for a given input.

For example given the following instruction:

```
s/(\w+) (\w+), (\w+)/\2, \3 \1/
```

and the input

```
Do Carmo, Manfredo
```

the index term "Carmo, Manfredo Do" can be produced.

Since we have no need for online (real time) updates, the updating process is actually a merging process that produces a new database from the previous one and update data. Although this is probably a little slower than "in place" updating, it allows the database to always be already sorted in its natural display order, and also produces optimal indexes in terms of both space usage and retrieval speed.

III. Applications

III.1. In Zentralblatt-Math there are 11 search fields and 14 display fields. Three query forms are available : one simple with constant search fields, one with choosable fields and logical connectors, one with free query boolean search equations. The user interface does exist in the main languages (english, french, german, other languages have been introduced by local user groups). There are 6 display formats available : html, bibtex, dvi, postscript, pdf, source.

Updates procedures (deleting, replacing, adding entries) is implemented.

III.2. Jahrbuch über die Fortschritte der Mathematik

This application doesn't differ a lot from the preceding one, as most of the fields and display formats are identical. Differences are mainly in the access number type and the external linking to digitised documents.

A memorandum of understanding about the edbm rights was signed between the Cellule MathDoc, boards of the Jahrbuch project and the EMS.

III.3. SemProba

SemProba is an commented index (through abstracts and annotations) of the published papers in the Séminaire de probabilités, whose main chairman was P.-A. Meyer for many years. Published since 1967 in the series Springer Lecture notes in mathematics, it contains about 1200 entries. There are 10 fields, with one virtual display field. In the title field, in case of a french title, there is a rough translation with english keywords, which is searchable, but not displayed.

There are two interfaces (one in french, one in english). Browsable lists exits for the author, classification and lecture type fields. In the exploitation installation (linked with the master server in Strasbourg), there are 5 display formats (html, postscript, dvi, bibtex, pdf), while other formats (xhtml and mathml, produced by the tex4ht engine; discussions with its creator E. Gurari have been held) have been investigated and are available in beta form.

III.4. NUMDAM prototype

The aim of NUMDAM is to digitise French serials, with a first phase including about 7000 articles and 200 000 pages. In the preparation of the digitisation, a database was set up and various options (entry formats, external links) have been easily tested and checked. The data will ultimately be stored in XML format according to a specific dtd : inclusion procedures of this xml fragments in a edbm database have been successful implemented.

III.5. Future applications.

The application SSS (Serveur de SommaireS) handles table of contents of about 900 serials (400 in mathematics, 500 in related fields), with new data loaded every week. The data provider is Swets, with a consortium agreement for a service accessible to all mathematical centers in France. Strong links do exist with the Catalogue fusionné des périodiques (relational database managed with MySQL and query on the web through a simple interface). One of the specific feature is the weekly loading of new data : updates procedure will be used to achieve these requirements.

The current distributed access to main Opac of mathematical libraries is done via the Wais protocol (interface SFGate for the final user). Weakness of this system obliged to renew it : the new architecture (managed in Orsay) will be centralized. The newest problem to treat is the deduplication of the entries present in different libraries. Work done during the Euler project (by te CWI) could be reused in this operation.

IV. Future work

There are some points which are, for the time, being not covered by the edbm software : to take them into account implies a modification of the edbm core engine, these points do represent real extensions of the existing software. Achieving backwards compatibility is crucial.

Such extensions are:

- authentification procedures. There are IP based (in some sense Institution based) : some people wish to have personal identification (but without administrative burden). Relating edbm/w3 with LDAP directories (thought sometimes as the identification, authentification and certification method of the coming years) would be a nice extension.
- the display order of the entries is fixed when the edbm database is created. Sorting on the fly, according to criteria set by the user (date, alphabetical author names or serial names,...), would be a real improvement. Today, only the primary identifier per entry is held in memory; dynamic sorting will necessitate a much bigger data set to be held in memory, so further study is needed. Such new possibilities could be implemented in small databases before being included in the ZM application.
- indexes for authors, or serials are widely called by users. Building of the indexes pertains to the input phase of the database. However, new functions must be introduced to implement these new features.
- Up to now, edbm requires an http server. For personal applications (it is now very easy to define one's own database, as the db of his/her emails), sometimes you wish a database without external access. On personal Unix pc, it doesn't matter (use the fake dns name localhost), but for user on Unix servers, it would be very useful to have a standalone edbm engine (totally private concerning the data directories). Another recurrent wish is the availability of a Windows/nt* version.

