ACNP: a real union catalogue and many virtual catalogues for DDS in Italy
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**Introduction**

ACNP is the Italian union catalogue of serials. It is located at [http://acnp.cib.unibo.it/cgi-ser/start/en/cnr/fp.html](http://acnp.cib.unibo.it/cgi-ser/start/en/cnr/fp.html). It contains the bibliographic descriptions of serials held by Italian libraries.

The catalogue has been promoted and carried out by the Institute for Studies on the Research and Scientific Documentation (ISRDS) since the 1970s. At that time Italian libraries used to send print cards with serials titles and holdings to CNR, which was in charge of populating and updating data into the catalogue. CNR produced several print catalogues (union catalogue, single catalogues and local multi-library catalogues). An online catalogue was also available under WAIS, periodically updated with a batch procedure.

Since 1988, the Interlibrary Centre of the University of Bologna has agreed with CNR to make the catalogue available online using its Information Retrieval system. In 1995 ISRDS-CNRS and the Interlibrary Centre signed an agreement to carry out together the Italian Union catalogue of Serials. CIB was responsible for the applications and for librarian training. CNR was responsible for checking and carrying out the necessary amendments or enhancements to bibliographic descriptions proposed by libraries. Furthermore, it checks and validates new bibliographic descriptions (proposed by libraries) and titles captured from ISSN.

**Some data**

Today the catalogue is fed by 2,507 libraries of different kinds: academic, public, corporate, and special libraries, and has reached 743,500 holdings. Since 1993 the number of libraries participating in the catalogue has increased from 1804 to 2507.

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The catalogue has been populated with 134,700 ACNP records. The working database for librarians has 1,193,400 records downloaded from the ISSN Register available to be captured.

Actually, libraries participating in the catalogue derive records from the ISSN Register and add their holdings. If the record is not present in the ISSN Register, a library makes a proposal which is then validated by the Italian ISSN Centre and finally sent to the International ISSN Centre for registration into the ISSN International Register.

ACNP is an integrated catalogue because it not only offers serials descriptions and holdings, but also information about the libraries holding them, business hours, services, and document delivery terms and procedures.

Single libraries, institutions and library networks can participate in the catalogue. If a library already has an electronic catalogue of serials with several titles, it can be uploaded with a batch procedure on ACNP, using ISSN and holding information.

**Electronic serials**

Electronic serials have been available in ACNP since 2002. It was decided that electronic serials would always require a specific record, even when print and electronic serials had the same ISSN. We thought this approach could permit us to handle better links to the appropriate information about holdings and services having different registration for different media. We were not sure that it was the correct solution, however during the twenty-second Meeting of Directors of ISSN Centres, May 27-30 held in Budapest in 1997, we were glad to hear the “reaffirmation of the existing policy of assigning separate ISSN to serials issued in multiple physical formats. Each format, including online versions, will continue to be issued a separate ISSN”.

The catalogue started when electronic serials did not exist. It has been necessary to modify records’ structure to take into account electronic serial requirements. The following fields have been added:

- Edition (electronic, print…) "on-line (remote)"
- A link to a URL which can be the serial’s home page (if it exists), or the publisher’s home page or any other relevant open access page
- A link to different editions of the same journal (for instance to the corresponding print journal): "Titoli collegati: HA PER ALTRO SUPPORTO: *20 century British history*"

![Figure 1: An electronic journal in ACNP](http://www3.cup.co.uk/tweceb/)

By clicking on **FULL TEXT** users can see:

- Years to which users can access (corresponding to holdings for print journals)

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3 See [http://acnp.cib.unibo.it/cgi-ser/start/it/cnr/co-p.tcl](http://acnp.cib.unibo.it/cgi-ser/start/it/cnr/co-p.tcl) for further data about ACNP.
4 [http://www.loc.gov/catdir/lccn/lccn0509.html#2](http://www.loc.gov/catdir/lccn/lccn0509.html#2)
5 For this paragraph, see Alessandra Citti *Il sistema ACNP e i suoi utilizzi nelle biblioteche*, in “Bibliotime”, anno VII, numero 1 (marzo 2004), [http://www2.spbo.unibo.it/bibliotime/num-vii-1/citti.htm](http://www2.spbo.unibo.it/bibliotime/num-vii-1/citti.htm)
ACNP users might have different conditions of access depending on their IP. Therefore they must first select their library or consortium to access papers. Users at the University of Bologna will select the FULL TEXT available for CIPE Consortium.

A single journal might be available at different URLs also for a single University, if it has acquired different years from different sources. This happens for instance when back years have been digitalised by specific projects, whereas recent years might be accessible from the publisher or a subscription agency.

