

MAI: MetaOPAC Azalai Italiano

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Abstract

MAI (MetaOPAC Azalai Italiano) is a virtual union catalogue of Italian libraries developed through co-operation between the Italian Library Association (Associazione Italiana Biblioteche, AIB) and the Consorzio Interuniversitario Lombardo per l'Elaborazione Automatica (CILEA). This paper presents the components of the MAI and the organisational, management, planning and implementation tools developed by the team since 1999. MAI provides access to Italian OPACs, offering a directory and metasearch functionality. The search engine, Azalai, performs metasearching, which also involves a converter as part of the system. The architecture of the system, the search engine and converter, is based on a database in which all the Italian OPACs are recorded. Three different interfaces, designed for specific types of users, provide access to the system. Members of the MAI Editorial Board are responsible for keeping the database updated and this automatically generates the Directory of Italian Online Catalogues. MAI is divided into five distinct sections, integrated with a range of tools and services intended for different categories of user.

Wordcount: 5,226

1. Introduction

MAI (MetaOPAC Azalai Italiano) was initiated in 1999 as the virtual union catalogue of Italian libraries (De Robbio, 2002; De Robbio, 2003). It has been developed through co-operation between the Italian Library Association (Associazione Italiana Biblioteche (AIB)) and the Consorzio Interuniversitario Lombardo per l'Elaborazione Automatica (CILEA). AIB (www.aib.it) provides a range of services as would be expected from a national library association and one of these is a listing of Italian OPACs available on the Web. The Web site of AIB (known as AIB-WEB) is maintained by an Editorial Committee and its design follows the principles of the Web Accessibility Initiative (www.w3.org/wai). CILEA (www.cilea.it) is a non-profit organisation set up in 1974 for the purpose of providing ICT services to nine universities within the Lombardy region of northern Italy. CILEA has been active in many developments related to libraries, including the distribution of digital information sources, acting as a node of the Italian national library service or SBN (Servizio Bibliotecario Nazionale) and in digital library developments. The home page of the MAI Web site is shown in Figure 1 (www.aib.it/aib/lis/opac1.htm).

Take in Figure 1

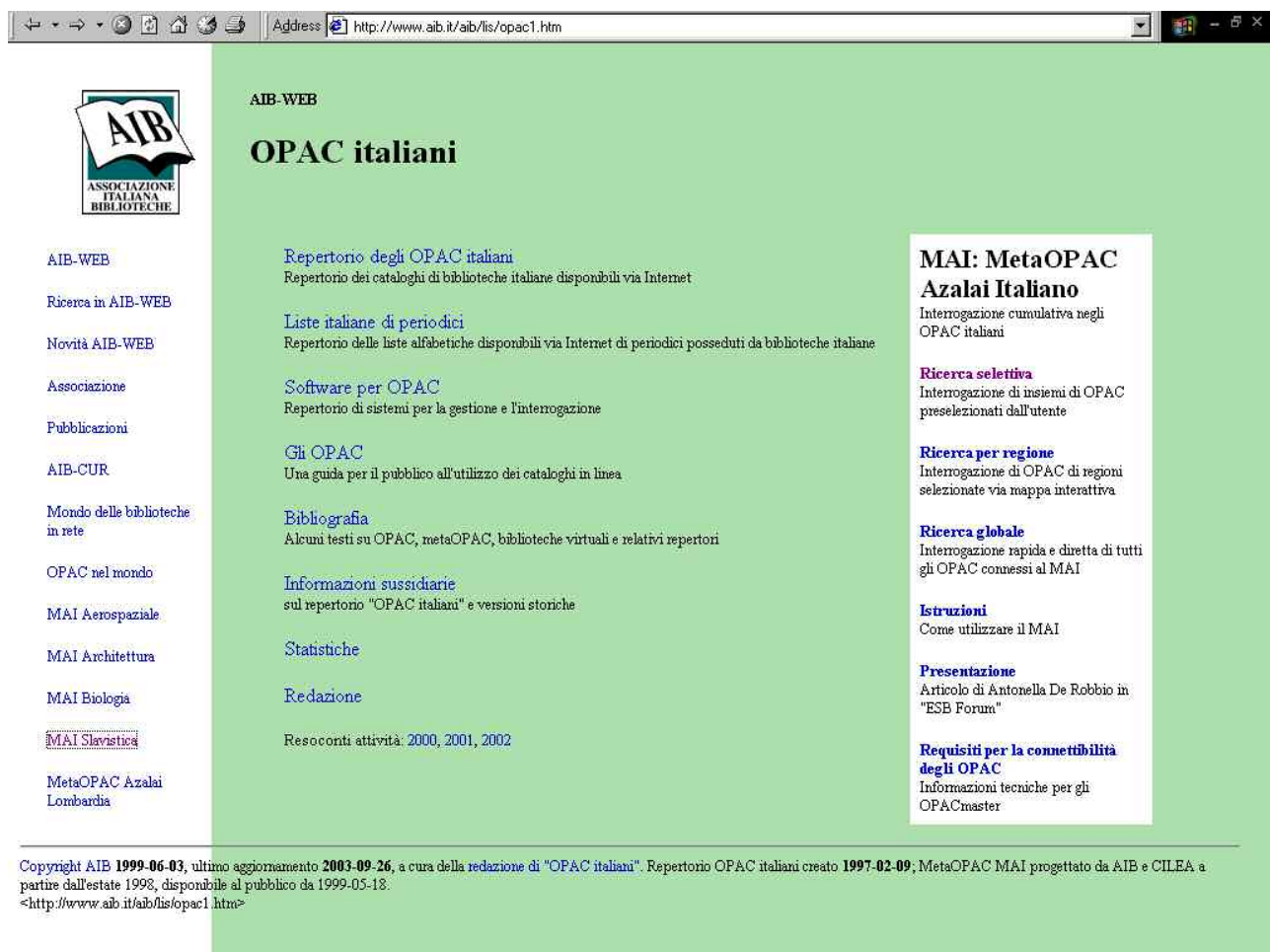


Figure 1 Home page of MAI

MAI provides services for a variety of different types of user. These have been identified by the MAI Editorial Board which is composed of:

- Italian OPAC staff (from AIB)
- CILEA MetaOPAC staff.