Deep extensions (as usage of Unicode) are on the wish list, but could wait until the software of next generation.

5. Acronym : LGD
Logiciel de Gestion Documentaire

A library management system
Claude Goutorbe, Laurent Guillopé, July 2001

One of the tasks of the MathDoc Cell (MDC) is to provide mathematics libraries with technical support, in particular installation and customization of their library management software. During the period 1995-1998, the MDC support mainly concerned one proprietary software (Texto, by ChemData) and WAIS.

Technological evolution (wish for relational databases, need to comply with common standards, prominence of the web), as well economic pressure (software acquisition and maintenance) induced libraries to look for a new software.

Several discussions and workshops were organized to attack this question. Two "home-made" softwares were presented: the software developed in Nice by B. Lhomme (based on Access & Visual basic) and the software developed by J. Bétréma in Bordeaux (based on Oracle products). The "Nice software" looked quite interesting but it was soon discarded due to its price and to the fact that the sources for the code were not available. The "Bordeaux software" looked equally interesting and the code was freely available. An attempt to install it in Grenoble was made and it was later on decided not to proceed for two reasons, the difficulty to upgrade the "Bordeaux software" with the new versions of the Oracle products being used and the cost of Oracle products. It indeed seemed simpler to rely on freely available softwares.

The MathDoc Cell began the LGD (Logiciel de Gestion Documentaire) project in early 1999 in cooperation with the Réseau national des bibliothèques de mathématiques / National network of mathematics libraries (RNBM). The purpose of the project was two-fold, namely to produce a schedule of requirements and design (data types, relational structures) that could be used by libraries to choose a software and to develop a "functional model" that could serve as test platform meeting the requirements. It was decided to use open source tools in order to make the software freely available. Two years later, reference documents are available

www-mathdoc.ujf-grenoble.fr/lgd/lgd.html

and a prototype is running (cataloguing, users administration, loan, wais access).

Further commitment of the MDC on the LGD (as a library management tool) has to be thoroughly discussed within the mathematical libraries circle or with libraries in other fields.

In any case, the experience gained from the LGD project has already been quite useful both for the MathDoc Cell and for the libraries. The knowhow on SQL developed at the MDC has been much useful for the re-foundation of CFPM (this is now an SQL database) and will probably be used for MOPAC as well. The LGD software itself, properly adapted, could be used in other MDC project (such as NUMDAM). On the other-hand libraries benefited from the LGD: it has been installed in Grenoble (Institut Fourier) in March 2000 as an emergency (temporary) substitute for Texto when the computed hosting this software crashed. A similar installation is scheduled in Montpellier under the same conditions.

I. LGD Development steps

During the first semester of 1999, meetings with librarians were held, while documents describing the state of reflection in some libraries (Rennes, Nancy, Bordeaux) were delivered. These discussions concluded with a set of reference specifications on the organization of a mathematics library information system. The levels of controls (eg author authority list) were much discussed, with (temporary) compromise as conclusion.

During the summer 1999, two computer science students developed the first software components: D. Bernard (INSA, Lyon) developed the cataloguing part, while C. Makni (ENSIMAG, Grenoble) worked out the loan module.

In the fall 1999, C. Goutorbe worked out the code written by the students to produce a unified application. The version 1.0 of the LGD software was presented in October 1999.