For instance, users at the University of Bologna can access *American Journal of Mathematics*

- for the years 1(1878)-117(1995); on JSTOR by clicking on CIPE
- for the years 118(1996) n. 1- on MUSE, by clicking on Unibo.

**ACNP and OPEN URL resolvers**

The solution of including different links for full access, depending on the way each institution accesses electronic resources as for *Accounts of chemical research* was the easiest for librarians, but not the most practical for users. Adopting an Open URL revolver would show to users only the "appropriate copy", which means the copy the user has the right to access.
Since the beginning of October, ACNP has an Open URL source and target\(^6\). The University of Bologna adopted SFX\(^7\), but many other Open URL resolvers are available and can be interconnected with ACNP. For instance, users searching for Science with ACNP before October or from Institutions not having an Open URL resolver, will see the following result and will have to select the correct link to access full text (subscription agency for some institutions, the publisher …).

![Science (Washington, D.C.)](image)

**Bo015 Biblioteca Area della Ricerca CNR di Bologna**

<table>
<thead>
<tr>
<th>V. P. Gobetti, 101, 40129 Bologna, tel: 051/639028, fax: 051/6390130</th>
<th>E-mail Biblioteca</th>
</tr>
</thead>
<tbody>
<tr>
<td>Il servizio di document delivery è sospeso dal 7 agosto all’1 settembre 2006</td>
<td>Fornitura Documenti</td>
</tr>
</tbody>
</table>

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**GIPE Cooperazione Interuniversitaria per i Periodici Elettronici**

**Posseduto:** 1996-
- Dettaglio Posseduto: 274 (1996) n. 5294-
- FULL TEXT HighWire - American Association for the Advancement of Science
  - (Accesso riservato utenti autorizzati)

**Posseduto:** 1880-1997,
- FULL TEXT JSTOR
  - (Accesso riservato utenti autorizzati)

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**M1213 Biblioteca IRCCS Fondazione Centro San Raffaele del Monte Tabor**

<table>
<thead>
<tr>
<th>via Olgettina, 58, 20139 Milano, tel: (02)26.432760, fax: (02)26.432761</th>
<th>E-mail Biblioteca</th>
</tr>
</thead>
<tbody>
<tr>
<td>Posseduto: 1995-</td>
<td>Fornitura Documenti</td>
</tr>
</tbody>
</table>

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**Figure 5: Several links to FULL TEXT for different institutions**

Users of the University of Bologna searching for *Science* 1095-9203, can see the link to SFX and will not have to select the correct link to full text.

![Science (Washington, D.C.)](image)

**American Association for the Advancement of Science**

<table>
<thead>
<tr>
<th>Biblioteca</th>
<th>Ind</th>
<th>Full Text</th>
<th>Doc Delivery</th>
<th>Servizio online</th>
<th>Titoli collegati</th>
</tr>
</thead>
</table>

![Science (Washington, D.C.) (ON LINE)](image)

**American Association for the Advancement of Science**

<table>
<thead>
<tr>
<th>Biblioteca</th>
<th>Ind</th>
<th>Full Text</th>
<th>Doc Delivery</th>
<th>Servizio online</th>
<th>Titoli collegati</th>
</tr>
</thead>
</table>

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**Figure 6: New ACNP: link to SFX**

By clicking on SFX link, they will see all services available for the University of Bologna users: full text, access to different databases etc. As it appears in Figure 7, for Science FULL TEXT on

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publisher’s site, back issues on JSTORE are available, but also access to Journal Citation Report and Ulrich’s database.

Figure 7: FULL TEXTs and other services available for University of Bologna users

ACNP is not only a source for OPEN URL resolvers, but also a target, therefore if a user of the University of Bologna finds articles on subscribed databases, he will find the link to SFX, as in figure 8. By clicking on it, he will access either the ACNP catalogue or the electronic journal, if a subscription to that journal exists for the University of Bologna.

2. Use of circulation statistics and interlibrary loan data in collection management
Knevel, Jennifer E; Wicht, Heather; Connaway, Lynn Siliponi
College & Research Libraries; 67 (1) Jan 2006, pp. 35-49
... the holdings, circulations, and interlibrary loan (ILL) borrowing requests of the English-language monograph collection at the University of Colorado at Boulder. Data for each area were mapped to conspectus subject areas, using …

Figure 8: A record from Lisa - Library and Information Science Abstracts: link to SFX

Some virtual special opacs
Some library networks, for instance Medical & Health Sciences, Veterinary libraries, Astronomy libraries and Social and economic sciences network of Piedmont found that ACNP could offer virtual special opacs to their scholars (see figures 9-11).
This permits them to offer a service and to be part of a national network, without the burden of developing and maintaining a catalogue.