As Coyle (2000) from California Digital Library describes, there are many challenges and difficulties, both in the project management and the implementation phases in creating virtual directories, starting with existing catalogues. She notes that a virtual union catalogue is an alternative to the development of a centralised database of distributed resources found in many library systems, and that a virtual union catalogue would not be maintained in a single location, but would be created in real time, by searching each library's catalogue using the Z39.50 protocol.

The model of the metasearch system developed by MAI is, roughly speaking, a metaindex (distributed catalogue), with no central catalogue. The system queries a specified set of different OPACs through the Internet. It initiates simultaneous remote queries and sorts the results in a combined format. Users can choose the OPACs they wish to search and the system builds up the query and sorts results from the specific catalogues selected. This is achieved using the Azalai search engine which retrieves the information by exact terms, combined using the Boolean operator

AND. This design allows MAI to generate a lowlevel of retrieval ‘noise’. Figure 2 shows the page for identifying which catalogues should be selected for the search on MAI.

Take in Figure 2

MAI. Ricerca selettiva

una collaborazione tra AIB e CILEA

Interrogazione cumulativa nei cataloghi delle biblioteche italiane disponibili in Internet
Cumulative query in Italian Internet library catalogues

Sceita degli OPAC

Seleziona tra gli OPAC italiani quelli di tuo interesse, utilizzando le tre chiavi di ricerca disponibili: copertura geografica, tipologia di biblioteche, tipo di documenti [info](#)

☒ tutta Italia *
☐ specifica regione/i
☐ specifica provincia/e
☐ specifica comune/i

Indica le regioni, province o comuni italiani, separati da " , " (es.: lazio, abruzzo): [info](#)

tipologia di biblioteche:

tutte
- biblioteche pubbliche
- biblioteche statali
- biblioteche ecclesiastiche
- biblioteche scolastiche
- biblioteche di università
- biblioteche di enti di ricerca
- altre biblioteche [info](#)

tipo di documenti:

tutti
monografie
periodici [info](#)

Per segnalare problemi e malfunzionamenti ed inviarci commenti e suggerimenti vi invitiamo a scrivere a <azalai@cilea.it>.

* Comprese le aree extranazionali limitrofe di lingua italiana

Copyright AIB-CILEA 1997-1999. Repertorio degli OPAC italiani creato 1997-02-09; MAI progettato a partire dall'estate 1998, disponibile al pubblico da 1999-05-18. Questa pagina creata 1999-01-20;

Figure 2 Identifying which catalogues should be selected

Figure 3 shows an example of a search for items with Michelangelo in the Title field.

Take in Figure 3

MAI
MetaOPAC
Azalai
Italiano

MAI
Interrogazione degli OPAC

Stai interrogando 205 cataloghi, connessi al MAI, tra i cataloghi di tutta Italia, biblioteche di ogni tipologia, documenti di ogni tipo.

Immetti uno o più termini per almeno un campo di ricerca: [info](#)

TITOLO [info](#)

AUTORE [info](#)

solo risposte positive ☐ [info](#)

premere una sola volta e attendere

| AIB-WEB | Virtual Library CILEA | OPAC italiani | Ricerca selettiva | Ricerca globale | Ricerca per regione | Help |

Figure 3 Search form for items with Michelangelo in the Title field

Figure 4 shows the results from some of the catalogues searched.