Some particular enhancements and consolidations were made to the LGD when the Institut Fourier asked for an emergency (temporary) substitution of Texto which became unavailable in February 2000 (computer crash). A documentation has also been written on this occasion. The LGD has been in exploitation at the Institut Fourier since March 2000.

In December 2000 and January 2001, training workshops were organized in Grenoble. About 25 persons (coming from 13 libraries) have participated, made real installations and tested the cataloguing and loan procedures.

II. Technical sketch

The basis of the system is an SQL relational database, consisting of about 50 tables. The various modules are directly attached to the SQL database: graphic user interface, cataloguing module, library users module, loan module. Applications (as data export and import, lists printing, bar code editions) also communicate directly with the SQL database.

User interface is of graphic type, with windows, widgets and input forms. So far, only the X-windows system is supported (adaptations to other interfaces, such as Microsoft-Windows systems, would need extra work).

The software, running on Unix, uses open source tools : MySql for the database engine, GTK for the graphic user interface and Python as programming language (a small C-written piece is used to link the SQL database and Python scripts): the system should therefore be highly portable).

Up to now, data and structures genericity is not available: field definitions or extensions by new attributes inclusion is not easily done. Modifications (eg on the geometry of the forms) must be tracked within the code.

Installation and maintenance of the software require the assistance of a computer engineer. Without going into the internals, he will provide assistance for interactions with local environment (operating system upgrades, data import or export,...). The MDC does not have enough manpower to provide a hot line and maintenance must be taken care of by the institution where the software is installed (this is a common practice for free softwares).

III. Available software and installations

The existing software consists of three main modules (cataloguing, library users management, loan operations).

For each document there is a bibliographic entry, which is linked to copy entries (identification number, acquisition date). The loan application draws relationships between copy entries and user entries. Specific fields sets are available for monographs, theses and proceedings volumes.

For cataloguing, the fields with authority lists are: author, editor, collection, city, conference name.

Other applications are also available: bar code editions and bar code facility for loans, import from an RNBM Texto database, edition of letters to users with specific editions, new acquisitions lists, data export for wais database, preprint database.

Possible further extensions concern web access (OPAC), edition of specific lists (special collections, special types, ISBD entries,...), serials cataloguing and management module, link with entries in reference databases for local catalogue completion, acquisitions management module, MARC export.

Installations have been made in Grenoble (Institut Fourier, in exploitation since March 2000), Besançon (end 2000), Jussieu and Orsay (March 2001, test installations), Montpellier (scheduled fall 2001).

IV. Towards the future

The MDC believes that the LGD has fulfilled its role of a test prototype. Should this development have a future ? The answer is YES and NO.

Commercial library management softwares have an initial cost as well as an upgrading cost. They also require specialized manpower to customize them (a task made difficult by the fact that thestructure of the database is often hidden). On the other-hand, many open source softwares are now available and widely used in the academic as well as in the industrial world. It is therefore tempting to develop an open source library management software to substitute obsolete softwares presently in use. The "Bordeaux software" as well as the exploitation of LGD at the Institut Fourier advocate in favor of the feasibility of such a project.

The experience of the MathDoc Cell reveals certain difficulties:

- psychological difficulties (a free software is considered as inferior by some persons; a software developed for a community is perceived as a threat to the freedom of choice by some librarians),
- structural difficulties (the installation of a free software requires strong support from the whole local community - librarians, engineers and scientists - and local technical manpower for installation and customization),
- technical difficulties (in the case at hand, the LGD, the software has been designed to answer the main needs of libraries which will have to accept some compromise between available functionalies and the development costs).

Another item should be stressed, namely that no software - whether free or commercial - will ever clean an existing catalogue. Importing the data will often require work or money and the search results will heavily depend on the quality of the original data.

Taking into account these difficulties, it does not seem appropriate to continue developing the LGD having in mind library installations nationwide, hence a NO-answer to the above question.