**TOCS and indexing services**

Electronic serials available in the catalogue include free access serials which librarians considered interesting for their users and also some serials available on open archives\(^8\). The University of

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\(^8\) Further information on open archives at [http://www.openarchives.org/documents/FAQ.html](http://www.openarchives.org/documents/FAQ.html) "The Open Archives Initiative develops and promotes interoperability standards that aim to facilitate the efficient dissemination of content. The
Bologna has decided to catalogue also some valuable and ancient serials which are being digitised within the Digital Library project. For instance, if we search *De Bononiensi scientiarum et artium Instituto atque Academia commentarii*, a serial published in the 18th Century, we can see a link to *Accesso pubblico alla rivista* (public access to the journal).

<table>
<thead>
<tr>
<th>Periodico/Rivista</th>
<th><em>De Bononiensi scientiarum et artium Instituto atque Academia commentarii</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ente/Autore (Marc 710)</td>
<td>Accademia delle Scienze dell'Istituto di Bologna</td>
</tr>
<tr>
<td>Editore</td>
<td>Bononiensi scientiarum ed artium Institutum atque Academia</td>
</tr>
<tr>
<td>Luogo pubbl.</td>
<td>Bologna</td>
</tr>
<tr>
<td>Da anno - Ad anno</td>
<td>1731-1791</td>
</tr>
<tr>
<td>Lingua</td>
<td>ITA</td>
</tr>
<tr>
<td>Periodicità</td>
<td>IRREGOLARE</td>
</tr>
<tr>
<td>Paese</td>
<td>IT</td>
</tr>
<tr>
<td>ISSN:</td>
<td>1102-4150</td>
</tr>
<tr>
<td>Cod.CNR:</td>
<td>P 00050101</td>
</tr>
<tr>
<td>Fonte</td>
<td>ACNP</td>
</tr>
<tr>
<td>Supporto:</td>
<td>Printed text</td>
</tr>
<tr>
<td>Accesso Pubblico alla rivista:</td>
<td><a href="http://diglib.cb.unibo.it/?pid=1&amp;ntresID=58991&amp;formate=jpg&amp;seqnum=1&amp;yr=16&amp;y=3">Link</a></td>
</tr>
<tr>
<td>Titoli collegate:</td>
<td>POF: <em>Nuovi commentari academae scientiarum Institutii Bononiensis</em></td>
</tr>
</tbody>
</table>

Figure 12: *De Bononiensi scientiarum et artium Instituto atque Academia commentarii* on ACNP

By clicking on such link, users can access the journal.

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Open Archives Initiative has its roots in an effort to enhance access to e-print archives as a means of increasing the availability of scholarly communication". Document Version 2002/06/10T11:00:00Z (site last accessed on the 30th August 2006).

For this paragraph, see Alessandra Citti, *Nuovi bisogni per nuovi servizi*, in “Bibliotime” anno VI, n. 2 (luglio 2003), [http://didattica.spbo.unibo.it/bibliotime/num-vi-2/citti.htm](http://didattica.spbo.unibo.it/bibliotime/num-vi-2/citti.htm)
Figura 13: De Bononiensi scientiarum et artium Instituto atque Academia commentarii

By clicking on Indici ("Tocs") users will have the following result:

La ricerca find articoli where facsimile='122-4150' sort by level, facet_key/DESCEND, pagina _int_num/ASCEND ha
Si mostrano 100 riferimenti a partire da 1

Selezionare un intervallo [1-100] oppure rifini la ricerca sulle Annate Precedenti

Annate selezionate 1998-2002

1. Brunelli, Giovanni Angelo; Cantarani, Sebastiano
   De bimane Amaranum,
   De bononiensi scientiarum et artium Instituto atque Academia commentarii, 70, 1791, pp. 23 - 24 , full-text
2. Bibiena, Antonio; Cantarani, Sebastiano
   De hierarchia,
   De bononiensi scientiarum et artium Instituto atque Academia commentarii, 70, 1791, pp. 24 - , full-text
3. Brunelli, Gabriele; Cantarani, Sebastiano
   De locutione anatome, deque reptilium organo audit.
   De bononiensi scientiarum et artium Instituto atque Academia commentarii, 70, 1791, pp. 24 - 25 , full-text

Figura 14: De Bononiensi scientiarum et artium Instituto atque Academia commentarii: TOCs
Serials check-in

ACNP is integrated with the Serials check-in system, which permits librarians to capture serials descriptions from the catalogue and end users to be informed about issues actually available in libraries. Check-in system is a project carried out and maintained by the Interlibrary Centre at the University of Bologna and is offered to all libraries participating in the catalogue.

