Feasibility Study Report

Project Title:
Integrated Library System Replacement

Project Number: _________

California State Library
June 2006
# Feasibility Study Report
## Integrated Library System Replacement

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Feasibility Study Report
ILS Replacement

List of Appendices

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B. Detailed Cost Estimates, Proposed Solution
C. Detailed Cost Estimates, Alternative 1
D. Organization Charts
E. Work Breakdown Structure
F. Project Timeline
G. Glossary
H. Project Team Profiles
I. IT Procurement Plan (ITPP)
Department Name
California State Library

Project Title (maximum of 75 characters)
Integrated Library System Replacement

Project Acronym  Department Priority  Agency Priority
ILS REPL         1               N/A

APPROVAL SIGNATURES

I am submitting the attached Feasibility Study Report (FSR) in support of our request for the Department of Finance's approval to undertake this project.

I certify that the FSR was prepared in accordance with State Administrative Manual Sections 4920-4930.1 and that the proposed project is consistent with our information technology strategy as expressed in our current Agency Information Management Strategy (AIMS).

I have reviewed and agree with the information in the attached Feasibility Study Report.

Chief Information Officer
Deborah A. Newton
Date Signed: 6/19/06

Budget Officer
Liz Peralta
Date Signed: 6/19/06

Department Director
Susan H. Hildreth
Date Signed: 6/20/06

Agency Secretary
N/A

Printed name:
INFORMATION TECHNOLOGY PROJECT SUMMARY PACKAGE

SECTION A: EXECUTIVE SUMMARY

1. Submittal Date
   June 20, 2006

2. Type of Document
   Project Number
   - FSR
   - SPR
   - PSP Only
   - Other:

3. Project Title
   Integrated Library System Replacement
   Project Acronym: ILS REPL
   Estimated Project Dates
   Start: 7/1/07
   End: 6/30/09

4. Submitting Department
   California State Library

5. Reporting Agency
   California State Library

6. Project Objectives

   - Avoid unacceptable risks of failure of CSL's mission-critical system, associated with using unsupported COTS software on a discontinued hardware platform.
   - Preserve and build upon the investment in automated information services made in 1989/90 with the installation of the original system.
   - Continue to support and improve the information services the CSL provides to state government and California libraries.

7. Proposed Solution
   CSL proposes to replace its current Integrated Library System (ILS) system with a commercially available system procured via a competitive RFP process and to locate the replacement system in CSL's main computer room.

8. Major Milestones

<table>
<thead>
<tr>
<th>Milestone</th>
<th>Est Complete Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>RFP released</td>
<td>9/4/07</td>
</tr>
<tr>
<td>Contract established for ILS replacement</td>
<td>7/1/08</td>
</tr>
<tr>
<td>Hardware installed; Network modified</td>
<td>11/14/08</td>
</tr>
<tr>
<td>Data conversion &amp; policy files completed</td>
<td>1/23/09</td>
</tr>
<tr>
<td>Workflow documented &amp; training completed</td>
<td>3/27/09</td>
</tr>
<tr>
<td>Implementation Day, all modules</td>
<td>4/3/09</td>
</tr>
<tr>
<td>Post-implementation training completed</td>
<td>6/30/09</td>
</tr>
</tbody>
</table>

   Key Deliverables
   - System implementation consulting srvcs: 10/31/08
   - Hardware & software licenses delivered: 11/7/08
   - Data converted from old ILS: 3/31/09
   - Pre-implementation training: 3/31/09
   - Final database load services: 4/2/09
   - Post-implementation training: 6/30/09
## Section B: Project Contacts

### Executive Contacts

<table>
<thead>
<tr>
<th>First Name</th>
<th>Last Name</th>
<th>Area Code</th>
<th>Phone #</th>
<th>Ext.</th>
<th>Area Code</th>
<th>Fax #</th>
<th>E-mail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agency Secretary</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dept. Director</td>
<td>Susan Hildreth</td>
<td>916</td>
<td>654-0266</td>
<td>916</td>
<td>654-0064</td>
<td><a href="mailto:shildreth@library.ca.gov">shildreth@library.ca.gov</a></td>
<td></td>
</tr>
<tr>
<td>Budget Officer</td>
<td>Liz Peralta</td>
<td>916</td>
<td>445-9875</td>
<td>916</td>
<td>445-9285</td>
<td><a href="mailto:lperalta@library.ca.gov">lperalta@library.ca.gov</a></td>
<td></td>
</tr>
<tr>
<td>CIO</td>
<td>Debbie Newton</td>
<td>916</td>
<td>653-4023</td>
<td>916</td>
<td>653-4422</td>
<td><a href="mailto:dnewton@library.ca.gov">dnewton@library.ca.gov</a></td>
<td></td>
</tr>
<tr>
<td>Proj. Sponsor</td>
<td>Susan Hildreth</td>
<td>916</td>
<td>654-0266</td>
<td>916</td>
<td>654-0064</td>
<td><a href="mailto:shildreth@library.ca.gov">shildreth@library.ca.gov</a></td>
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### Direct Contacts

<table>
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<th>Last Name</th>
<th>Area Code</th>
<th>Phone #</th>
<th>Ext.</th>
<th>Area Code</th>
<th>Fax #</th>
<th>E-mail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doc. prepared by</td>
<td>Dennis Hagen</td>
<td>916</td>
<td>653-4182</td>
<td>916</td>
<td>653-4422</td>
<td><a href="mailto:dhagen@library.ca.gov">dhagen@library.ca.gov</a></td>
<td></td>
</tr>
<tr>
<td>Primary contact</td>
<td>Debbie Newton</td>
<td>916</td>
<td>653-4023</td>
<td>916</td>
<td>653-4422</td>
<td><a href="mailto:dnewton@library.ca.gov">dnewton@library.ca.gov</a></td>
<td></td>
</tr>
<tr>
<td>Project Manager</td>
<td>Dennis Hagen</td>
<td>916</td>
<td>653-4182</td>
<td>916</td>
<td>653-4422</td>
<td><a href="mailto:dhagen@library.ca.gov">dhagen@library.ca.gov</a></td>
<td></td>
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</table>
### INFORMATION TECHNOLOGY PROJECT SUMMARY

**SECTION C: PROJECT RELEVANCE TO DATE AND/OR DEPARTMENTAL PLANS**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Date</th>
<th>Project #</th>
<th>Doc. Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>What is the date of your current Operational Recovery Plan (ORP)?</td>
<td>Jan. 2006</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>What is the date of your current Agency Information Management Strategy (AIMS)?</td>
<td>July 2004</td>
<td></td>
<td>FSR</td>
</tr>
<tr>
<td>3</td>
<td>For the proposed project, provide the page reference in your current AIMS and/or strategic business plan.</td>
<td>CSL Strategic Plan</td>
<td>Page 19, Goal 1, Obj 13</td>
<td></td>
</tr>
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### 4. Is the project reportable to control agencies?

<table>
<thead>
<tr>
<th></th>
<th>If YES, CHECK all that apply:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>a) The project involves a budget action.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>b) A new system development or acquisition that is specifically required by legislative mandate or is subject to special legislative review as specified in budget control language or other legislation.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>c) The project involves the acquisition of microcomputer commodities and the agency does not have an approved Workgroup Computing Policy.</td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>d) The estimated total development and acquisition cost exceeds the departmental cost threshold. $500,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>e) The project meets a condition previously imposed by Finance.</td>
<td></td>
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### Project Summary Package

#### Section D: Budget Information

**Budget Augmentation Required?**

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<tr>
<th>Yes</th>
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<td></td>
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If YES, indicate fiscal year(s) and associated amount:

<table>
<thead>
<tr>
<th>FY</th>
<th>07/08</th>
<th>08/09</th>
<th>09/10</th>
<th>10/11</th>
<th>11/12</th>
<th>TOTAL</th>
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<td>2007</td>
<td>$51,322</td>
<td>$1,419,455</td>
<td>$135,573</td>
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<td>2008</td>
<td>$1,419,455</td>
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<td></td>
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<tr>
<td>2009</td>
<td></td>
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<td>2010</td>
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<td>2011</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</table>

### Project Costs

1. Fiscal Year
   - **07/08**: $191,568
   - **08/09**: $1,935,968
   - **09/10**: $0
   - **10/11**: $0
   - **11/12**: $0
   - **TOTAL**: $2,127,536

2. One-Time Cost
   - **07/08**: $191,568
   - **08/09**: $1,935,968
   - **09/10**: $0
   - **10/11**: $0
   - **11/12**: $0
   - **TOTAL**: $2,127,536

3. Continuing Costs
   - **07/08**: $0
   - **08/09**: $116,800
   - **09/10**: $299,459
   - **10/11**: $0
   - **11/12**: $0
   - **TOTAL**: $416,259

4. TOTAL PROJECT BUDGET
   - **07/08**: $191,568
   - **08/09**: $2,052,768
   - **09/10**: $299,459
   - **10/11**: $0
   - **11/12**: $0
   - **TOTAL**: $2,543,795

### Sources of Funding

5. General Fund
   - **07/08**: $51,322
   - **08/09**: $1,419,455
   - **09/10**: $135,573
   - **10/11**: $0
   - **11/12**: $0
   - **TOTAL**: $1,606,350

6. Redirection
   - **07/08**: $140,246
   - **08/09**: $633,313
   - **09/10**: $163,886
   - **10/11**: $0
   - **11/12**: $0
   - **TOTAL**: $937,445