On the other-hand, it seems appropriate to make the developments available to those who wish to use them for their own purposes and under their own responsibility. Discussions in this direction are being held with the the Bibliothèque Jacques Hadamard (Orsay) and with the MSH-Alpes (Maison des Sciences de l'Homme). They will hopefully lead to further developments in benefit of libraries in mathematics as well as in social sciences. It also seems appropriate to use the experiences gained from the LGD developments for other MDC projects (in particular for the NUMDAM project which requires a management tool for the database). These perspectives provide YES-answers to the above question. A first step to be performed by the end of 2001 is to re-structure the LGD software to make customization easier.

D. – BUDGET

• Budget 2000 – Prévisions / Réalisations.

• Budget 2001 – Prévisions RECETTES / Prévisions DÉPENSES.

• Recettes (CNRS, Ministère, Contrats européens)
Rappel : Années 1995 à 2000.
Contrats UE (EULER et LIMES).

E. – CHRONOLOGIE DES MISSIONS ET INTERVENTIONS DES MEMBRES DE LA CELLULE MATHDOC

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15 juin – Grenoble
Réunion du Comité de Pilotage de la Cellule MathDoc. [PB] [LG] [CG] [MM]

26 juin – Paris
Séminaire à l'Observatoire des Sciences et Techniques / CNRS
Rendez-vous avec M. le Secrétaire Général du Département SPM / CNRS. [PB]

28-29 juin – Lyon
Séminaire *"Les E-modes" De diffusion et d'appropriation des connaissances*, organisé par Xerox à l'Université Lyon 2. [PB]

29 juin – Grenoble
Réunion des utilisateurs de Nabuco : le point sur différentes questions financières, sous la direction de Mme Blanc, Agent Comptable, UJF. [MM]

4 juillet – Paris
4e Journée des Pôles Associés, "Les réseaux changent de siècle", Bibliothèque National de France. [LG]

4 juillet – Grenoble
Réunion avec Jacques Eudes, responsable du Centre de Ressources Informatiques de Proximité, UJF, au sujet *des noms de domaines*. [PB] [EC] [GV].

6 juillet – Grenoble
Rendez-vous téléphonique avec M. Alain Chanudet (INIST), *Projet de Numérisation*. [PB]

10-13 juillet – Grenoble
Université d'été pour la Recherche documentaire Appliquée aux scieNces hUmaines et Sociales (URANUS), *Production scientifique et documents numériques en ligne*. Responsabilité scientifique : Elizabeth Cherhal. [EC]

07-14 juillet – Barcelone (Espagne)
07-08/07 : Conseil de la Société Mathématique Européenne.
10-14/07 : Congrès ECM3 (Third European Congress of Mathematics). [LG]

20 juillet – Paris
Réunion avec la Direction du Département SPM/CNRS, au sujet du *Projet de Numérisation*. [PB]

28 août – Nancy
Réunion avec la Direction du Département SPM/CNRS et l'INIST au sujet du *Projet de Numérisation*. [PB]

03-04 septembre – Zurich (Suisse)
Réunion des participants EULER. [EC, LG]

11 septembre – Grenoble
Réunion des Directeurs de Laboratoire : *Campagne avancement au choix des ITA.* : *réunion d'interclassement régional pour le département SPM, préparatoire aux réunions des CAP nationales.* [PB]

15 septembre – Berlin
Réunion LIMES. [CG]

18-19 septembre – Strasbourg
Conference *"Access to research inftrastructures"*. [LG]

19 septembre – Grenoble
Réunion Gestion des personnels ITARF - Avancement au titre de l'année 2001, CICG. [PB]

22-24 septembre – Grenoble
Week-end de rentrée. Programme : Projet NUMDAN, logiciel de gestion documentaire, contrats européens (EULER, LIMES),…
Participants : R. Douet (Bib. Orsay), J. Marchand (Jussieu), G. Sureau (Bib. Orsay), L. Zweig (Bib. ENS Ulm), Th. Bouche (IF) et G. Vinel (IF) (collaborateurs scientifiques de la CMD), et le personnel de la CMD.

