

# University of Michigan

## Digital Library eXtension Service

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### OVERVIEW

The University of Michigan Digital Library eXtension Service (UM DLXS) offers a suite of resources designed to aid educational and non-profit institutions mount a variety of types of digital library collections. The University of Michigan conceived the SGML Server Program (SSP) in 1996 to serve a growing need for institutions like Michigan to put encoded text collections online. Since that time, a number of changes have taken place in the search engine marketplace, and the University of Michigan has strengthened its digital library production operations. The newly reconfigured UM DLXS replaces the SSP and offers both a search engine and a set of tools for mounting digital library resources. The search engine, XPAT, is specially designed to handle large and highly structured documents and metadata such as that found in digital library efforts. The tools that UM DLXS makes available are designed to tap the power of the XPAT engine for broad classes of resources consistent with digital library activities. The University of Michigan UM DLXS is a cost-recovery operation; fees charged by the UM DLXS are intended to cover ongoing development, maintenance, and support activities directly associated with the UM DLXS.

### SEARCH ENGINE

The XPAT engine is an SGML-aware search engine that the University of Michigan has deployed with an extremely diverse set of digital library resources. XPAT is based on the search engine previously marketed by Open Text as OT5™, and sometimes referred to as “Pat” and “Pat5.0.” The University of Michigan has licensed the code in order to undertake distribution and support, as well as to add functionality. Because of XPAT’s origins and the extent to which it has been employed in University of Michigan digital library projects, we are confident about the search engine’s reliability, its core functionality, and many aspects of its scalability. As currently distributed (September 20, 2000), XPAT provides excellent support for word and phrase searching, indexing of SGML elements and attributes, fast retrieval, and open systems integration. As part of the UM DLXS, the University of Michigan Digital Library Production

Service has launched a continuous development process in which we hope to add a number of features to XPAT. The capabilities being pursued are:

- support for indexing validating XML-encoded documents (i.e., basic XML awareness)
- object code (“binaries”) for additional operating systems
- the addition of “regular expression” searching (e.g., internal wild-cards)
- indexing of Unicode

XPAT is licensed by the University of Michigan on a per-computer basis, with an initial one-time fee of \$15,000 for the first instance of the search engine.<sup>1</sup> Support for XPAT is available as part of the UM DLXS (see below); XPAT is also available without support. Please see below for pricing information.

## **SUPPORT**

Support for the XPAT engine is offered solely through membership in the UM DLXS. The XPAT engine is extremely versatile, and while documentation for a wide range of applications is provided as part of the licensing, the University of Michigan is only able to support those digital library applications undertaken within the Digital Library Production Service (DLPS) with the XPAT engine. Support (and pricing for support) for XPAT is designed around this core set of applications. The mechanisms for support are discussed further below.

## **Class Middleware**

The UM DLXS distributes and supports several modules, each based on the evolving DLPS “classes” and “behaviors.” The UM DLXS seeks to enable digital library activities. To this end, significant resources are devoted to developing and supporting access mechanisms for many types of collections found in the digital library (e.g., page image based books with associated OCR, and SGML/XML encoded books and journals). Significant classes include a class for monograph length books (both modern and historical), a class for images and image metadata, a class for finding aids, a class for bibliographic information, and a class for encyclopedic reference works. A large and growing set of behaviors (such as types of searches and browses) is applied to these classes. Both the classes and behaviors are being documented, and information is available online (see <http://www.umdl.umich.edu/dlxs/docs/>). Middleware to support these classes and behaviors is distributed through the UM DLXS, and support for this middleware is provided as a component of the program. This class-based approach will replace previous collection-specific middleware. DLPS is committed to a continuous process of developing this middleware, adding functionality as needs are identified and as the WWW matures as a delivery mechanism.

## **On-call Support**

On-call support is provided primarily through e-mail, though telephone and postal contacts are provided for member institutions as well. A table of UM DLXS contacts is provided below. We will provide an e-mail acknowledgement of all e-mail received at [dlxs-help@umich.edu](mailto:dlxs-help@umich.edu) within 24-hours of receipt. We are not able to provide a timetable for resolution of problems, but we are sensitive to the fact that the tools and services made possible by the UM DLXS are used in

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<sup>1</sup> The University of Michigan is bound under contract to pay a portion of each fee to Open Text.

production services, and that prompt resolution of problems is critical to the viability of these services. E-mail queries go to a group of staff members to ensure that problems are widely communicated, and that the most appropriate DLPS staff member receives the question. Office staff, who are more readily available, receive telephone queries and subsequently relay queries by e-mail to groups of staff to ensure a prompt and appropriate response.

## **Training**

As a part of UM DLXS, the University of Michigan offers inexpensive summer workshops for participants, guiding programmers and digital collection managers in the application of the UM DLXS code base in putting collections online. Current plans (based on previous demand) are to offer these workshops at no charge, with transportation, food, and lodging being handled by the participants. We are able to accommodate one representative from each member institution for each workshop, but will consider special requests for more than one representative on a space-available basis. We will initially offer two workshops each year, both tentatively scheduled in summer. One workshop is geared to the needs of programmers; one workshop is geared to the needs of managers of digital collections. Each requires a high level of technical skills. More workshops will be offered based on demand. For more information, see <http://www.umdl.umich.edu/dlxs/training/>.

## **RELEASE SCHEDULE**

The preliminary release schedule detailed below is intended to provide UM DLXS products to member institutions as quickly as possible. The University of Michigan makes a strong effort to test each product, and solicits feedback from a number of user communities to ensure that the products meet basic needs. We will continue to detail products and release schedules online at: <http://www.umdl.umich.edu/dlxs/products/>. XPAT is currently available. XPAT with UM DLXS modifications will be available by mid-2000. All three major class search modules—Text class, Image class, and Finding Aid class—will be available as Beta releases in 1999-2000, with version 1 releases of the Text and Image class middleware scheduled in this period as well.