7. Reimbursements
   - $0

8. Federal Funds
   - $0

9. Special Funds
   - $0

10. Grant Funds
    - $0

11. Other Funds
    - $0

12. PROJECT BUDGET
    - **07/08**: $191,568
    - **08/09**: $2,052,768
    - **09/10**: $299,459
    - **10/11**: $0
    - **11/12**: $0
    - **TOTAL**: $2,543,795

### Project Financial Benefits

13. Cost Savings/Avoidances
    - **07/08**: $0
    - **08/09**: $0
    - **09/10**: $0
    - **10/11**: $0
    - **11/12**: $0
    - **TOTAL**: $0

14. Revenue Increase
    - **07/08**: $0
    - **08/09**: $0
    - **09/10**: $0
    - **10/11**: $0
    - **11/12**: $0
    - **TOTAL**: $0

Note: The totals in Item 4 and Item 12 must have the same cost estimate.
INFORMATION TECHNOLOGY PROJECT SUMMARY PACKAGE  
SECTION E: VENDOR PROJECT BUDGET

Vendor Cost for FSR Development (if applicable) | $0
Vendor Name | N/A

<table>
<thead>
<tr>
<th>Vendor Project Budget</th>
<th>07/08</th>
<th>08/09</th>
<th>09/10</th>
<th>10/11</th>
<th>11/12</th>
<th>TOTAL</th>
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<tr>
<td>2. Primary Vendor Budget</td>
<td>0</td>
<td>$1,224,245</td>
<td>$136,784</td>
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<td>$1,361,029</td>
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<td>3. Independent Oversight Budget</td>
<td>0</td>
<td>0</td>
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<td>0</td>
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<tr>
<td>4. IV&amp;V Budget</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>5. Other Budget</td>
<td>0</td>
<td>$178,450</td>
<td>$14,550</td>
<td>0</td>
<td>0</td>
<td>$193,000</td>
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<tr>
<td>6. TOTAL VENDOR BUDGET</td>
<td>0</td>
<td>$1,402,695</td>
<td>$151,334</td>
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<td>$1,554,029</td>
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</table>

-----------------------------------------------(Applies to SPR only)-----------------------------------------------

PRIMARY VENDOR HISTORY SPECIFIC TO THIS PROJECT

7. Primary Vendor
8. Contract Start Date
9. Contract End Date (projected)
10. Amount $

PRIMARY VENDOR CONTACTS

<table>
<thead>
<tr>
<th>Vendor</th>
<th>First Name</th>
<th>Last Name</th>
<th>Area Code</th>
<th>Phone #</th>
<th>Ext.</th>
<th>Area Code</th>
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<tr>
<td>11.</td>
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<tr>
<td>12.</td>
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<tr>
<td>13.</td>
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</tr>
</tbody>
</table>
RISK ASSESSMENT

Has a Risk Management Plan been developed for this project?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

General Comment(s)

The vendor that licenses and supports the State Library's Integrated Library System has ceased development of the software, and CSL has every indication that all product support will be dropped within the next 36 months. Moreover, the hardware and software platforms upon which this application runs are reaching their end-of-life. As the components of the Integrated Library System begin to fail, the services they support will begin to erode and the costs for providing the services will increase. The possibility exists that the system could experience a complete failure from which Integrated System services could not be restored, rendering the State Library unable to perform its primary mission of serving the information needs of state government. The impacts of this problem would be disastrous to state government, with the fiscal and state government policy impacts being:

- Lack of needed information for legislative and executive decision-making, resulting in poorly-informed decisions on state and local policy, costing millions of dollars in poorly-applied tax funds or, worse, decisions which do irreparable harm;

- Lack of needed information for state agency personnel, leaving personnel without the data they need to support state policy makers, resulting in the same problems of poorly-applied tax funds or harmful decisions described above;

- Loss of hundreds of millions of dollars worth of information resources that will quickly become worthless without an operating inventory control and access system; and

- Loss of more than one half billion tax dollars annually from ineffective use of state employee staff time in poorly- or un-supported searching for information.

- Increase in PY's required to process new materials if interoperability with bibliographic utilities ceases.

Because of the criticality of this project to preserving the State Library's ability to carry out its mission of serving the information needs of state government, this is the California State Library's highest priority project being submitted for consideration.
3.0 Business Case

3.1 Business Program Background

SLS Program Background

The California State Library (CSL) was established by the first state legislature in 1850. The mission statement of CSL reads “The State Library is California’s public research library that helps a diverse people, their governments and their libraries meet their knowledge and information needs.” In fulfilling that mission CSL provides library services to California state executive, legislative, and state officeholders and their staff, serving over 200 thousand California state employees, as well as services to the general public through its public desks and through all libraries within the state via interlibrary loan.

The major functions in the California state budget to address the public service portions of CSL’s mission are included in Program 10, State Library Services. This budgetary program supports the State Library Services and California Research bureaus of the CSL. Various sections in each of these two bureaus represent the major vehicles by which the CSL addresses its legislated responsibilities to provide information services to state government and the public, as defined in Education Code section 19320, paragraphs (h), (k), and (l):

(h) Collect, preserve, and disseminate information regarding the history of the state.
(k) Authorize the State Library to serve as the central reference and research library for the departments of state government and maintain adequate legislative reference and research library services for the Legislature.
(l) Acquire, organize and supply books and other library informational and reference materials to supplement the collections of other public libraries of the state with the more technical, scientific and scholarly works, to the end that through an established interlibrary loan system, the people of the state shall have access to the full range of reference and informational materials.

CSL’s collection includes over 1 million book volumes as well as magazines, newspapers, U.S. and California state and local government publications, maps, pamphlets, audio recordings, video recordings, CDs and DVDs, microfilm and microfiche, manuscript collections, photographs and other graphic images, realia, and ephemera.

CSL’s extensive resources are focused on meeting state officials and staff research information needs, as well as public research needs that would otherwise be unmet.

Because California state officials and staff are not all located near the CSL library facilities or even geographically nearby, the breadth and depth of the State Library
resources needs to be accessible to all via its Integrated Library System. This system has enabled government staff spread across California, as well as members of the public, to identify and request quality materials important to state projects such as: California state government reorganizations proposed by former governors; legislation proposed at the formation of California's statehood; state department annual reports and legislative reports; hearings as well as newspaper articles on the treatment of California Indians; industry-approved standards for construction and maintenance of underground gasoline tanks; staff development and training videos on public service skills and workplace communication; research of the best practices of HOV lanes; and 50-state surveys on model legislation in various fields. This represents a small sample of the types of California state interests for which the State Library has developed and continues to enhance its collections. For example, CSL staff actively monitor public policy developments for reports, documents, analyses, articles, books and court decisions relevant to state government, adding them to the collections, and alerting state officials and staff through Studies in the News. Having an Integrated Library system robust enough to handle the volume as well as the complexity is key to ensuring that the best resources can be easily identified and requested.

The scope and depth of the CSL collections was confirmed recently when a survey comparing the records of the state university collections with those of the CSL indicated that approximately 40 percent of the State Library's entries are unique. Highlights of the collections include:

- The Government Publications Section is a full depository and the state's largest collection of California state government publications. It serves as the sole regional depository for and largest collection of federal documents in California. It receives all publications distributed by the U.S. Superintendent of Documents to federal depository libraries, along with purchasing related supplementary microfiche collections relating to federal reports, studies and documents.

- The Bernard E. Witkin State Law Library contains standard primary and secondary sources in California and American law, such as appellate court opinions, session laws, codes/statutes, federal agency decisions, and attorney general opinions of the U.S. and its fifty four jurisdictions, digests, citators, law journals and current practice materials.

- The California History Room covers all aspects of life in the State from prehistoric times to the present. The Sutro Library features U.S. local history, notable rare book and manuscript collections, and the finest genealogy collection west of Salt Lake City, Utah. Together the two sections provide local history and genealogy collections among the most used in the country.

- The Languages Collection in the State Information and Reference Center contains more than 23,000 titles from 145 languages in Arabic, Asian, European, Hispanic, Indic, Scandinavian, and Slavic languages, containing fiction and non-fiction in both original works and translations from English. This extensive languages collection is available to the diverse peoples of California through requests from public libraries with individual titles and/or small traveling selections.
The tool that allows the CSL to effectively maintain this massive collection and to successfully fulfill its service responsibilities is an integrated library system (ILS), which allows the library to efficiently acquire, catalog, and circulate information materials; to integrate public access to the library’s catalogs and a wide variety of electronic information systems; and to facilitate library users’ ability to obtain the information they need from anywhere in the world, both quickly and efficiently for them and for the state of California.

The ILS currently manages almost 2 million items in various formats, handles about ¾ of a million transactions per year, and provides web access to literally millions of electronic information resources online including current database subscriptions. It is critical to CSL’s ability to provide state government with the information needed to support state responsibilities. It is only through the operation of this system that the library can fulfill its legislated responsibilities, particularly in these times of extremely limited financial and staffing resources.

**Project Background**

In 1985 the California State Library completed a multi-year feasibility study process to evaluate the need to “modernize the fundamental apparatus by which users of the State Library gain access to the Library’s rich collections and [the] means [by] which new materials are incorporated in the Library.”