25-26 septembre – Luxembourg
Réunion EULER, fin du contrat. [EC]

26 septembre – Grenoble
Réunion d'information sur les modalités d'application du nouveau marché "Voyages", pour les utilisateurs de NABUCO, UJF. [MM]

29 septembre – Paris
Jury de concours IR/CNRS (admissibilité). [PB]

06-08 octobre – Athènes (Grèce)
Réunions des participants du contrat LIMES. [PB, LG, CG]

16-17 octobre – Paris
Audition Concours IR/CNRS. [PB]

19-20 octobre – Nantes
Fête de la Sciences à l'université de Nantes :
Table ronde *"L'écrit scientifique et sa diffusion (histoire, enjeux, perspectives)"*.
Inauguration du Centre Régional de Documentation Mathématique. [PB, LG]

23 octobre – Paris
Réunion du Comité des "Thèses électroniques" au MENRT. [PB]

23-24-27 octobre – Grenoble
Stage *"Photoshop - débutant"* organisé par la Formation Permanente du CNRS, Délégation Alpes. [MM]

30 octobre – Lyon
Réunion de coordination des miroirs du serveur de prépublications "arXiv". [PB, EC]

31 octobre – Lyon
Réunion du Comité de pilotage du "Centre pour la Communication Scientifique Directe". [PB]

30 octobre – Heidelberg
Comité de coordination du Zentralblatt MATH. [LG]

8 novembre – Grenoble
Réunion Cellule MathDoc / Maison des Sciences Humaines. (Christine Aubry, Bernard Bouhet, Bernard Rapacchi) [PB, EC, CG]

13 novembre – Lyon
Réunion "Thèses en ligne". [PB]

17 novembre – Grenoble
Réunion avec Damien Gaboriau (ENS, Lyon) : Évaluation à mi-parcours de la Cellule MathDoc - UMS 5638, pour le Comité National du CNRS. [PB]

27-28 novembre – Grenoble
Journées de démonstration / formation sur le logiciel de gestion documentaire (LGD).
Participation des bibliothécaires de INRIA/Rhône Alpes, Strasbourg, CIRM et Limoges.

4 décembre – Grenoble
Réunion "Thèses en ligne" au Pôle Européen. [PB, EC]

4 décembre – Grenoble
Réunion d'information "Fin d'exercice budgétaire", CNRS. [MM]

06-07 décembre – Paris
Réunion de préparation Cours /Médiadix. [EC]

07-08 décembre – Grenoble
Journées de démonstration / formation sur le logiciel de gestion documentaire (LGD).
Participation des bibliothécaires de Lille, CIRM, Clermont, Montpellier et IHP.

12 décembre – Grenoble
Réunion "Le point sur différentes questions financières : inventaire, marchés, contrats, l'EURO,…", UJF. [MM]

13 décembre – Grenoble
Réunion des directeurs de laboratoires, organisée par le Président de l'Université Joseph Fourier. Ordre du jour : Grenoble-Alpes-Incubation - Budget : finances, amortissements, coûts fonctionne-ment infrastructure, maintenance bâtiments - Abonnements revues électroniques. [PB, représenté par MM]

13-14 décembre – Grenoble
Journées de démonstration / formation sur le logiciel de gestion documentaire (LGD).
Participation des bibliothécaires de Lyon, Besançon, Jussieu, CIRM, Rouen et IHP. [EC, CG, GV]

15 décembre – Les Ulis
Visite à EDP Sciences : rendez-vous avec M. J.-M. Quilbé, Directeur Général.
Objet : participation de EDP Sciences à la transmission des données bibliographiques concernant les revues de mathématiques vers le Zentralblatt-MATH.
Assemblée Général du CIMPA. [LG]

16 décembre – Paris
Assemblée Générale du CIMPA. [LG]

18 décembre – Lyon
Réunion "Thèses en ligne". [PB]

21 décembre – Grenoble
Réunion avec l'IF (direction et personnel de la bibliothèque) : "Le point sur l'installation et le fonctionnement du logiciel de gestion documentaire". [PB, EC, CG, GV]