If an end user clicks on a serial and then on "Libraries", it can see libraries holdings, as we can see in figure n. 16.

**Figure 16: a library holding Sapere in ACNP**

By clicking on Last issues he can see which issues are available and which are expected (Fig. 17).

**Figure 17: Issues received, expected and temporary not available in ACNP**

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Issues not yet received appear as “atteso” (expected). Issues already received appear as “ricevuto” (received). Issues sent to binding or temporarily not available appear as “temporarily not available.”

To make check-in quicklier and to reduce human errors, search and check-in can be made not only by searching the title or ISSN and typing issues’ data, but also by reading the bar code with a bar code reader. The programme recognizes both SICI and EAN\(^\text{11}\). Such standards are more and more often printed on serials issues. Since both bar codes contain ISSN and enumeration data, clicking on such codes permits us to fill in all fields necessary for issues identification.

If we analyze SICI (Serial Item Contribution Identifier) - the standard ANSI/NISO Z39.56-1996 - we can see that it contains all necessary information to check-in issues.

<table>
<thead>
<tr>
<th>Item segment</th>
<th>Contribution segment (article…)</th>
<th>Control segment</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISSN</td>
<td></td>
<td></td>
</tr>
<tr>
<td>chronology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enumeration</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ISSN 0886-9383</td>
<td>(200112) 15:10</td>
<td>&lt; &gt;</td>
</tr>
<tr>
<td>CSI Code structure identifier</td>
<td>In the example, it has been omitted by the publisher</td>
<td></td>
</tr>
<tr>
<td>DPI Derivative part identifier</td>
<td>In the example, it has been omitted by the publisher</td>
<td></td>
</tr>
<tr>
<td>MFI Medium/form at</td>
<td>In the example, it has been omitted by the publisher</td>
<td></td>
</tr>
<tr>
<td>Standard version n.</td>
<td>1</td>
<td>K</td>
</tr>
<tr>
<td>Check char.</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

**Figure 18: SICI code for Journal of Chemometrics, Dec. 2001, vol. 15, n. 10.**

The left part of the code – the item segment – is the relevant part for checking-in. ISSN retrieves univocally the serial. Chronology and enumeration identify the issue. The librarian has the possibility to add further data, for instance a specific title for a monographic issue, and then has to confirm.

SICI, in figure 18, identifies *Journal of Chemometrics*, whose ISSN is 0886-9383. Chronology identifies December 2001 and enumeration refers to volume 15, issue 10.

**DDS**

Information about holdings and issues actually received are essential also for the DDS, because librarians can check which library has already received an issue before asking for an article. ACNP is the main resource Italian and foreign librarians and scholars use to locate a journal, to find information about it or its services and to request DDS. In August 2006, ACNP was added in Karlsruhe Virtual Catalog KVK and in September ACNP had 200,000 accesses from Karlsruhe.

ACNP does not require libraries to have specific procedures or software for DDS. Participating in the union catalogue only implies that a library offers DDS. Libraries are free to offer it at the conditions they consider appropriate, using any technical solution. Since libraries participating in ACNP are academic, research, public, and company libraries, they have different requirements, regulations and technological facilities. Therefore ACNP does not force them to adhere to a unique DDS module or unique DDS terms.

To facilitate DDS, the catalogue has been linked to the most common products adopted for DDS in Italy: ICCU ILL and NILDE.

ICCU is the Istituto Italiano per il Catalogo Unico located at the National Central library in Rome. It is responsible for the Italian union catalogue of serials and monographs called SBN. Actually, in Italy

\(^{11}\) SICI standard is available at [http://www.niso.org/standards/standard_detail.cfm?std_id=530](http://www.niso.org/standards/standard_detail.cfm?std_id=530), for EAN bar code, see [http://www.eanbarcodes.com](http://www.eanbarcodes.com)
we have a union catalogue of serials – ACNP – and a union catalogue of monographs – SBN -, which contains also serials. The ICCU module was originally produced for SBN, but is now also interconnected with ACNP. The module carried out by ICCU has been offered not only to libraries participating in SBN, but also to Italian libraries asking to adopt the module and to offer DDS/ILL service. 284 libraries have adopted this module. ILL SBN is an open system which can be interconnected with local loan systems and international DDS. It records requests, generates statistics and permits us to track requests and therefore to check if an item has been processed. ILL SBN took into consideration the functional and technical solutions adopted for the European project AIDA (Alternatives for International Document Availability) which experimented the international standards ISO ILL 10160 - ISO ILL 10161 12.