At the time, Library users had to consult 18 separate, manually maintained card catalogs and files to identify the Library’s holdings. Individual circulation cards were handwritten for each item loaned to a borrower or to another library. Library staff tracked the acquisition of new library materials, and the receipt of new issues of periodicals and serials, by using multi-part typed forms, augmented by handwritten notes, filed in numerous processing files.

As a result of the feasibility study, the Library proposed automating the manual processes supporting the Library’s four basic service functions (Public Catalog, Circulation, Materials Acquisition, and Serials Control) by purchasing a commercial package, also known as an Integrated Library System, from a library automation vendor.

The Dept. of Finance’s Office of Information Technology approved the FSR, *Basic Library Services System Upgrade*, in November 1985, as Project 7100-33 (renamed Project 7101-01 by OIT, 7/6/87, to reflect the Library’s administrative independence from the Dept. of Education).

The FSR identified twenty-two objectives clustered into three broad categories:

- Improvement in the users’ abilities to obtain needed information (9 objectives).
- System performance and efficiency (7 objectives).
• Improved staff productivity (6 objectives)

In 1989, per the recommendation of the FSR, the Library signed a contract with one of the leading library automation vendors, Data Research Associates.

Over the years, this project has become known within the Library as the “Integrated System.”

The Project’s Success

In the Post Implementation and Evaluation Report for the project, the Library was pleased to announce that eighteen of the twenty-two objectives were met.¹

Since 1989/90, with the purchase and installation of a “turn-key” commercial library automation system from Data Research Associates (DRA), the Integrated System has become the foundation for the core services provided by the State Library Services Bureau.

- The system provides a Web catalog portal to the Library’s collections, which can be searched from any Internet-connected device in the world, 23 hours a day, 7 days a week. http://www.lib.state.ca.us

- All library materials loaned to individuals or libraries are tracked by the Integrated System’s circulation module. The module automatically generates overdue notices and identifies missing and lost items. As a benefit to both users and staff, the online catalog identifies whether an item is available for use, or whether an item is already loaned to another user.

- New library materials are purchased by generating purchase orders and recording invoice activities in the Integrated System’s acquisitions module. Up-to-date fund balances and on-order reports are generated automatically by the system. As a benefit to both users and staff, the online catalog includes all “on-order” titles and the status of each order.

- New issues of periodicals and serials are tracked on the Integrated System’s serials control module. All users of the online catalog now can determine whether the library has received a specific issue of a periodical or serial.

¹ One objective became irrelevant, leaving three objectives outstanding. Two of the three outstanding objectives focused on improved access to historic images and specialized indexes, both of which have developed into independent projects. The remaining outstanding objective was to link the Integrated Library System’s informal accounting data to the Controller’s Office.
For eleven years (1990 - 2001) DRA fully supported and further developed the software, ensuring that the California State Library’s investment did not erode:

- DRA fine-tuned their products via the release of patches and software upgrades.
- DRA kept their software current with the OpenVMS operating platform for which it was designed, and most importantly
- DRA kept the software compatible with the changing data and automation standards in the library marketplace, which allowed the Library to maintain interoperability both with vendors and other libraries.

At the peak of its success, over 300 licensed customers throughout the world used the DRA Integrated Library System software suite.
3.2 Business Opportunity or Problem

The vendor that licenses and supports the Library’s Integrated Library System has ceased development of the software products used by the Library and will likely cease customer support within the next 36 months. As components of the Integrated System begin to fail, the services they support will begin to erode and the costs for providing the services will increase. The possibility exists that the system could experience a complete failure from which Integrated System services could not be restored. This presents both immediate, critical problems for the California State Library as well as opportunities.

Problem Background

In 2001, SirsiDynix, Inc, a competing library automation vendor, purchased DRA. SirsiDynix markets two library automation software suites: Unicorn and Horizon.

After the purchase, SirsiDynix announced it will not further develop the DRA software (now called the Classic suite), and will not make modifications to the software to keep the system abreast of the changing standards in the library automation world.

SirsiDynix is advising libraries that run Classic systems to migrate to either SirsiDynix’s Unicorn or Horizon platform.

As of June 2006, over 90% of the DRA customers have migrated to other integrated library systems, or have a funded migration plan to purchase a new system. (The CSL is one of only two large libraries that lack a funded migration plan. The remaining 24 libraries are small public and college libraries.)

Moreover, Hewlett Packard will discontinue the sale of the Alpha line of HP servers in Oct 2006 (the CSL’s Classic suite runs on an Alpha800 server, purchased in 1998). HP will replace the Alpha line with HP’s new Integrity servers. The Integrity servers run a different flavor of the operating system (OpenVMS Integrity) than the Alpha servers (OpenVMS AXP). SirsiDynix is not porting the current Integrated System applications software to the Integrity operating system.

Problem Statement

The California State Library cannot perform its primary mandated mission to: “... serve as the central reference and research library for the departments of state government and maintain adequate reference and research library services for the Legislature…”; “Collect, preserve, and disseminate information regarding the history of the state; and “… supplement the collections of … libraries in the state .. to the end that … the people of the state shall have access to the full range of … materials” (Ed Code 19320 h, k), nor can it continue to maintain the
improvements in services and internal efficiencies which were achieved by the installation of an Integrated Library System in 1989/90, while attempting to operate a system that will no longer be supported and that no longer complies with changing industry standards for library data exchange.

The specifics of this overall problem are discussed in detail in the next section. The cumulative effect of these problems is that the services provided via the Integrated Library System soon will begin to degrade, which will increase inefficiencies and require an increase in PY's, unless the State Library takes immediate preventive action. In addition, as the Integrated Library System drifts from compliance with evolving library data standards, CSL staff will be forced to employ non-standard data-entry "work-arounds." This could require a data cleanup project that could result in unknown additional costs when migrating the system at a future date.

The impacts of this problem on state government and the public could be disastrous from a policy standpoint and fiscally irresponsible:

State Policy Ramifications

- **Lack of needed information for legislative and executive decision-making.**
  Elected officials and their staff base much of their decision-making on information provided to them by or through the State Library. Without a functioning ILS, this information will not be available to these decision-makers. The result will be poorly-informed decisions on state and local policy, with resultant millions of dollars in poorly-applied tax funds or, worse, decisions which do irreparable harm to Californians in one way or another rather than to aid them.

- **Lack of needed information for state agency personnel.**
  State agency personnel are responsible for making recommendations to policy makers and for implementing those decisions. Without a functioning ILS, the State Library cannot provide them with the current data these personnel need to support the policy makers, resulting in the same kind of problems just described regarding legislative and executive information failures.

Fiscal Ramifications

- **Loss of 150-year investment in library and information resources.**
  For over 150 years the State Library has, by purchase, gift, and exchange, built up a remarkable collection of private and public information resources, conservatively estimated to be worth hundreds of millions of dollars. Additional tens of millions of tax dollars have been invested in cataloging, preserving, and making accessible this extraordinary resource. The entirety of this investment in information resources to serve state government will quickly become practically worthless without an operating inventory control and access system.
• **Loss of tax dollars from ineffective use of staff time searching for information.**
  The state employs tens of thousands of knowledge workers, whose job it is to obtain information for specific issues of import to state programs. In a recent study ["The High Cost of Not Finding Information," by Susan Feldman in *KMWorld*, Volume 13, Issue 3, March 2004], it was documented that for each 1000 knowledge workers spending time looking for and not finding information, the cost is approximately $6,000,000/year. The cost of time spent by those same 1000 workers reworking their information because it was not found initially, totals another $12,000,000 annually. Statewide, with a conservative estimate of only 50,000 state employees actively engaged in the pursuit of specific information for their programs, the cost of seeking and not readily finding needed information totals more than half a billion dollars annually.

• **Increase in PY's required to catalog new materials if interoperability with bibliographic utilities ceases.**
  The loss of the ability to load records from bibliographic utilities, as discussed under Problem Details #5 and #6, would require an increase in the number of PY’s devoted to the processing of new materials.

**Problem Details**

1. **Changes that are scheduled by the standards community, such as a new “record type” fixed field and modifications to the ISBN standard, both scheduled for later this year, could jeopardize the stability of the Integrated System databases and cause indexing errors or corruption, from which the Library could not recover.**

   The California State Library catalogs contain over 1.2 million bibliographic records, representing 150 years of manual and online labor at the California State Library. The records are now maintained in the MARC21 communications formats (a set of international standards used by all major libraries). SirsiDynix is no longer updating the software to match changes in the MARC21 standards (www.loc.gov/standards). This primary, irreplaceable asset of the California State Library is at risk.

2. **After October 2006, the CSL will not be able to reliably address recovery of its Integrated Library System from a catastrophic disaster.**

   The Integrated Library System is one of two critical IT applications at the CSL. (The other critical application is the specialized circulation system of the CSL’s Braille and Talking Book Library (BTBL), which was replaced in the fall of 2005.)
The recovery strategy for the ILS is system replacement. The hardware platform that supports the ILS software (Alpha servers running the OpenVMS AXP software) will no longer be available for purchase new from HP after October 2006, and SirsiDynix will not port the software to HP’s next generation platform. The CSL will have to depend upon the availability of used Alpha servers to recover from a catastrophic disaster.