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12 janvier – Grenoble
Conseil Scientifique de l'UJF. Présentation du contrat LIMES. [PB]

15 janvier – Lyon
Présentation du projet NUMDAM. Proposition du sujet "Établir un cahier des charges pour une plate-forme d'accès aux fonds NUMDAM", dans le cadre du module "Gestion et conduite de projet" pour le Diplôme de Conservateur des Bibliothèques (DGB10), ENSSIB, Lyon. [PB]

19 janvier – Grenoble
Réunion de travail, en présence des cinq étudiants de l'ENSSIB, pour développer la proposition du projet. [PB, TB, EC]

23 janvier – Grenoble
Rendez-vous avec M. Hubert Emptoz (INSA, Lyon) : entretien sur la numérisation. [PB, ThB]

26 janvier – Paris
Réunion des directeurs de laboratoires de mathématiques et des responsables de bibliothèques (discussion sur les consortiums, NUMDAM, prépublications,…). [PB]

26 janvier – Grenoble
Journées de démonstration / formation sur le logiciel de gestion documentaire (LGD).
Participation de Nathalie Piérache et Didier Gémerlé (Institut Henri Cartan, Nancy). [EC, CG, GV]

1er février – Paris
Rendez-vous avec le consultant TOSCA pour le projet NUMDAM. [ThB]

13-14 février – Grenoble
Journées d'entretien et de rendez-vous sur divers sujets et projets : LIMES, NUMDAM, … [LG]

19 février – Paris
Rendez-vous avec Joël Pollet de la Bibliothèque Nationale de France : discussion sur le secteur mathématiques à la BnF en relation des actions de la Cellule MathDoc. [LG]

26 février – Grenoble
Cours IUT - Information, Communication. [EC]

1er et 2 mars – Paris
Installation de la maquette du Logiciel de Gestion Documentaire : bibliothèques d'Orsay et de Jussieu. [CG]

5 mars – Grenoble
Cours IUT - Information, Communication. [EC]

6 mars – Grenoble
Réunion gestion des personnels ITARF / CICG : changement de corps. [PB]

7 mars – Grenoble
Réunion avec TOSCA Consultant, Mme Michèle Lénart, sur l'assistance technique pour le projet de NUmérisation de Documents Anciens Mathématiques. [PB, ThB, MF, EN].

8 mars – Grenoble
Rendez-vous avec Mme Pauchet, Agent Comptable DR/CNRS : conseils, informations concernant la marche à suivre pour le lancement d'un appel d'offres pour la partie "numérisation" du projet NUMDAM. [PB, MM]

8 mars –Grenoble
Réunion "Thèses en ligne" au Pôle Européen. [PB, ThB, EC]

13 mars – Paris
Participation à titre d'expert à la réunion de la session de printemps de la section 01 "Mathématiques et outils de modélisation" du Comité Nationale du CNRS. [PB]

16 mars – Grenoble
Réunion d'information sur les "Marchés nationaux à bons de commandes", CNRS. [MM]

19 mars – Grenoble
Cours IUT - Information, Communication. [EC]

22-23 mars – Paris
Cours à Mediadix. [EC]

29 mars – Grenoble
Réunion d'information organisée par l'Agent Comptable /UJF : "Le point sur les questions financières pour tous les utilisateurs de NABUCO". [MM]

30 mars – Paris
Réunion projet européen DIEPER (Digitised European Periodicals)
"The Co-operative Library of d-Journals : How it Works". Workshop au Centre International ISSN. [LG]

5 avril – Grenoble
Réunion du Comité de Pilotage du projet d'études des étudiants-stagiaires de l'ENSSIB : projet NUMDAM. [ThB, EC, LG]

6-8 avril – Copenhague (Danemark)
Réunion du comité d'architecture. LIMES [CG]
Réunion des participants du projet LIMES [CG, LG]