Take in Figure 4

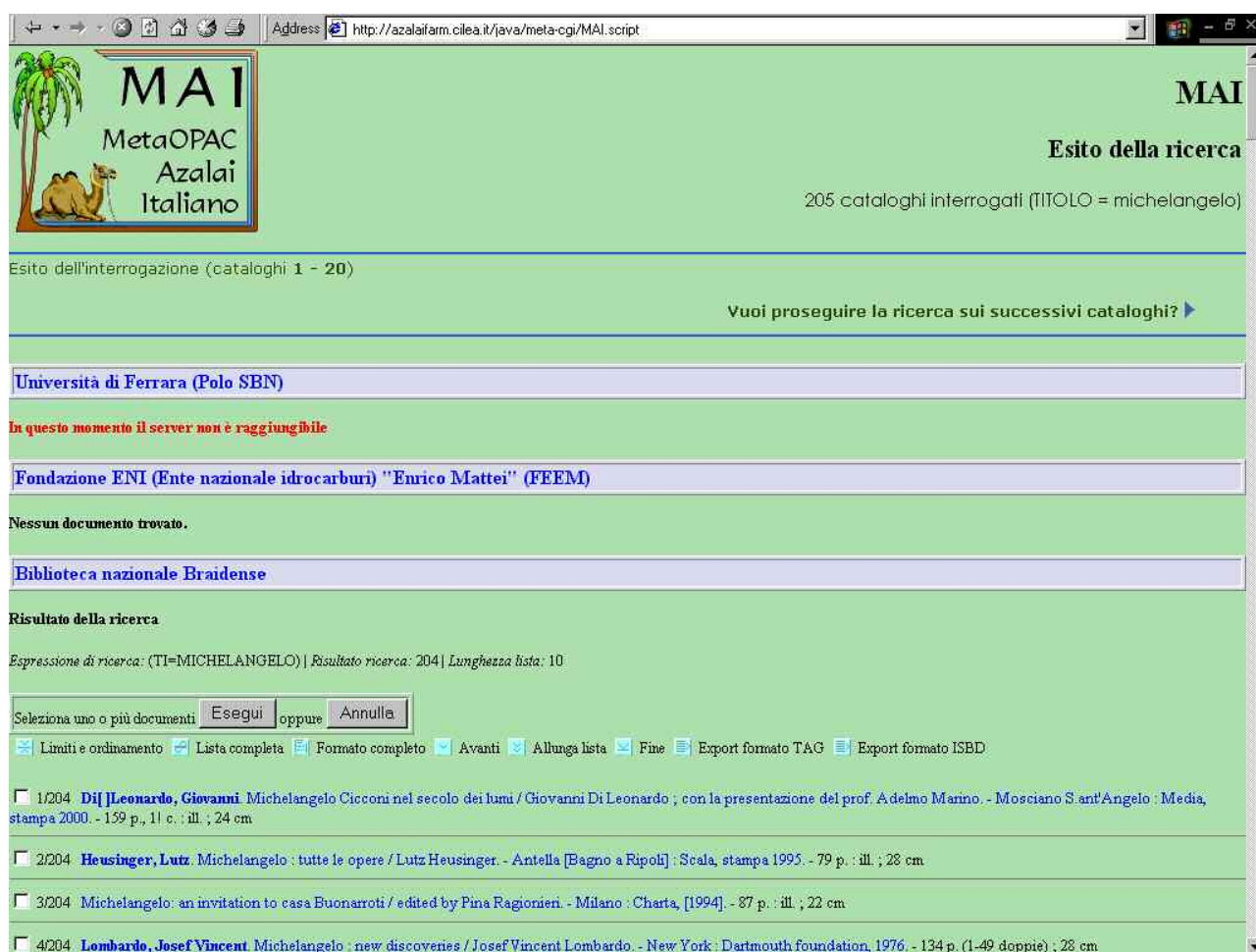


Figure 4 Results of a search on MAI

The choice of the retrieval system model followed a feasibility study that investigated, in particular, OPAC systems with a large number of records and users. The retrieval functionality required by users has gradually developed during the lifetime of the project.

MAI is also part of a project to catalogue the Italian OPACs. A detailed description of the cataloguing rules used for the Italian OPACs in MAI is provided by Gnoli (2000a). The MAI database, which contains the catalogued Italian OPACs, forms the core of the entire system.

The members of the MAI Editorial Board responsible for the development of MAI communicate the results of their activities through the mailing list AW-OPAC@aib.it. Moreover, to update the data, they have access to the database from the Web. Perugini (2001) describes the activities of the Editorial Board members and the criteria used to select and catalogue the OPACs and the rules for updating the MAI database.

MAI is not only a MetaOPAC which enables the parallel and simultaneous querying of interconnected Italian OPACs, but it is also a complex system that supplies information services and products both to librarians and to various groups of users. Thus, its primary role is to provide an access service to Italian OPACs. In addition, the system performs several other functions including being:

- a working tool for the Italian librarians;
- a service for end-users;
- a link between different players in the OPAC market;
- a registry office managing data on the Italian OPACs.

The access statistics (more than 6000 queries a day) show a massive use of the service. Managers of OPACs (sometimes called OPAC-Masters), as well as producers and system administrators have shown interest in MAI and have modified their OPACs to permit their connection to MAI. Rossi (2000) describes the technical requirements for connecting an OPAC to the MAI system.

2. The architecture and the tools of the system

MAI is a complementary tool to the Italian SBN catalogue. Giordano (2002) provides an overview of SBN and other co-operative developments within Italy. SBN comprises, in one catalogue, the bibliographic descriptions of the holdings of 1391 libraries and contains over 5.5 million catalogue records. This is the result of shared cataloguing by libraries at the SBN partner sites and of the uploading of data derived from the Italian National Bibliography, 1958-1984 (*Bibliografia Nazionale Italiana*), the *Bollettino delle opera moderne straniere acquisite dalle biblioteche statali* 1958-1980, and other library collections. MAI includes records for items that are not included in the SBN catalogue and so is a useful complement to SBN for those wishing to search catalogues in Italy.

The MAI architecture is divided into five distinct areas and integrated in a range of tools intended for different categories of users:

- technical tools
- work tools
- information tools
- search tools
- advanced search tools.

The technical and work tools are restricted to use by members of staff, whereas the information and search tools are intended for different groups of users. The final tool is aimed at advanced users.

Members of the MAI Editorial Board perform several activities, using various tools. The technical and organisational tools used could serve as a reference for others involved in developing digital libraries. The most significant contributions to the mailing list are archived along with FAQs (Frequently Asked Questions), cataloguing rules and planning papers.

We must underline the importance of the creation of a data dictionary, based on the technical papers of the MetaOPAC project, which permitted rational planning of the OPAC database and of the related system. The data dictionary and the service tags were fundamental steps in the conceptual design of the database.

3. MAI system activities

The MAI system performs a number of internal and external activities both of which have helped in the development of Italian OPACs. The co-operation with software vendors made it possible to connect several OPACs of different types to the MAI system, thus increasing the number and the variety of searchable items. Feedback from users was useful in improving the system by making it more user-friendly so as to satisfy their needs, both professional and generic. For this reason, the products are similar, but they are customised according to the needs of specific sets of users. The different MAI 'products' are given in the vertical menu on the left-hand side of the screen shown in Figure 1. Clicking on the option for the MetaOPAC in the aerospace sector results in a screen as shown in Figure 5.

Take in Figure 5

Address <http://www.cira.it/servgen/metaopac/aerospaziale.htm>

MetaOpac Aerospaziale
Catalogo collettivo di biblioteche del settore aerospaziale

Il MetaOpac Aerospaziale nasce dalla collaborazione del CIRA con CILEA-AIB. E' un prototipo a cui aderiscono le più importanti biblioteche accademiche del settore aerospaziale. Il prototipo prevede, nel breve termine, l'adesione di altre biblioteche, di enti e di imprese.