3. The CSL must continue to retain the productivity levels and processing efficiencies that were gained with the automation of the following staff activities when the original Integrated System was installed in 1989/90:

   A. Cataloging and inventory control efficiencies
   B. Circulation of library materials efficiencies
   C. Acquisition of new library materials efficiencies
   D. Serials control (subscriptions and receipt of issues) efficiencies

As stated earlier in the Project Background section, the implementation of a COTS (Commercial Off-The-Shelf) Integrated Library System in 1989/90 transformed manual tasks into automated tasks, producing numerous workload efficiencies as reported in the initial project’s Post Implementation Evaluation Report. It is essential that the Library maintain these efficiencies. Examples of the objectives achieved by 1989/90 project include:

   • Increase staff productivity by 85% in performing the following tasks: [determining order status, receipt status and loan status of items]
   • Increase staff productivity in the serials claiming and cancellations function by 75%.
   • Increase system support for the circulation function to reduce staff time required for overdue processing by 90%.
   • Reduce staff time required for card catalog filing and maintenance by at least 75%.

4. The CSL cannot update the record structure for borrowers and suppliers to include new data, such as cell phone numbers and URL’s, compelling staff to use data fields in non-standard ways and increasing staff frustration with the system.

The structure of the borrower record in the CSL’s current system cannot record some borrower information that didn’t exist back in 1990, such as cell phone numbers for individuals and interlibrary loan codes for borrowers that are libraries.

The structure of supplier records (in the CSL’s current Acquisitions and Serials Control modules) cannot include data that didn’t exist back in 1990, such as URL’s.
5. Changes that are scheduled by the standards community could prevent library staff from being able to transfer records from the OCLC bibliographic utility to the Library’s catalogs, requiring that every new bibliographic record be keyed from scratch by CSL staff on the local Integrated Library System.

Library staff do not create a MARC21 format bibliographic record from scratch for each new item purchased by the Library. Instead, they copy bibliographic records for most new titles from a bibliographic utility, OCLC (www.oclc.org), used by over 9,000 libraries worldwide. (The OCLC WorldCat database contains over 65 million bibliographic records.) Again, SirsiDynix will not update the ILS software to match changes in the MARC21 standards. The data interchange with OCLC requires compliance with the current version of these standards.

6. Changes that are scheduled by the standards community could prevent the batch loading of over 14,000 bibliographic records each year for federal documents.

The CSL is the only regional federal depository library in California, receiving all documents issued by the U.S. government. Library staff do not create a MARC21 formatted bibliographic record from scratch for each new federal document. Instead, the CSL purchases copies of these bibliographic records from Marcive Inc. and loads the records into the Integrated Library System in batch. SirsiDynix will not update the load software to include future changes in the MARC21 format, which could prohibit the loading of new records for federal documents from Marcive, Inc.

7. Changes that are scheduled by the standards community could prevent the Library from exchanging bibliographic data with other libraries and thus reduce the services currently available to users of the California State Library.

The Library exchanges bibliographic data with other libraries, such as with the University of California for its Melvyl Catalog (www.melvyl.cdlib.org).

The data exchanges are possible only when both libraries are using the same version of the library standard for bibliographic data exchanges (MARC 21 Specifications for Record Structure, Character Sets and Exchange Media (http://www.loc.gov/marc/). SirsiDynix will not be updating the ILS software to match changes in the MARC21 standards.
8. Changes to the Z39.50 standard will prevent California libraries from linking to the CSL catalogs.


SirsiDynix is not updating its implementation of the Z39.50 standard in the Classic suite to conform to changes in the standard. Thus the ability for other libraries to connect from their catalogs to the CSL catalogs via the Z39.50 interface could end.

9. The CSL will not be able to keep its Web Catalogs up to date with Internet changes.

SirsiDynix will not update the software that supports the Web Catalog software.

To continue to be an effective tool, the Web Catalog software must comply with future changes to the standards upon which it was built:

- **Web Content Accessibility Guidelines** as published by the W3C, http://www.w3.org/TR/WAI-WEBCONTENT/


- **MARC21 Standards** and related formats, http://www.loc.gov/marc/


As changes are made to these standards, the performance and effectiveness of the Web Catalogs will be threatened. The catalogs may fail to meet accessibility objectives and may fail to effectively perform searches against the CSL's bibliographic databases. The result will be a reduction in the usefulness of the Web catalogs to all CSL catalog users.
Opportunity Background

In addition to the problems created by SirsiDynix’s cessation of support and development for the COTS (commercial off-the-shelf) system used by the CSL for its Integrated Library System, recent changes in the library automation marketplace have created opportunities for the CSL.

Historically, the field of library automation has focused on two areas:

- online catalogs that allow users to explore and request library materials via the Internet,
- efficiencies in library processing activities performed by library staff (catalog maintenance, circulation of materials, acquisition of new materials, and serials control).

Today, library automation also focuses on streamlining direct access for library users to a wide range of electronic information.

For example, “federated searching” utilities now allow library users to search simultaneously across multiple databases, both internal and external to the library. (Most “deep Web” citation databases cannot be explored by search engines such as Google.) These search utilities combine results from all sources into a single search result set. Such products save the researcher time by eliminating the need to repeat searches in multiple databases and by automatically guiding the researcher to sources he or she may not have known to explore. Unfortunately, these utilities are not compatible with the CSL’s current Integrated Library System and cannot be currently offered to CSL’s users.

“OpenURL” utilities (utilities which comply with the OpenURL standard²) now lead a library user directly to the most appropriate full text version of a cited article or document, based upon a library’s paid subscriptions to full text databases. Again, such products save researchers time and money since they direct a researcher from a citation to an electronic full text version or the article or document that has already been purchased by the user’s library. The CSL subscribes to full text databases for state government researchers, but the current Integrated Library System cannot comply with the requirements of OpenURL utilities that would allow this direct link. Instead, the researcher must search each database separately.

Opportunity Statement

How can the California State Library further improve the ability of state government researchers to effectively and efficiently obtain the information they seek?

Opportunity Details

1. Reduce the need for a user to repeat a search in multiple databases to identify information sources.

2. Simplify the user’s task of obtaining a full text version of a cited article or document.

Why Address These Problems and Opportunities Now?

SirsiDynix announced the cessation of support and developed for the DRA system in 2001. Why has the CSL waited until now to address the resulting problems?

Prior to 2006, the software that supports the CSL’s Braille and Talking Book Library (BTBL) was a component of the Integrated Library System. CSL management made a strategic decision in 2002 to address the BTBL system migration first.

During 2002-2005, the CSL focused on resolving the BTBL’s business problem of running an unsupported circulation system:

- In 2004, the CSL submitted a Feasibility Study Report for the “Library for the Blind and Physically Handicapped Replacement Project”, along with a BCP for funding.
- January 2005, Dept. of Finance approved the report as Project Number 6120-8.
- Summer 2005, funding for the project was included in the FY 2005/06 Budget Act.
- Fall 2005, the CSL purchased and installed a replacement system from Keystone, Inc.
- Spring 2006, the CSL submitted the Post Implementation and Evaluation Report for the project.

With the completion of the Braille and Talking Book Library project, the CSL must focus on the remaining problems of running an unsupported Integrated Library System for all of its other core library operations. Approval of a project now to rectify the problems stated above will still require the CSL to use the current system until 2009!
3.3 Business Objectives

General Objectives

- Avoid unacceptable risks associated with using unsupported COTS software on a discontinued hardware platform to support one of the CSL's two critical IT applications.

- Preserve and build upon the investment in automated information services made in 1989/90 with the installation of the original system.

- Continue to support and improve the information services the CSL provides to state government and California libraries.

Specific Business Objectives

1. Continue to preserve and build upon one of the primary investments of the California State Library: the data in the databases that support the Integrated Library System.
   (Problem 1; Functional Requirements 3.4.2 – 3.4.10, 3.4.12)

<table>
<thead>
<tr>
<th>Type of records</th>
<th>Record count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bibliographic records</td>
<td>1,300,000</td>
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<tr>
<td>Authority records</td>
<td>230,000</td>
</tr>
<tr>
<td>Item/Holding records</td>
<td>2,000,000</td>
</tr>
<tr>
<td>Borrower records</td>
<td>24,000</td>
</tr>
<tr>
<td>Serial holding records</td>
<td>20,000</td>
</tr>
<tr>
<td>Supplier (vendor) records</td>
<td>6,000</td>
</tr>
</tbody>
</table>

2. Continue to meet the operational recovery objectives for the Integrated Library System (a system replacement strategy).
   (Problem 2; Functional Requirements 3.4.27)

3. Continue to maintain the productivity levels that were achieved by the installation of the original Integrated Library System in 1990:
   (Problem 3; Functional Requirements 3.4.19 – 3.4.25)

- Cataloging and Authority Control
  (19,000 bibliographic records and 5,200 authority records added per year with existing staff levels)
  (Functional Requirements 3.4.19 – 3.4.20)
• Circulation control
(50,000-75,000 circulation transactions per year with existing staff levels)
(Functional Requirements 3.4.21)

• Acquisition of library materials
(1800 purchase order line items and 500 invoices processed per year with existing staff levels)
(Functional Requirements 3.4.22)

• Serials control
(3,300 subscriptions maintained with 34,500 issues checked-in per year with existing staff levels)
(Functional Requirements 3.4.23)

• Management reports
(Functional Requirements 3.4.24)

4. Continue to maintain the current efficiencies that were made possible by the installation of the original Integrated Library System:
(Problem 3; Functional Requirements 3.4.26)