12 avril – Grenoble
Réunion avec Mme Pauchet (Agent Comptable DR/CNRS) pour finaliser l'appel d'offres concernant le projet NUMDAM. [PB]

23 avril – Paris
Réunion RNBM/CMD (interrogations multi-bases, à propos du LGD). [PB, CG]

26-27 avril – Bordeaux
Conférence à la bibliothèque du Département de Mathématiques de l'université de Bordeaux. [PB]

3 mai – Paris
Réunion avec TOSCA Consultants concernant le projet NUMDAM. [ThB]

14 mai – Karlsruhe (Allemagne)
Réunion du Comité de Coordination du Zentralblatt-MATH. [LG]

14-17 mai – Metz
Participation au Congrès GUTenberg. [ThB, EC]

28 mai – Lyon
Deuxième réunion du 2e Comité de Pilotage du projet d'études des étudiants-stagiaires de l'ENSSIB : projet NUMDAM. [PB, ThB, EC]
Rendez-vous avec M. Franck Laloë, CCSD - Villeurbanne (Centre pour la Communication Scientifique Directe). [PB, ThB, EC]

30 mai – Paris
Réunion SDBib - Thèses en ligne. [PB]

19 juin – Grenoble
Réunion du 3e Comité de Pilotage du projet d'études des étudiants-stagiaires de l'ENSSIB : projet NUMDAM. [PB, ThB, EC, LG]

28 juin – Grenoble
Réunion de la commission "Documentation" de Grenoble Pôle Européen. [EC]

29 juin – Grenoble
Réunion d'informations organisée par l'Agent Comptable /UJF : "Le point sur toutes les questions financières : euro, code des marchés,…". [MM]

5 juillet – Paris

Réunion sur les questions sur les consortia thématiques (RNBM), plurithématiques, etc. [PB]

5 juillet – Paris

Réunion à la BNF avec et Thierry Cloarec, Catherine Lupovici, Dominique Maillet, Philippe Raccah, , Jean-Dider Wagneur. Texte de référence *"De l'accès aux documents mathématiques de Gallica et des coordinations avec d'autres programmes de numérisation"* www.math.sciences.univ-nantes.fr/~guillope/gal-math.html. [LG]

17 juillet – Lyon

Soutenance du projet d'études des étudiants-stagiaires de l'ENSSIB : projet NUMDAM. [PB, ThB, LG]

19 juillet – Lyon

Premier congrès Franco-Américain de Mathématiques / AMS-SMF. Participation à la table-ronde *"Imprimés mathématiques et numérisations"*. [PB, ThB, LG]

24-25 juillet – Grenoble

Jury Admissibilité pour le Concours externe IR/CNRS. [PB]

Annex

List Zentralblatt-MATH

Université de Besançon
Université de Bordeaux
Université de Brest
Université de Caen
Université Joseph Fourier
INPG (partiel)
Université de Rennes I
Université de St-Étienne
Université de Savoie
INRIA Rhône-Alpes
École Normale Supérieure de Lyon
Université d'Aix-Marseille I
Université d'Aix-Marseille II
Institut de Mathématiques de Luminy (CNRS)
CPT (CNRS)
CIRM (SMF-CNRS)
Université de Lille I
Université de Valenciennes
Université de Metz
Université de Nancy I
Université de Nantes
École Centrale de Nantes
École des Mines de Nantes
Université de La Rochelle
Université de Nice

INRIA Sophia Antipolis
Université de Paris 6
Université de Paris 7
Université de Paris-Sud
Institut Henri Poincaré (Centre Émile Borel)
École Normale Supérieure Cachan
École Normale Supérieur Ulm
École Polytechnique
IHÉS
École des Mines de Paris
Université de Créteil
Université de Cercy-Pontoise
Université d'Évry
Université de Marne-la-Vallée
Université de Versailles
École Nationale des Ponts & Chaussées
Université de Strasbourg
Université de Mulhouse
Université de Tours

BnF
CEA
CIMPA (Irak)
ICTP (Trieste)