Immetti uno o più termini per almeno un campo di ricerca: [info](#)

AUTORE [info](#)

TITOLO [info](#)

Queste condizioni sono poste su tutti i cataloghi selezionati.

SOGGETTO [info](#)

Questa condizione vale "solo per i cataloghi che la supportano"; gli altri cataloghi saranno interrogati utilizzando solo i termini immessi nella maschera superiore.

[ANNULLA](#) [INVIO](#)

[AIB-WEB](#) | [Virtual Library CILEA](#) | [OPAC italiani](#) | [Ricerca selettiva](#) | [Ricerca globale](#) | [Ricerca per regione](#) | [Help](#)

Figure 5 Search screen for the MetaOPAC in the aerospace sector

The 'behind-the-scenes' activities consist of the following:

- Italian OPACs database management. In this internal management system all the OPACs are catalogued and described as complex digital objects. New libraries, closed ones, new sections or interfaces are listed here.
- Connectivity management. The MAI Editorial Board receives several requests for new connections or for changes and it monitors accesses to the assigned area.

External functionality offered by MAI can be divided into two types: search tools and information tools on the Italian OPACs. The latter consist of:

- Italian OPACs Directory (www.aib.it/aib/opac/repertorio.htm). This is automatically generated and updated from the database. It includes all the OPACs listed by region (i.e. the 20 regions of Italy) and the list of the national union catalogues.
- List of OPACs connected to MAI.
- InfoOPAC records. Each record describes one OPAC giving all relevant information from the database as shown in Figure 6.
- Context-sensitive MAI help, accessible during the search process.
- Online help for the public, explaining (in Italian) how to use the online catalogues (Gnoli, 2000b)

- References page listing full-text articles (in Italian) and directories concerning OPACs, MetaOPAC concepts and virtual libraries.
- Annual activity reports for the MAI service.

Take in Figure 6



Figure 6 Example of information about OPACs included in MAI

During 2002 the way searching an OPAC through MAI operated was completely revised. In particular, the revision involved altering flags that represent critical points during searching such as the selection of bibliographic level (mainly monograph or serial). This is a key function that deserves special attention. The revision resulted in considerable improvements to the Azalai search engine, successfully applying new filters to 90 OPAC connections, thanks also to the local OPACs, which progressively tidied up their search configurations.

4. The search tools

The search tools area consists of three metasearch interfaces, differentiated to satisfy diverse users with varied needs:

- Selective search (www.aib.it/aib/opac/mai.htm). This interface presents two options:
 - SHOW OPACs to display the list of the selected OPACs, and to select/deselect the catalogues;

- ❑ **SEARCH** to search within the selected catalogues, without displaying them.

This is the search interface shown in Figure 2.

- Search by region (www.aib.it/aib/opac/mai3.htm). This graphical interface, represents a simplified map of Italy and its regions. By selecting a region, all the related catalogues will be selected, and MAI will create dynamic interfaces showing the records contained in the database. This interface is shown in Figure 7.