<table>
<thead>
<tr>
<th>Task (interactive unless “batch” is stated)</th>
<th>Transaction Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>In the Web catalog, retrieve a hitlist from a typical author phrase search (last name, first name, excluding the loading of external graphics):</td>
<td>&lt; 3 seconds</td>
</tr>
<tr>
<td>In the Web catalog, retrieve a hitlist from a keyword search of two words (e.g., last name – first name, excluding the loading of external graphics):</td>
<td>&lt; 4 seconds</td>
</tr>
<tr>
<td>In staff modules, retrieve a hitlist from a typical author phrase search (last name, first name):</td>
<td>&lt; 3 seconds</td>
</tr>
<tr>
<td>In staff modules, retrieve a hitlist from a keyword search of two words (e.g., last name – first name):</td>
<td>&lt; 4 seconds</td>
</tr>
<tr>
<td>Circulation check-out of one item:</td>
<td>&lt; 3 seconds</td>
</tr>
<tr>
<td>Circulation check-in of one item:</td>
<td>&lt; 2 seconds</td>
</tr>
<tr>
<td>Write a new or modified borrower record to the database:</td>
<td>&lt; 3 seconds</td>
</tr>
<tr>
<td>Write a new or modified bibliographic record:</td>
<td>&lt; 5 seconds</td>
</tr>
<tr>
<td>Task</td>
<td>Transaction Rate</td>
</tr>
<tr>
<td>------</td>
<td>------------------</td>
</tr>
<tr>
<td>Add/change/delete bibliographic records (batch load):</td>
<td>&gt; 1,000 per hour</td>
</tr>
<tr>
<td>Serial control: check-in of a predicted issue:</td>
<td>&lt; 3 seconds</td>
</tr>
<tr>
<td>Write a new or purchase order record to the database:</td>
<td>&lt; 4 seconds</td>
</tr>
<tr>
<td>Write a new or invoice record to the database:</td>
<td>&lt; 4 seconds</td>
</tr>
</tbody>
</table>

5. Maintain data record structures for borrowers and suppliers that include all record elements necessary to support efficient customer service and vendor communications.
(Problem 4; Functional Requirements 3.4.7, 3.4.22)

6. Continue the efficiencies of interoperability with bibliographic utilities and vendors that were achieved by the installation of the original Integrated Library System in 1990:

- Continue the efficiencies of using the OCLC cataloging utility to annually produce approximately 9,800 new bibliographic records, and 5,000 related authority records, which are transferred into the Integrated Library System.
(Problem 5; Functional Requirements 3.4.13)

- Continue the efficiencies of batch loading 10,000-14,000 bibliographic records each year for Federal documents from Marcive, Inc., into the Integrated Library System.
(Problem 6; Functional Requirements 3.4.13)

- Continue to comply with changing national library automation standards that support interoperability.
(Problem 1; Functional Requirements 3.4.17)

7. Continue to serve libraries throughout California by sharing the CSL’s bibliographic records with libraries via data exchange standards:

- Continue to load bibliographic records into the University of California’s Melvyl Catalog via the MARC21 communications standard.
(Problem 7; Functional Requirements 3.4.14)
• Continue to provide access to the CSL catalogs to other libraries via the Z39.50 standard.
  (Problem 8; Functional Requirements 3.4.15)

8. Ensure that the CSL Internet catalogs continue to meet Internet accessibility standards.
  (Problem 9; Functional Requirements 3.4.18)

9. Continue to maintain the information services provided by the CSL’s Internet catalogs, www.lib.state.ca.us, which allow all library users to search the collections of the California State Library.
  (Problem 9; Functional Requirements 3.4.18)

10. Continue to provide library staff with the necessary training to effectively use the Integrated Library System to perform the following activities:
    (Problem 3; Functional Requirements 3.4.25)

    Program activities:
    • Acquire new library materials.
    • Create inventory records for library materials.
    • Circulate and track library materials.
    • Retrieve specific holdings records for library materials.

    Administrator activities:
    • Monitor server performance and perform backups.
    • Schedule and monitor batch processing.
    • Install patches and perform software and firmware upgrades.
    • Produce system and program reports.

11. Decrease the time required by users to find information resources and guide users to all resources provided by the CSL by enabling simultaneous cross-database searching (a.k.a., federated searching) in the CSL catalogs.
    (Opportunity 1; Functional Requirements 3.4.1)

12. Decrease the time required by users to obtain information resources by enabling direct links from citations to the most cost-effective full text version of an article or document, based upon the CSL’s paid subscriptions to full text databases.
    (Opportunity 2; Functional Requirements 3.4.1)
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3.4.1 General Functions

3.4.1.1 The following system modules or features are essential to maintain the California State Library's current level of service:

- 3.4.1.1.1 Online Public Access Catalog (Web Catalog)
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3.4.1.2 It should be possible for authorized staff to move easily among all modules, such as with a few keystrokes or mouse clicks.

3.4.1.3 Staff should be able to access multiple modules concurrently.

3.4.1.4 The system should have the same look and feel and consistent language utilized across all modules.

3.4.1.5 The system must support a federated searching utility, which does not require programming staff to maintain, that can simultaneously search MARC databases, non-MARC databases and subscription databases.

3.4.1.6 The system must support an Open URL-compliant utility, which does not require programming staff to maintain, that can provide a link from a citation in the Web Catalogs, or a citation in one of the Library's electronic subscriptions, to an available full-text copy.

3.4.1.7 The system should include basic help screens that the library can edit.

3.4.1.8 The system should have interactive help capabilities such as a search "wizard".

3.4.1.9 The system "help" should be keyword searchable, should be available on every screen/module and should be context sensitive.

3.4.1.10 The system should offer intelligent help if a search retrieves no results.
3.4.1.11 The system must include staff documentation for all modules, either in print or online.

3.4.1.12 Cross-Module Data Retrieval: It should be possible for authorized staff to easily retrieve and view all data linked to a title (e.g., items/reserves/selection lists/orders/invoices), regardless of the originating module.

3.4.1.13 It should be possible for multiple users to view the same record simultaneously.

3.4.1.14 The system must have the ability to update, create, maintain and delete records in real-time interactive mode so that the modifications to records can display immediately in all modules.

3.4.2 Databases

3.4.2.1 The system must support the appearance of a separate Main Catalog and Picture Catalog (currently maintained as separate DRA Classic databases).

3.4.2.2 The catalogs should be searchable individually or collectively.

3.4.2.3 It should be possible to define the indexing parameters for each catalog separately.

3.4.2.4 It should be possible to define the display parameters for each catalog separately.

3.4.2.5 It should be possible to maintain separate authority records for each catalog or to maintain authority records that are shared by multiple catalogs.

3.4.2.6 It should be possible to create the appearance of additional, separate catalogs.

3.4.3 Input and Editing

3.4.3.1 Data entry and editing routines in all modules should include standard word processing features such as:

3.4.3.1.1 cut and paste
3.4.3.1.2 copy and paste
3.4.3.1.3 drag and drop
3.4.3.1.4 overtype and insert
3.4.3.1.5 tab up and tab down, arrow up and arrow down through fields in records
3.4.3.1.6 arrow back and arrow forward through text in fields
3.4.3.2 It should be possible to display multiple windows and multiple records simultaneously on a workstation's screen to facilitate copy and paste, or cut and paste.

3.4.3.3 The user should be able to resize and re-position all open windows.

3.4.3.4 The system should be able to load, export, input, edit and display fields larger than a standard terminal screen display (24 lines by 80 columns), such as long 505 fields.

3.4.3.5 Horizontal and vertical scroll bars should be available to facilitate viewing in all windows.

3.4.3.6 It should be possible to develop controlled vocabularies of allowable values (i.e., validation tables) for specific fields in records, (e.g., borrower types, department names, material types, shelving locations.)

3.4.3.7 Validation tables should be displayable during data entry, such as via drop-down menus.

3.4.3.8 It should be possible to select elements in validation tables (such as drop-down lists) by keying in the first few letters of the data element.

3.4.3.9 It should be possible to undo any last action during an editing session.

3.4.3.10 The system should have a library-defined time threshold, such as an "auto-save" or "time-out" feature, that will close a record that has been opened for editing.

3.4.3.11 The system should allow all saved changes to be reflected in real time.

3.4.3.12 It should not be possible for multiple staff members to edit the same record simultaneously (such as a borrower record, bibliographic record or a holdings record).

3.4.3.13 It should be possible for staff to develop data entry shortcuts, such as macros and "quick keys" for performing repetitive tasks.

3.4.3.14 It should be possible to create, edit, save and name workforms or templates for all record types.

3.4.3.15 It should be possible to include default data in templates.
3.4.3.16 Templates should be available for simultaneous use by multiple users.

3.4.3.17 It should be possible to copy an existing record (such as a bibliographic record or a borrower record) in order to create a new record.

3.4.3.18 The system should allow entry of barcodes by scanning, keying, and copy/paste.

3.4.3.19 The system should support batch modifications to data in fields and subfields in bibliographic, holdings, and borrower records.

3.4.3.20 Batch changes to data should allow:

3.4.3.20.1 insertion of a new field,
3.4.3.20.2 insertion of a portion of a field or subfield,
3.4.3.20.3 deleting an entire field,
3.4.3.20.4 deleting a portion of a field or subfield.