## **FEES**

Costs to subscriber organizations will consist of one-time fees for the software license, and an ongoing cost for support as part of the UM DLXS. **A one-time cost of \$15,000 is charged for licensing XPAT.** This entitles the subscribing institution to install XPAT on a single server.<sup>2</sup> Additional copies of the search engine will be available to the licensing institution at a reduced rate. **Support for the search engine will be charged at a rate of \$5,000 per year,** regardless of the number of installations of the search engine. Support is made available to a single designated representative of the institution. The rate of \$5,000 per year is applied to the first representative/membership within an institution; additional memberships within a single institution are charged at a lesser rate.<sup>3</sup> Should an institution choose to discontinue participation

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<sup>2</sup> The University of Michigan will not implement mechanisms to police institutions, but evidence of a violation of the XPAT contract will result in suspension of the institution's license and forfeiture of XPAT. The University of Michigan is contractually compelled to enforce compliance with the terms of the XPAT license through our agreement with Open Text.

<sup>3</sup> For example, if a large institution wishes to install additional search engines in other parts of the organization at the lower rate, it must either use a single designated representative for all support, or it may pay fees for additional representatives and thus secure support for each of these representatives.

in the UM DLXS, it may continue to use XPAT and is still bound by the terms of the license for the XPAT engine. An institution that has ceased its membership in UM DLXS may also keep middleware received under its membership, but is no longer entitled to updates of middleware or support for that middleware.

XPAT	first instance, per single computer	\$15,000
XPAT	subsequent instances, per single computer	\$12,000
UM DLXS membership	first representative, per year	\$5,000
UM DLXS membership	Each additional representatives within an institution, per year	\$3,000

### **ELIGIBLE SUBSCRIBERS FOR UM DLXS**

The University of Michigan is legally entitled to sell the XPAT engine to other institutions or organizations in the “vertical market represented by other academic institutions and non-profit/not-for-profit organizations.” As part of the process of purchasing the XPAT engine, an institution or organization will be required to provide evidence of its non-profit status (e.g., 501 (3c) certification). It is worth noting that while the XPAT engine is extremely versatile, the primary focus of the Digital Library Production Service is in creating and sustaining digital library applications, and thus the service will be focused on those applications. For example, DLPS’s primary “classes” of resources (supported through the XPAT engine) are monographs (current and historical), bibliographic resources, and image collections; future efforts will focus on journals and encyclopedic reference works. We invite the participation of all types of non-profit organizations, but can best support those with missions consistent with those described here.

### **SUPPORTED ENVIRONMENTS**

The UM DLXS and XPAT are currently available for a number of UNIX environments. Participants must acquire and install server hardware and Web server, as well as Perl (version 5.004 or above). Further information about configuring the Web server is provided online at <http://www.umdl.umich.edu/dlxs/environment.html>. In the future, other resources such as Oracle may be required for specific functionality (e.g., managing journal subscription information). The UM DLXS tools have been tested and used on most major Web servers, including Netscape Commerce Server, Apache, and Stronghold. As of September 20, 2000, currently tested operating systems include:

<b>Operating system</b>	<b>Versions</b>
Solaris	5.5.1 or above
SunOS	4.1.3

We have a continuing commitment to supporting additional platforms and environments for XPAT and DLXS, but cannot assume we can test all platforms currently available. Please contact [dlxs-help@umich.edu](mailto:dlxs-help@umich.edu) to inquire about the availability of XPAT binaries for other operating systems, support for new platforms, or to share with us your experience testing DLXS on new platforms.

## **CURRENT SSP SUBSCRIBERS—PAST OPEN TEXT INVESTMENTS**

Most current SSP subscribers have licensed one or more versions of the Open Text software and may have concerns about an additional licensing fee for XPAT. It is important to emphasize that this is a fee for new software, and that though the software is based on OT5™, the University of Michigan is making extensions and enhancements that we will then support. Please contact John Price-Wilkin (see below) to discuss concerns and pricing for XPAT. Current SSP subscribers will be supported at the fee rate and for the duration stipulated in their SSP agreements; that is, the introduction of the UM DLXS will not represent an interruption in service or a fee increase within the current agreement period.

## **HOST SERVICES**

The University of Michigan Digital Library Production Service also offers host services for digital library collections. These services, previously a part of the SSP, are not a part of the UM DLXS. (The UM DLXS is oriented specifically to support local collection access mechanisms.) We would be pleased to discuss host services with interested institutions. Among the arrangements currently supported are fee-for-service host services for licensed collections, contract services for non-profit publishers wishing to disseminate publications on a subscription basis, and no-charge arrangements for hosting freely available digital library collections. For more information, please contact John Price-Wilkin (see below).

## **CONTACTS AND FURTHER INFORMATION**

<b>Subject</b>	<b>Contact name</b>	<b>Phone</b>	<b>E-mail address</b>
Contract for XPAT and Institutional Agreement for UM DLXS	Pat Hodges	734 764.8016	phodges@umich.edu
Contracts & agreements also online:	<a href="http://www.umdl.umich.edu/dlxs/forms/">http://www.umdl.umich.edu/dlxs/forms/</a>		
General information regarding UM DLXS and XPAT	John Price-Wilkin	734 764.8074	jpwilkin@umich.edu
Assistance with UM DLXS resources, including XPAT	(Various staff)	734 647.8000	dlxs-help@umich.edu

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