Take in Figure 7

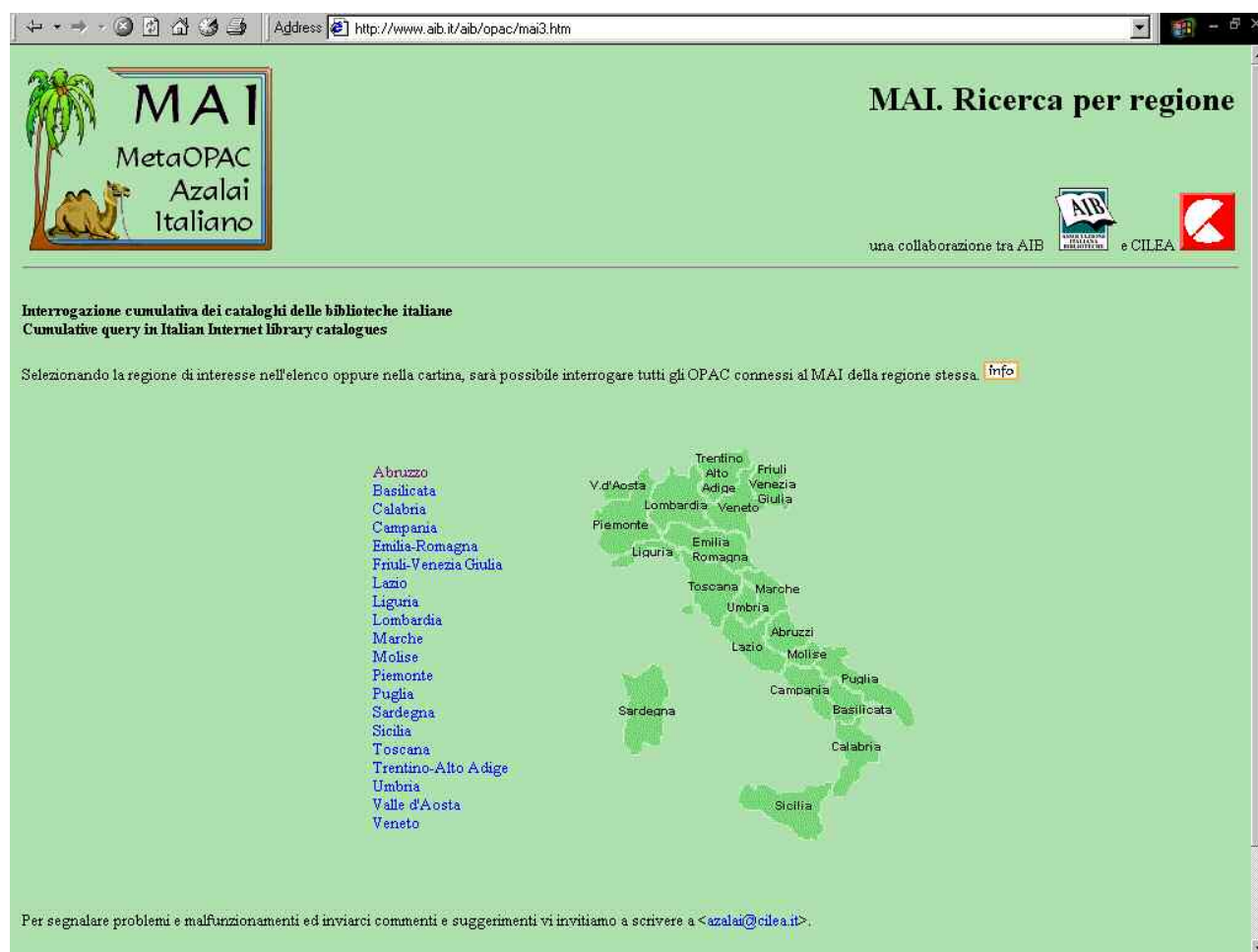


Figure 7 Graphical interface to select search of regional catalogues

- Global search (www.aib.it/aib/opac/mai2.htm). From this interface all the connected OPACs may be rapidly queried. A single page with all the hits will be presented as was shown in Figure 4 which was the result of a search of the 205 different catalogues currently connected to MAI.

Briefly, the metasearch follows these steps:

- the user makes a bibliographical query;
- the system receives the query, transforming it for each particular OPAC system;
- the system sends the queries to all the individual OPACs;
- the system receives the results in synchronised order and shows them to the user.

The Azalaisearch engine is responsible for the metasearching and it queries the OPACs connected to the MAI system. The connection to the OPACs is activated following technical instructions encoded in some specific fields of the database.

The metasearch engine is part of the Azalai software responsible for controlling, via the Internet, the simultaneous parallel query of OPACs and collection of responses. Its main characteristic is its independence from the MetaOPAC service provided by the remotely interfaced OPAC services. In order to connect OPACs with the required technical features, another component is necessary: the Azalai converter. This component runs queries on the remote OPACs, transforming the user's request as part of a query URL that suits each different OPAC.

The Azalai software's flexibility allows the implementation of customised interfaces for specific users or disciplines. In co-operation with the Coordinamento Nazionale delle Biblioteche d'Architettura (CNBA), MAIA, the Italian MetaOPAC for Architecture, has been developed. MAIA is a specific application comprising 59 specialist catalogues covering architecture materials.

To date, the MAI database resides on a UNISYS ES5085 computer, with eight 550 Mhz XEON processors and 4Gb RAM, a 200 GB hard disk and the Windows NT 4 Server Enterprise operating system. The database was implemented using the Microsoft SQL Server 7 DBMS and ASP (Active Server Pages) libraries from the Microsoft Internet Information Server 4 Web server. The Azalai software was developed using Java. It is resident on a SUN Ultra 2 2.x 200 Mhz, running the Sun Solaris 2.7 operating system and the Java™ 2 Runtime Environment, Standard Edition (1.3.0). OPAC parallel simultaneous querying is achieved by using multi-threading techniques.

5. The MetaOPAC model

As in the case of the OPAC, the implemented MetaOPAC system makes searches using certain fields (such as title, author). However, instead of being indexed fields for a known database, these fields are virtual metaindexes. As the user fills in the search form with bibliographic request data and then starts up the MetaOPAC system, the MetaOPAC considers several remote bibliographic systems that are completely separate one from each other, and each of them has its database with indexes and the Web application. So the MetaOPAC system has no local database of its own, but implements a 'virtual' bibliographic union catalogue.

Implementing such a system involves:

- from the design point of view, definition of the virtual metaindexes;
- from the implementation point of view, using available, relevant indexes on the remote systems.

Issues arising from varying cataloguing standards and levels of completeness found in multiple bibliographic OPAC systems, are addressed by the MetaOPAC system's virtual indexes. So, even though the bibliographic description is not directly part of the main mechanism of the MetaOPAC it is used to configure this mechanism.

The MetaOPAC uses nine metaindexes:

- title
- author
- subject

- date of publication
- publisher
- ISSN/ISBN
- series
- Dewey Decimal code
- 'all fields'.

The MetaOPAC model specifies indexes flexibly, with a minimum set of indexes mandatory for the local OPAC to enable it to connect to MetaOPAC, plus suggestions for optimal local indexing. So, in order to be valid for the MetaOPAC system, the indexed fields of an OPAC have to:

- include title and author fields at least;
- map consistently to the metaindexes, in several ways.

For example, the mapping, not described in detail here, only involves the main part of the title. Furthermore, indexed fields in the OPAC should:

- be searchable fields (fields for search refinement are rejected);
- be combined with the Boolean AND operator.

A final, distinctive, characteristic of the metaindex information retrieval provided by the MetaOPAC system model is that the search method uses exact terms. In order to retrieve documents that are not easily located in Italy, the main aim of MAI, searching using exact terms eliminates retrieval 'noise'.

Thus the MetaOPAC system information retrieval model requires:

- exact term (no truncation and no proximity for any word) retrieval available for each field;
- Boolean operator AND available for searching several fields;
- TITLE and AUTHOR fields available as a minimum.

To date, implementation among the Italian OPAC systems connected to MAI of the seven non-mandatory fields is as follows:

Subject	76%
Publisher	53%
Date of publication	53%
All fields	49%
Dewey Decimal Code	38%
Series	32%
ISSN/ISBN	21%.

The use of the virtual catalogue, and session activity, is growing. MAI currently searches a third of all Italian OPAC systems. Compared with other options for finding documents in Italy, and with regard to the retrieval objectives only, it takes its rightful place alongside the main Italian bibliographic systems – the Index System (<http://opac.sbn.it/>) of the Italian Union Catalogue in the National Bibliographic Service (SBN), and the Italian Serials Catalogue (Archivio collettivo nazionale delle pubblicazioni periodiche – acnp.cib.unibo.it/cgi-ser/start/it/cnr/fp.html) The MetaOPAC user can choose the set of the OPAC systems to search. In this case, the flexible metasearch dynamically processes data using only the available fields and it shows only these actual fields to the user: some fields are present in all the local OPAC systems used, while other fields are present in only some.