3.4.4 Data Elements and Indexing of Records for Materials

3.4.4.1 General
3.4.4.1.1 The system must support three types of bibliographic and holdings data:

a. Bibliographic data, which must conform to the MARC21 Format for Bibliographic Data
b. Holdings data, which must conform to the MARC21 Format for Holdings Data
c. Item level data for each physical piece.

3.4.4.1.2 The system should support the creation and indexing of records that comply with other metadata standards, such as the Dublin Core.

3.4.4.2 MARC21 Bibliographic Records – System-wide Indexes

3.4.4.2.1 A common set of indexes should provide access to bibliographic records from all functional modules.

3.4.4.2.2 The library must be able to specify the MARC21 bibliographic fields that will be indexed to support the following types of phrase (i.e., heading) searches:

a. Author searching
b. Title searching
c. Subject searching
d. Numeric searching

3.4.4.2.3 The library **must** be able to specify the MARC21 bibliographic fields that will be indexed to support keyword searches.

3.4.4.2.4 The system should allow at least the following fields to be included in the author index:

a. 100 Main entry – Personal name
b. 110 Main entry – Corporate name
c. 111 Main entry – Meeting name
d. 700 Added entry – Personal name
e. 710 Added entry – Corporate name
f. 711 Added entry – Meeting name
g. 79X – Locally entered added entries
h. 800 Series added entry – Personal name
i. 810 Series added entry – Corporate name
j. 811 Series added entry – Meeting name
k. 400 Series statement/Added entry – Personal name
l. 410 Series statement/Added entry – Corporate name
m. 411 Series statement/Added entry – Meeting name

3.4.4.2.5 The system should allow at least the following fields to be included in the title index:

a. 130 Main entry – Uniform title
b. 240 Uniform title
c. 242 Translation of title by cataloging agency
d. 243 Collective uniform title
e. 245 Title statement
f. 246 Varying form of title
g. 247 Former title
h. 505 Contents notes – subfield t
i. 730 Added entry – Uniform title
j. 740 Added entry – Variant title
k. 440 Series statement/Added entry – Title
l. 490 Series statement
m. 7XX – any occurrence of subfield t
n. 76X – 78X Serials linking title fields
o. 830 Series added entry – Uniform title
3.4.4.2.6 The system should allow at least the following fields to be included in the subject index:

- 600 Subject Added entry – Personal name
- 610 Subject Added entry – Corporate name
- 611 Subject Added entry – Meeting name
- 630 Subject Added entry – Uniform title
- 650 Subject Added entry – Topical term
- 651 Subject Added entry – Geographic term
- 653 Index term - Uncontrolled
- 655 Index term – Genre/Form
- 69X Local Subject access fields
- 752 Added entry – Hierarchical place name
- 754 Added entry – Taxonomic identification

3.4.4.2.7 The system should allow at least the following fields to be included for numeric indexes:

- 001 Local control number (including the original DRA Classic control number)
- 010$a$z LC control number
- 010$m Marcive, Inc., TMP control number
- 010$o Original control number (OCLC, RLIN, Marcive, etc.)
- 020 ISBN
- 022 ISSN
- 024 Other Standard Identifier
- 027 Standard technical report number
- 028 Publisher number
- 050 LC classification number
- 030 CODEN
- 074 GPO Item number
- 082 Dewey classification number
- 086 Government document classification number
- 088 Report number
- 090$a$b Local call no.
- 950$a$b Local call no.

3.4.4.2.8 The system should keyword index all of the fields listed above (for author, title, subject and numeric indexes).

3.4.4.2.9 The system also should keyword index the following bibliographic fields:

- 222 Key title
- 260 Publication information
- 5XX Notes
d. 720 Added Entry - Uncontrolled name  
e. 753 System details  
f. 780 Preceding Entry  
g. 785 Succeeding Entry  
h. 787 Nonspecific Relationship Entry  
i. 89x Nonstandard series added entries  
j. 904$a Local field – name of new title list

3.4.4.2.10 The Library should be able to specify the subfields to be included and excluded in indexed fields, e.g., 505 $t, but not 505 $r.

3.4.4.2.11 It should be possible to search for keywords within the context of a particular index (author, title, subject, etc.) or to search for any occurrence of keywords regardless of the field in which they appear.

3.4.4.2.12 It should be possible to specify a particular field and or subfield in which to search for a keyword or keyword phrase.

3.4.4.2.13 The system should update indexes in real time when a bibliographic record is created or updated.

3.4.4.2.14 It should be possible for the library to modify the list of fields in bibliographic records that are indexed and to rebuild the indexes.

3.4.4.2.15 It should be possible for the library to rebuild bibliographic indexes within 72-hours.

3.4.4.2.16 Punctuation, capitalization and diacritics should be ignored in the system’s indexes.

3.4.4.3. MARC21 Fields/Codes for Limiting Bibliographic Record Searches

3.4.4.3.1 The system should allow the limiting of a search by values found in the following MARC21 fields in bibliographic records:

a. Leader field, character position 06 – Type of record  
b. 006 and 007 fields, character position 00 – Form of material  
c. 008 field (all formats)  
   i. Character position 07-10 – Publication date  
   ii. Character position 35-37 – Language  
d. 008 field (Books only) Character position 23 – Form of item  
e. 008 field (Books only) Character position 22 – Target audience

3.4.4.3.2 The system should support limiting by a range of years.
3.4.4.3.3 The system should allow the limiting of a search by values found in MARC21 Holdings field 852, subfields a, b, and c (location information).

3.4.4.3.4 The system should allow the limiting of a search by values found in non-MARC data elements at the item level:

   a. Owning branch or department
   b. Copy status, i.e., only title with on shelf copies available to borrow.

3.4.4.3.5 The system should offer an option for the library to create groupings of locations that can be used as search limiters.

3.4.4.4 Format for Holdings Data (MFHD)

3.4.4.4.1 It should be possible to use MFHD for every holding, including copies of monographs, as well as for multi-part and serial items which should have both piece-level holdings records and summary-level holdings records.

3.4.4.4.2 It should be possible to support “bound with” items, allowing disparate items bound together in one volume to be linked to all applicable bibliographic records.

3.4.4.4.3 It should be possible to index fields within holding records, such as call number or note fields.
3.4.4.5. **Item Record Data Elements**

3.4.4.5.1 Item-level record data fields should include at least the following, if not included in data in the *MARC21 Format for Holdings Data*:

a. Item call number
b. Item call number prefix
c. Item call number suffix
d. Barcode number
e. Owner descriptor for owning location
f. Specific shelving location or collection designator
g. Material format (i.e., hardback, paperback, CD)
h. Circulation status (i.e., circulating, non-circulating)
i. Adult/juvenile indicator
j. Date item was added
k. Date item record was last modified
l. Note fields with separate levels of security to control edit access.

3.4.4.5.2 In addition to the above listed data fields, item level data elements should include the following for recording transactions:

a. Route from location
b. Route to location
c. Hold status indicator
d. Next hold location
e. Date item was last circulated
f. Borrower identifier (if item is checked out)
g. Other circulation status information (missing, overdue, etc.)
h. Total number of transactions for both year-to-date and life of item.

3.4.5 **Call Number Indexing**

3.4.5.1 The system **must** accept, store, index, and display various types of call numbers (e.g., Library of Congress, Dewey, Superintendent of Documents, California documents numbers, and other locally created and non-standard call number schemes.)

3.4.5.2 Each of the following classification schemes should be sorted by its own rules:

a. Library of Congress classification system
b. Dewey Decimal classification system
c. Superintendent of Documents classification system
d. California Documents classification system (086 $2 cadocs)
3.4.5.3 It should be possible to display the range of bibliographic records that are adjacent to a given call number at a given location (i.e., a “shelflist” view).

3.4.5.4 It should be possible to index call numbers from the call number fields within individual holdings records.

3.4.5.5 It should be possible to index call numbers from the call number fields in bibliographic records (fields 090$a$b, 950$a$b, 050$a$b, 082$a$b, and 086$a$z).

3.4.5.6 The system should allow for searching multiple call numbers that link to or are imbedded in the same bibliographic/holdings record.

### 3.4.6 Data Elements and Indexing of Records for Authorized Headings

3.4.6.1 The system should support the full MARC21 Authority Format, including tags, indicators and subfield codes as specified in *MARC21 Format for Authority Data*.

3.4.6.2 The following fields in the MARC21 authority record should be indexed:

- 3.4.6.2.1 001 Local control number
- 3.4.6.2.2 087 Government document classification number
- 3.4.6.2.3 all 1XX, 4XX, and 5XX variable data fields.

3.4.6.3 The system **must** allow for the creation and maintenance of local authority records.

3.4.6.4 It **must** be possible to add local 4XX and 5XX fields to existing authority records.

### 3.4.7 Data Elements and Indexing of Records for Borrowers

#### 3.4.7.1 General

3.4.7.1.1 Borrower record data fields for individuals should include at least the following fields.

- a. Unique record identifier
- b. Last Name
- c. First Name
- d. Middle Name
- e. Suffix
- f. Borrower Type or Class
3.4.7.1.2 Borrower record data fields for organizations (such as libraries) should include at least the following fields.

a. Unique record identifier
b. Organization name (60 character minimum)
c. Organization Street Address
d. Organization City
e. Organization State
f. Organization Zip
g. Organization telephone number including area code and extension
h. FAX number
i. Borrower Type or Class
j. Library card number
k. Last Name of Contact Person
l. First Name of Contact Person
m. Middle Name of Contact Person
n. Suffix of Contact Person
o. Contact Street Address
p. Contact City
q. Contact State
r. Contact Zip
s. Contact telephone number including area code and extension
t. Contact FAX number
u. Cell phone number
v. E-mail address
w. OCLC code (alphanumeric) for borrowers that are libraries
x. Authorized second user
y. Note fields
z. Registration Branch
aa. Date borrower record created
bb. Expiration date
c. PIN or password

3.4.7.1.3 The system should allow the ability to customize labeling (naming) of borrower data fields, e.g. parent address could be relabeled to alternate address.