Another Document delivery system in use in Italy is NILDE. “NILDE (Network Inter-Library Document Exchange) is an Internet-based Document Delivery System which has been developed at the Research Area of Bologna Central Library within the framework of a National Research Council (CNR) project in order to take advantage of new Internet technologies and promote cooperation among CNR and Italian university libraries 13. NILDE was tested between 2000 and 2002; since 2004 several libraries have accepted to share a 'set of good practice' rules about mutual cooperation and efficiency in Document Delivery.

NILDE allows libraries to:
- send requests to a specific lending library (this operation is facilitated if the library participates in ACNP, to whom NILDE is dynamically linked);
- manage all the received requests;
- send requested documents in a secure way via Internet, or fax or surface mail;
- archive all transactions, in order to provide statistical reports;
- get accounting reports, based on a 'reciprocity' policy established among libraries which agree to cooperate.

NILDE supports secure electronic delivery via Internet by means of a file-uploading/Web-server; this very simple user interface assists libraries in retrieving requested documents. The file uploading allows us to send large size documents, therefore resolving problems that users may encounter with e-mail agents.

Today NILDE accounts for more than 500 libraries among Italian academic and research institutes and the number of exchanges is about 100,000 items per year 14.

To make the presentation more concrete, I will show how the service appears to catalogue users. After searching a serial, a librarian clicks on "Doc. Delivery" to see the terms and conditions of the services offered by all libraries holding the journal.

Figure 19: The journal Sapere in ACNP

In the case of the journal Sapere many libraries hold the title. If we click on the symbol representing DDS, we can see that Centro Servizi e Biblioteca C.S.B. has selected two possible ways of receiving ILL requests: ICCU module or e-mail.

12 http://www.iccu.sbn.it/genera.jsp?id=65#caratteristiche
13 See http://nilde.bo.cnr.it/
If we go back to the catalogue, the librarian might first check if the issue where the article he is interested in has already been received in the library, then will select either ILL ICCU service or e-mail.

By selecting ICCU module the serials title is automatically copied into the ICCU form.

Figure 20: ACNP and link to ICCU ILL module

The librarian has then to input the article’s data and confirm the request.

Other libraries such the Biblioteca Centrale dell’Università del Molise have selected NILDE as preferred DDS/ILL system.

Figure 22: ACNP and link to NILDE module

NILDE is interconnected with ACNP, therefore by clicking on NILDE the serials title is captured in NILDE form and as for SBN ILL system the librarian has only to add articles data and confirm the transaction.
New services
I will only mention some new services, to show how the catalogue is evolving.

Server Z39.50
New ACNP’s OPAC is integrated with a z39.50 server, which answers to queries having z39.50 protocol. Any z39.50 client can send queries to it.

New output formats
ACNP’s OPAC has different output formats. As well as html, users can select:
- xml output: research output is shown in xml output.
- xml_short output: it is a format shorter than the above. Instead of holdings a link to holding page is supplied (in html format).
- Marc21 ascii output.
- Marc21 xml output.
- Marc21 output (which permits to download records Marc21 in binary format).
- Dublin Core xml output: output in xml format with Dublin Core tag.

ACNP has been evolving to meet user requirements and to become an integrated tool that provides access to a wide range of resources and services. Electronic serials were added to the catalogue in 2002 and a direct link to full text - or direct links when more points of access were available - were added to facilitate users. Integration with Serials check-in was carried out to offer a tool both to librarians and to end users. Agreements and interconnections with the most adopted DDS services in Italy are a further result of integration.
New register of libraries

The new register of libraries is a project aimed at supplying information about different kinds of libraries and institutions in Italy. The aim of the project is to produce a regularly updated resource easy to access, to facilitate ILL and DDS at international and national level.

The quality of the service depends on the quality of the information available. For this reason the database is a cooperative product which permits us to make available data already present in the different institutional systems.

The description and the formalization in XML format will be based on open standards. The final project will adopt the following standards:

- Identifying data (ISO 15511 ISIL)
- General information, address, contacts, … (ISO 2146);
- Functional and managing relations (ISO 2146);
- Participation in programs, projects and networks (ISO 2146);
- Services to users (ISO 2146);
- ILL/DD services and terms of access (ISO 2146, ISO 8459, ISO 10161, national standards);
- Resources and local data necessary to handle data (extension of ISO 2146 scheme, compiled with ISO 2789);
- Statistical information and quality indicators (ISO 2789, ISO 11620).

The register and the interface have been developed using open-source modules, largely adopted at international level and open-source available.

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15 A description of the project (in Italian) is available at http://registro.cib.unibo.it:8080/registro/Info.jsp