The Azalai software, implemented by CILEA form etasearching, searches OPAC servers via the HTTP protocol, by building dynamic OPAC query URLs, and returning results to the client as soon as they are available (synchronisation). To meet its two objectives, Azalai consists of a general-purpose network search engine, and a second component designed for querying OPACs, which is a converter (a sort of translator).

The MetaOPAC system thus performs as an intermediary program which acts as both a server and a client for the purpose of making requests on behalf of other clients, but requests are not serviced by merely passing them on to other servers. Implementing both client and server sides, the system translates the request, splitting it into many dynamic URLs, activating them via the Web. It then collects incoming responses and sends them to the client.

The results of simultaneous search sessions from the databases of OPAC systems, very dissimilar as regards database structure, type and software, are returned by the MetaOPAC system to the user in the form of their full content, irrespective of the form of the hypertext dynamic URL lists, so the user can review the desired data as soon as possible.

The MetaOPAC is intended to be a metaindex system. It searches a pre-selected set of distributed database systems, each with its own independent management. Each local system's retrieval indexes are exposed in a defined way to provide a specific set of behaviour and responses. Every connected OPAC system also has an additional interface that is homogeneous and to a large extent common to all Italian OPAC systems.

The converter is a single module that builds any type of URL. The technical problem is therefore how to manage structured strings of characters. The module was designed by analysing the general structure of a bibliographical metasearch, divided into four parts:

- a part needed to set the key;
- a part needed to set the search operator for an 'exact term' match;
- a part needed to connect the term/terms – the values entered by the user ;
- a part to combine all these terms using the AND operator.

Each of the four parts is produced by multiple choice code, grouping instructions and relating them to the models without any code redundancy.

In order to meet new objectives, the converter module is often extended, especially as a result of Italian OPAC systems implementing various features and frequently updating software. The number of Italian OPAC systems is continuously expanding, as is the range of OPAC software in use. The design was chosen in order to meet the project's requirement for frequent updating. The technical design of the converter module allows the MetaOPAC system to be flexible so as to

- make searches using only the subset of fields actually filled in on the form by the user;
- recognise the available fields in a specific OPAC system;
- build URL models only for a subset of the nine fields.

The implemented MetaOPAC system is a rather simple application of the Azalai software, originally designed to achieve greater flexibility in OPACs' retrieval functionality: more Boolean operators (OR and NOT) used to combine fields, and a further option to truncate terms. The national application fixes the options based on the chosen national model in accordance with its goals.

Once a URL model has been developed in the converter module, the connection of a new OPAC to the MetaOPAC system depends simply on dates being entered into the database. No more software is needed, either in the Azalai server or the remote OPAC server. The technical data required are specific for each OPAC. They are:

- the code of the URL model to build;
- the Web address of the OPAC application to search dynamically;
- the set of URL parameters that are constant and not context-dependent (the URL tail);
- the names of the exposed indexes in the remote database;
- the Web address to produce absolute URLs for html pages sent by the OPAC application.

The growing virtual catalogue and session activity therefore require mainly just minor adjustment of technical data for each new connection, and no update of the converter module is needed, except when the new OPAC system connection requires the production of a new form of dynamic URL.

6. The MAI database and the Italian OPACs cataloguing

The Azalai engine is based on the catalogue of Italian OPACs, namely the MAI database. The database was designed by Italian librarians working with CILEA data processing staff, both belonging to the AIB-WEB Italian OPACs Editorial Board. “From a *librarianship* point of view, the maintenance of the MetaOPAC requires metacataloguing, cataloguing of the catalogues it comprises, in order to differentiate them according to their most relevant characteristics, to provide selection and search functions. Establishing pragmatic rules for the description and treatment of the OPACs was necessary for effective and coherent management of the variety of situations” (Gnoli, 2000a).

In order to catalogue an OPAC, completely describing it in all its parts (relating to the formal ontological idea of an OPAC), it is necessary to be familiar with its features, both the manifest and the hidden ones, since the data have to be translated into a form that can be processed by the Azalai search engine.

The record fields could be included for the following three reasons:

- they are useful to the librarian’s work (the entire record);
- they are fields visible to the user (the InfoOPAC form);
- they are Azalai function fields (interface fields).

The cataloguing rules for Italian OPACs take into consideration the following aspects: location of the cataloguing unit, form of headings and the granularity of the record, defined at three levels (OPAC level, section level of section, interface level). The cataloguing unit location leads back to the holdings of one specific library or library system. The properties in the database relate to the need to differentiate between disciplines and for more general data like geographic location or the type of institution, which would allow search refinements according to different kinds of users. The observance of minimal rules for the format of headings, which are used alongside results from other sources, allows users to obtain clear and complete records in the catalogue and as a result of a MetaOPAC search. Figures 8a,8b and 8c show completed records at the three levels for an item in the MAI database.