3.4.7.1.4 It should be possible for the library to create a controlled vocabulary of allowable data for selected fields within the borrower record, which can be displayed and selected during the registration process.

3.4.7.2 Borrower Record Indexes

3.4.7.2.1 Indexes used for searching the borrower records should include but not necessarily be limited to:

a. Borrower’s name
b. Organization name
c. Contact person’s name
d. Library card number
e. Address
f. Borrower Record number
g. E-mail address
h. Phone number
3.4.8 Display of Bibliographic, Holding, and Item Records

3.4.8.1 General

3.4.8.1.1 It should be possible to offer multiple display formats for bibliographic records, including at least:

a. A library-defined full record display for the Web Catalog (OPAC)
b. A library-defined brief record display for the Web Catalog (OPAC)
c. A library-defined full record display for staff
d. A library-defined brief record display for staff
e. A MARC21 format record with all tags and subfields

3.4.8.1.2 It should be possible to mask records from public display in the OPAC.

3.4.7.1.3 Display formats should be common across all staff modules.

3.4.7.1.4 The system should be able to display browse search results as a headings hitlist.

3.4.7.1.5 All MARC21 format displays and full record displays should have the option to display all item-level and holdings records linked to that record.

3.4.7.1.6 It should be possible to display or link to URL's in bibliographic records from within staff modules, such as from within a Cataloging Module or a Serials Control Module.

3.4.8.2 Full Bibliographic Displays

3.4.8.2.1 It should be possible for the library to specify the fields and subfields from MARC21 bibliographic records, holdings records, and item-level data that appear in a “full display” in the OPAC and in the staff modules.

3.4.8.2.2 The system should permit combining two or more occurrences of a MARC21 field into a single display field.
3.4.8.2.3 At a minimum, the following data should be included in a full bibliographic record display:

a. Author  
b. Title  
c. Uniform title  
d. Edition  
e. Imprint (Publisher, place, date)  
f. Publication frequency (for serials)  
g. Subject headings  
h. Added entries  
i. Preceding title (for serials)  
j. Succeeding title (for serials)  
k. Physical description  
l. Series title  
m. Alternate title(s)  
n. Numeric data (ISBN, ISSN, LCCN, etc)  
o. Notes  
p. URLs  
q. Summary Holdings or item-level data, including:
   - Locations
   - Call numbers from holdings and item-level data.

3.4.8.2.4 All indexed fields in the bibliographic display should be hot links capable of being used to initiate another database search for that term with a single command or action.

3.4.8.2.5 It should be possible to combine summary holdings of different formats (e.g. paper and microfilm) into one chronological holdings summary statement.

3.4.8.2.6 The system should offer the option to display call numbers from the bibliographic record (fields 050, 086, 090$a$b, and 950$a$b) in addition to call numbers from holdings data and item-level data.

3.4.8.2.7 If a bibliographic record includes both a 1xx field and a 240 field, the system should display the 240 field as the title in any set of results.

3.4.8.3 Brief Bibliographic Displays

3.4.8.3.1 The system should include a brief bibliographic display to be used whenever multiple records result from a search.
3.4.8.3.2 It should be possible for the library to specify the fields and subfields from MARC21 bibliographic records, holdings records, and item-level data that appear in a “brief display” in the Web Catalog (OPAC) and in the staff modules.

3.4.8.3.3 The data elements for brief bibliographic and serial records displays should include at a minimum:

   a. Format (using icon or text)
   b. Author
   c. Title
   d. Imprint (Publisher, place, date)
   e. URL
   f. Locations
   g. Call numbers from holdings data and item-level data

3.4.8.3.4 Each brief record display should include a method (check box, number, etc.) to select one or more records from the hit list to display a full record, to display associated items, include in session folder, print, e-mail, etc.

3.4.8.4 Item Record Displays

3.4.8.4.1 Display of an item record should include the following fields from the bibliographic record:

   a. Unique system identifier of item’s bibliographic record
   b. Author
   c. Title
   d. Publisher
   e. Publication date

3.4.8.4.2 The full display of an item record should also include the following fields:

   a. Item call number
   b. Item call number prefix
   c. Item call number suffix
   d. Barcode number
   e. Owner descriptor for owning section
   f. Specific shelving location or collection designator
   g. Material format (i.e., hardback, paperback, CD)
   h. Circulation status (i.e., circulating, non-circulating)
   i. Adult/juvenile indicator
3.4.8.4.3 If the item is attached to a title with MARC21 Format for Holdings Data, the library should be able to specify which fields from the MFHD record will be displayed, based on bibliographic record type.

3.4.9 Display of Authority Records

3.4.9.1 The MARC21 formatted display of authority records should include labeled display of the following fields:

3.4.9.1.1 000 Leader field—applicable character positions
3.4.9.1.2 008 Configuration – applicable character positions
3.4.9.1.3 Date entered
3.4.9.1.4 Date modified

3.4.9.2 The MARC21 formatted display also should include the remaining variable control fields and ALL variable data fields in numerical sequence, as present.

3.4.10 Display of Borrower Records

3.4.10.1 A borrower record for an individual should display the following fields:

3.4.10.1.1 Unique record identifier
3.4.10.1.2 Last Name
3.4.10.1.3 First Name
3.4.10.1.4 Middle Name
3.4.10.1.5 Suffix
3.4.10.1.6 Borrower Type or Class
3.4.10.1.7 Library card number
3.4.10.1.8 Home Street Address
3.4.10.1.9 Home City
3.4.10.1.10 Home State
3.4.10.1.11 Home Zip
3.4.10.1.12 Home County
3.4.10.1.13 Home Phone
3.4.10.1.14 Cell phone
3.4.10.1.15 Home FAX
3.4.10.1.16 Employer Name (60 character minimum)
3.4.10.1.17 Employer Street Address
3.4.10.1.18 Employer City
3.4.10.1.19 Employer State
3.4.10.1.20 Employer Zip
3.4.10.1.21 Employer phone number, i.e. work number
3.4.10.1.22 Employer FAX
3.4.10.1.23 E-mail address
3.4.10.1.24 Authorized second user
3.4.10.1.25 Notes fields
3.4.10.1.26 Registration Branch
3.4.10.1.27 Date borrower record entered
3.4.10.1.28 Expiration date
3.4.10.1.29 PIN or password
3.4.10.2 A borrower record for an organization should display the following fields:

3.4.10.2.1 Unique record identifier
3.4.10.2.2 Organization name (60 character minimum)
3.4.10.2.3 Organization Street Address
3.4.10.2.4 Organization City
3.4.10.2.5 Organization State
3.4.10.2.6 Organization Zip
3.4.10.2.7 Organization telephone number including area code and extension
3.4.10.2.8 FAX number
3.4.10.2.9 Borrower Type or Class
3.4.10.2.10 Library card number
3.4.10.2.11 Last Name of Contact Person
3.4.10.2.12 First Name of Contact Person
3.4.10.2.13 Middle Name of Contact Person
3.4.10.2.14 Suffix of Contact Person
3.4.10.2.15 Contact Street Address
3.4.10.2.16 Contact City
3.4.10.2.17 Contact State
3.4.10.2.18 Contact Zip
3.4.10.2.19 Contact telephone number including area code and extension
3.4.10.2.20 FAX number
3.4.10.2.21 Cell phone number
3.4.10.2.22 E-mail address
3.4.10.2.23 OCLC code (alphanumeric) for borrowers that are libraries
3.4.10.2.24 Authorized second user
3.4.10.2.25 Note fields
3.4.10.2.26 Registration Branch
3.4.10.2.27 Date borrower record created
3.4.10.2.28 Expiration date
3.4.10.2.29 PIN or password

3.4.10.3 The following additional borrower information should be displayed easily:

3.4.10.3.1 Date borrower card was last used.
3.4.10.3.2 The number of times a card has been replaced, including when and where.
3.4.10.3.3 The status of the borrower (i.e., delinquent status)
3.4.10.3.4 Outstanding fine amounts.
3.4.10.3.5 Invoice numbers for fines.
3.4.10.3.6 All materials on loan to the borrower with the ability to sort by due date, check out date, or any field in the brief record format
3.4.10.3.7 Item barcode number of each item currently on loan.
3.4.10.3.8 The status of each item on loan, i.e., overdue, claims returns, lost.
3.4.10.3.9 A list of current reserves placed for the borrower with information containing date requested, date notified when on hold, the place in
queue, and status of reserve (outstanding, on hold shelf, etc.), with
the ability to sort by request date, or any other field in the brief
record format

3.4.10.4 Borrower name search should take staff directly to the borrower record if a
single match is found, with a browse list displayed if multiple borrower
records are retrieved.