MAI - Visualizzazione Opac - Netscape

http://bdmai.cilea.it/up_opacbro.asp?copac=1618&stopac=padova&sce=bro&csce=xxx Search

SCHEDA OPAC

Intestazione dell'OPAC:	Università di Padova + Biblioteca universitaria di Padova (SBN. Polo universitario veneto)
Tipo di Catalogo:	Catalogo collettivo
Pagina informazioni sul catalogo (URL):	http://www.cab.unipd.it/cataloghi/informazioni.php3
Pagina Elenco Biblioteche (URL):	http://www.cab.unipd.it/biblioteche/
Tipologia delle biblioteche:	Biblioteche pubbliche, Biblioteche statali, Biblioteche ecclesiastiche e di comunità religiose, Biblioteche di università, Biblioteche di enti di ricerca, Opac SBN
Interfaccia Web:	<input type="radio"/> No <input checked="" type="radio"/> S?
Connessione al Meta OPAC:	<input type="radio"/> No <input checked="" type="radio"/> S?
Livello di copertura:	Regionale
Citt? di copertura:	ASIAGO, VICENZA, FELTRE, LEGNARO, MONSELICE, PADOVA, ROVIGO
Provincia di copertura:	
Regione di copertura:	VENETO
Flag-monografie:	<input type="radio"/> No <input checked="" type="radio"/> S?
Flag-periodici:	<input type="radio"/> No <input checked="" type="radio"/> S?
Flag-altro materiale:	<input type="radio"/> No <input checked="" type="radio"/> S?
Note:	
Note visibili:	
E-mail OPAC Master:	mailopac@www.cab.unipd.it
Data Creazione (mm/gg/aaaa):	4/6/99
Data Ultima modifica:	1/6/04
Compilatore:	DEROBBIO

Document: Done (0.453 secs)

Figure 8a MAI database: first level (OPAC information level) of the University of Padova InfoOPAC record

MAI - Visualizzazione Sezione - Netscape

http://bdmai.cilea.it/up_sezibro.asp?csez=8008copac=161&stopac=padova&sce=bro Search

SCHEDA SEZIONE dell'OPAC

OPAC:	Università di Padova + Biblioteca universitaria di Padova (SBN. Polo universitario veneto)
Intestazione della Sezione:	Periodici elettronici
Flag-monografie:	<input checked="" type="radio"/> No <input type="radio"/> S?
Flag-periodici:	<input checked="" type="radio"/> No <input type="radio"/> S?
Flag-altro materiale:	<input type="radio"/> No <input checked="" type="radio"/> S?
Altro materiale:	Periodici elettronici
Catalogo completo:	<input checked="" type="radio"/> No (porzione) <input type="radio"/> S? (completo)
Note:	
Note visibili:	
Data creazione:	5/6/02
Data ultima modifica:	6/10/02
Operatore:	DEROBBIO

Torna all'elenco Torna alla scelta

Document: Done (0.297 secs)

Figure 8b MAI database: second level (sections level) of the University of Padova InfoOPAC record

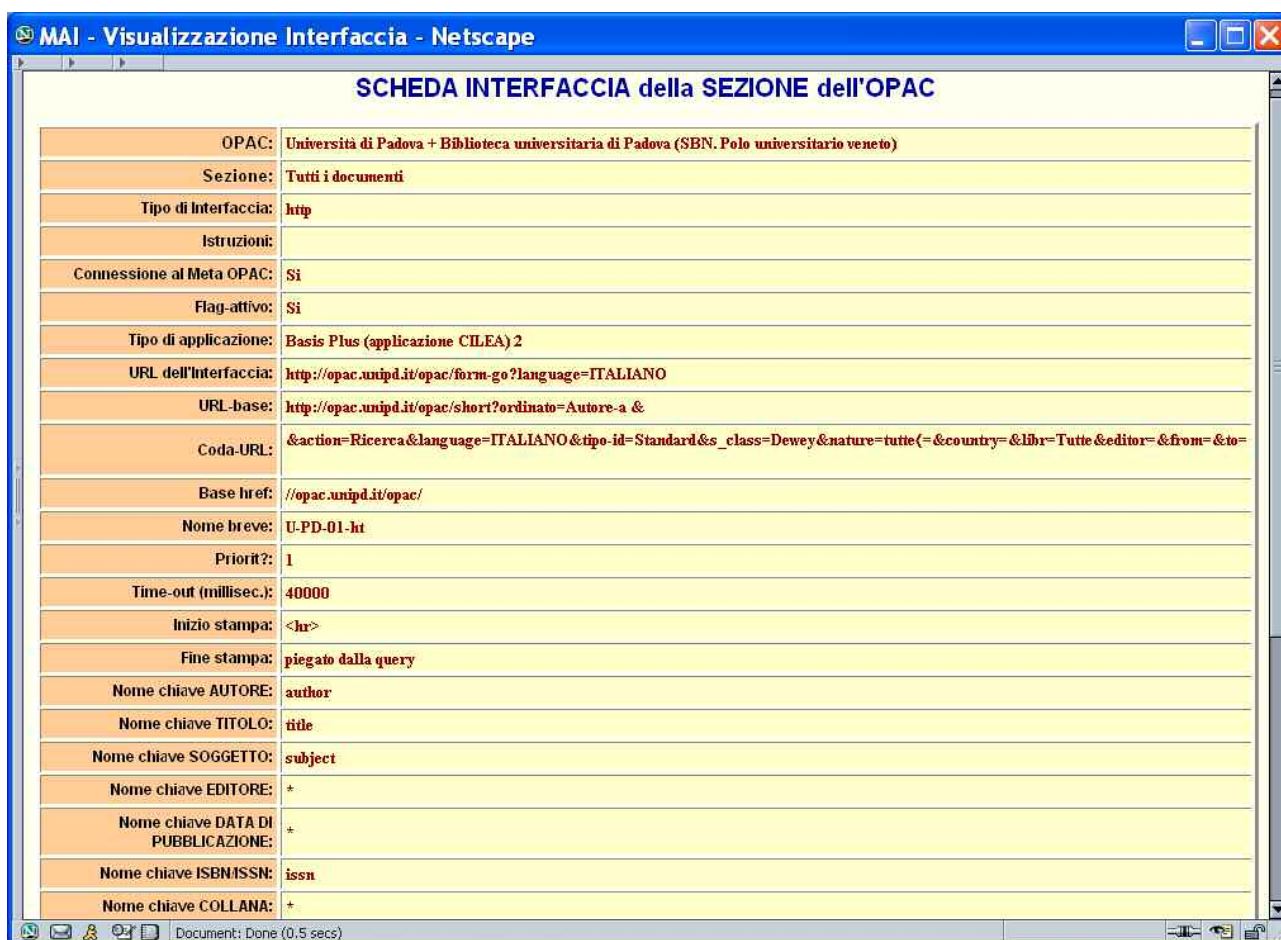


Figure 8c MAI database: third level (connection level) of the University of Padova InfoOPAC record

Questions of granularity arise from the way in which OPACs can be subdivided into parts: for any OPAC we can separately access the whole system, or individual parts, and different material types (monographs, periodicals, etc) or media (paper, microfilm, CD-ROM, etc.) or discrete searchable collections. The method of access can vary as well, and every OPAC or part of it may have one or more interfaces with different addresses (URLs). Inside the database every record related to one OPAC unit represents that specific OPAC and describes it in three sections using a total of 60 fields:

- OPAC data (title, geographic area, level of coverage, type of content, notes): 19 fields;
- section data (a breakdown of the OPAC into identified groups, the entire OPAC and its members): 11 fields;
- interface data (access, URL, technical data, query field data): 30 fields.

The database currently contains 649 OPACs of which Italian university OPACs represent 32%. Library co-operatives account for 41% of the OPACs, 40% of the OPACs are in city areas whilst 32% are in provincial areas, and 23% are in regional areas, while the rest are spread throughout Italy. The numbers of OPACs in schools have developed significantly since 2001, reaching 10% of all Italian OPACs by 2003. The annual growth in OPACs, in 2003, is about 10%. During the last two years, 2002 and 2003, public library OPACs, covering city or provincial areas also increased in number. The OPACs in the database are subdivided into seven categories:

- public libraries (271 OPACs)
- state and government libraries (30 OPACs)

- church and ecclesiastical libraries (53 OPACs)
- school libraries (53 OPACs)
- university and academic libraries (203 OPACs)
- libraries of research institutions (95 OPACs)
- other libraries (116 OPACs).

Recently, a new field was added to the database structure, 'classification by library category', which allows users to further personalise their metasearching. This new field replaced the old 'library type', which only allowed a very broad selection of three areas: special libraries, general libraries, mixed type libraries. Each OPAC was assigned one or more labels representing its 'library category'. This identification resulted in a more complete and accurate mapping of Italian OPACs. The MAI database now has new functionality which on the one hand gives us a more flexible management tool for statistics extraction and reporting, outputting OPAC data sorted by library category; and on the other hand allows the user also to select OPACs by category, using the 'Selective' metasearch interface.

This further search refinement will considerably lighten network workload, very heavy at the moment, mostly since the release of the Global metasearch interface. This is by far the most popular function for all users, including librarians. Selection by library category can be used together with the existing options: that is by administrative area type (region, province, municipality) and by bibliographic level (monographs, serials, all).

From an access point of view, most OPACs use the http protocol (94% of the total offer directory connections; 99% of the OPACs offer at least one http connection), followed by telnet connections (5%). Z39.50 connections are stable (roughly 10), while telnet connections have been reduced and gopher services have been removed. The new system for implementing OPACs, the JavaISIS client/server system, is not widespread, with just one current example.

There are currently 210 OPACs connected to MAI, some of which represent a single library OPAC, and some are shared OPACs within a particular city, province or region. The software used within the library management systems of all these OPACs is various and includes international 'products' (such as Aleph, VTLS), members of the CDS/ISIS 'family' of software made available from Unesco (such as WinISIS), database management systems and specifically developed Italian packages. The Italian libraries virtual union catalogue is the result of connecting the OPACs to MAI. The set of connected OPACs creates the so-called 'virtual catalogue'. Compared with SBN (the National Bibliographic Service catalogue) it is neither a physical union catalogue nor a cataloguing co-operative, since it is based on a distributed model, with connections to remote catalogues that reside on different hardware at different physical locations. A unique virtual environment is created by the network and therefore some overlap is inevitable. MAI search tools, namely its search interfaces, facilitate simultaneous cross-search of the heterogeneous set of catalogue records that form the connected OPACs.

8. Conclusions

The MAI system has achieved great popularity as a tool accessible to everyone. Access statistics, available since 2002 on the Italian OPACs' Directory homepage, underline the strategic relevance of the services offered by the MAI system to users entering the AIB Web site. In 2002 the three interfaces reached an average of 140,000 visits per month, almost 5000 visits daily. From the statistics it is clear that users favour global rather than selective searches, as these allow 'quick and dirty' queries against all the connected OPACs and 62% of queries start with a global search, 17%

from the search by region and only 21% from the selective search, which should offer better facilities for selecting OPACs to achieve more precise results.

Reflecting on the whole process of MAI implementation as a service system allows us a better comprehension of these tools, and of their different origins, applications, complexity, diffusion of both the old and the new ones. Such considerations show future scenarios and likely paths we could take. The Italian OPACs Editorial Board intends to evaluate future activities with a view to producing new tools and services. Administration of the OPACs is a major concern, in particular as database technology improves. A lack of critical market research on library automation products, resellers and, consequently, the entire Italian OPAC market leaves us with a lack of data, which combines with difficulties in comparing products. The MAI database is the only resource available to investigate which management system Italian libraries use, including all Italian OPACs, even though it was designed for other purposes. MAI is intended for querying OPAC interfaces, so it is interested in the software applications, rather than library management systems categories.

A broadening of its interest in that direction might involve the participation of other players in the OPAC market, in particular vendors and resellers, as well as the institutions running OPACs. MAI might be useful as a benchmarking tool for OPACs, since its core is the OPAC database, which could be enhanced with data on the Italian OPAC market.

Identifying MAI's potential and planning new developments are part of a continuous evolutionary process, since MAI is a national level service inevitably looking outwards towards Europe.

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