3.4.11 Platform, Architecture, Security, Rights and Permissions

3.4.11.1 Database/application server(s) must integrate with the Library’s Windows
2003 network infrastructure.

3.4.11.2 Database/application server(s) must be located behind the Library’s Cisco
PIX firewall, isolated from public Internet traffic.

3.4.11.3 Servers that support public access to the catalogs must be located in the DMZ
segment of the Library’s network.

3.4.11.4 Any server located in the Library’s DMZ must not store the personal
information of borrowers, other than temporary session information.

3.4.11.5 The operating system for all servers should be either Windows 2003 server
(preferred) or Sun Solaris.

3.4.11.6 Client software must be compatible with Windows 2000 and Windows XP
client operating systems.

3.4.11.7 Client software should not require local administrative privileges, other than
during installation.

3.4.11.8 It must be possible to control access to the application software and databases
by user name and password.

3.4.11.9 It should be possible to require staff to change their passwords after a library-
specified period of time (such as 90 days).

3.4.11.10 It must be possible for the library to define different levels of access and
permissions for different staff members within each module.

3.4.11.11 Authorized staff should be able to easily revise security levels and
permissions for individual staff accounts.

3.4.11.12 Override capabilities should be available for authorized staff.
3.4.11.13 It should be possible to be logged into an individual staff member's personal account at more than one workstation.

3.4.11.14 It must be possible to test both operating system and applications software patches and upgrades on a test platform, provided as part of the system, that matches the operational platform.

3.4.11.15 It should be possible to use the test platform as a replacement system for operational recovery.

3.4.11.16 It should be possible to use the test platform as a training system.

3.4.12 Data Conversion Requirements

3.4.12.1 Bibliographic Records

3.4.12.1.1 The system must be able to load all DRA Classic bibliographic records in MARC21 format into the new system regardless of status and encoding level. (As of 2/2/06, there are 1.3 million MARC21 bibliographic records.)

3.4.12.1.2 The system must be able to retain all data in authorized MARC21 fields.

3.4.12.1.3 The system must be able to retain data found in local fields, including:

- a. 010S$sm Marcive TMP number
- b. 010S$so Original record number, including Marcive, OCLC, RLIN
- c. 035 (all subfields)
- d. 049S$a OCLC library holding codes
- e. 090S$ahfn Call number and local notes
- f. 590 (all subfields) Local notes
- g. 69x (all subfields) Local subject headings
- h. 79x (all subfields) Local added entries
- i. 899 (all subfields) Local series headings
- j. 904S$a Local heading
- k. 950S$a$sb Local call number
- l. 950S$d Local stamp above the call number
- m. 950S$e Local stamp below the call number
- n. 950S$l Location codes (RLIN version, not 9xxxxx version)
- o. 950S$n Local notes
- p. 950S$vyz Local volume number
- q. 955S$c Local notes
3.4.12.1.4 The system **must** be able to retain the DRAClassic database control number (MARC21 field 001) in an indexed field.

3.4.12.2 Authority Records

3.4.12.2.1 The system **must** be able to load all DRA Classic authority records in MARC21 format into the new system regardless of status and encoding level. (As of 2/2/06, there are 230,000 MARC21 authority records.)

3.4.12.2.2 The system **must** be able to retain all data found in authorized MARC21 fields.

3.4.12.2.3 The system **must** be able to retain the DRAClassic database control number (MARC21 field 001) in an indexed field.

3.4.12.3 Item Records

The system **must** be able to capture non-standard item data and convert it to MARC21 holdings data, including at least the following: (As of 2/2/06, there are 2 million item records.)

3.4.12.3.1 Ability to capture and retain the 13-digit bar code number.

3.4.12.3.2 Ability to capture and retain the link between item record data and bibliographic records.

3.4.12.3.3 Ability to capture and migrate call number and volume number data.

3.4.12.3.4 Ability to capture and migrate shelf location information.

3.4.12.3.5 Ability to capture and migrate location data.

3.4.12.3.6 Ability to capture and migrate material-type data.

3.4.12.3.7 Ability to capture and migrate item notes.

3.4.12.3.8 Ability to capture and migrate circulation status (i.e., does the item circulate).

3.4.12.3.9 Ability to capture and migrate item usage historical data.
3.4.12.3.10 Ability to capture and migrate current item status (charged, missing, etc).

3.4.12.4 Serials Data

The system must be able to capture non-standard serial holdings data and convert it to MARC21 holdings data:

3.4.12.4.1 Ability to capture and migrate serials holding data (e.g. number of copies and format).

3.4.12.4.2 Ability to capture and migrate serials receipt data (e.g., frequency, supplier, claimed issues, and missing issues).

3.4.12.4.3 Ability to capture and migrate call number and volume number data.

3.4.12.4.4 Ability to capture and migrate shelf location information.

3.4.12.4.5 Ability to capture and migrate location data.

3.4.12.4.6 Ability to capture and migrate material-type data.

3.4.12.4.7 Ability to capture and migrate notes.

3.4.12.4.8 Ability to capture and migrate circulation status (i.e., does the item circulate).

3.4.12.5 Circulation Data

3.4.12.5.1 The system must be able to capture and migrate borrower data for individuals, including:
   a. Borrower name
   b. Home address
   c. Employer
   d. Work address
   e. Home phone
   f. Work phone
   g. Email addresses
   h. Verification status
   i. Delinquent status
   j. Type of borrower
   k. Current items out, missing, and lost
   l. Bar code number
   m. DRA database control number.
3.4.12.5.2 The system **must** be able to capture and migrate borrower data for organizations, including:
   a. Organization name
   b. Address
   c. Phone
   d. Contact person
   e. Email addresses
   f. Status
   g. Type of borrower (22 borrower classes)
   h. Current items out, missing, and lost
   i. Bar code numbers assigned to the organization.
   j. DRA database control numbers.

3.4.12.6 Acquisitions Data

3.4.12.6.1 The system should be able to capture and migrate order information for all open orders, including status and claim data.

3.4.12.6.2 The system should be able to capture and migrate all current year fund data.

3.4.12.6.3 The system should be able to capture and migrate all current year invoice information.

3.4.12.6.4 The system should be able to capture and migrate supplier information. (As of 2/2/06, there are 5,500 supplier (vendor) records in DRA Classic format.)

3.4.13 Record Loading Requirements

3.4.13.1 The system **must** allow library staff to load bibliographic and authority records interactively from the OCLC Connexion Client into the local system.

3.4.13.2 The system should allow library staff to load holdings data in the *MARC21 Format for Holdings Data* (MFHD) from the OCLC Connexion Client into the local system.

3.4.13.3 The system **must** allow library staff to load in batch mode files of bibliographic records from Marcive, Inc., sent via FTP using the MARC21 communications format, into the local system.

3.4.13.4 The system **must** have the option to combine and overlay incoming bibliographic and authority records using library-defined match points.
3.4.13.5 The system must have the option to identify incoming duplicate bibliographic and authority records using library-defined match points.

3.4.13.6 The system should allow library staff to define fields that will not be overlaid during a record import process.

3.4.13.7 The system should allow library staff to download records in batch mode from the OCLC WorldCat database into the local system.

3.4.13.8 The system should allow library staff to download bibliographic and authority records via Z39.50 client connections into the local system.

3.4.13.9 The system should allow staff to import full MARC21 bibliographic records from other MARC21 databases.

3.4.13.10 The system should allow staff to import bibliographic information from a book jobber or supplier’s database.

3.4.14 Record Extract Requirements

3.4.14.1 The system must have the ability to extract the following types of subsets of bibliographic, holdings and authority records in the MARC21 communications format:

- New records added during a specified date range
- Records edited during a specified date range
- Records deleted during a specified date range
- Records that match a value in a variable field
- Snapshot of all the records in the system

3.4.14.2 The system must have the ability to exclude selected records from extracts, based on such attributes as location, status, and encoding level.

3.4.14.3 The system should have the ability to include holdings data in the MFHD format in bibliographic record extracts.

3.4.14.4 The system should allow library staff to submit record updates to the University of California’s Melvyl Catalog via a weekly or monthly extract that meets the Standard for University of California Union Catalog Input Records (http://www.cdlib.org/libstaff/catalog/STANDARDapproved12-01-r-3-18-02.rtf).

3.4.14.5 The system must be able to easily export bibliographic and holdings data to commercial software packages, including Inmagic Inc’s TextWorks module.
3.4.15 Interfaces with Other Libraries via Z39.50

3.4.15.1 The system **must** have the ability to search other library systems via Z39.50 search and retrieval queries.

3.4.15.2 The system **must** have the ability to respond to Z39.50 search and retrieval queries from other library systems.

3.4.15.3 The system should have the ability to control the systems from which Z39.50 queries will be accepted.

3.4.15.4 The system should have the ability to serve, retrieve and display holdings data in the *MARC21 Format for Holdings Data* via Z39.50.

3.4.16 Other Interface Functions

3.4.16.1 The system should be able to export and import records as Metadata Encoding and Transmission Standard (METS) objects (http://www.loc.gov/mets/)

3.4.16.2 The system should be able to export and import records in Metadata Object Description Schema (MODS) (http://www.loc.gov/standards/mods/mods-overview.html)

3.4.16.3 The system should be able to serve as an Open Archives Initiative (OAI) Data Provider (http://www.openarchives.org/OAI/openarchivesprotocol.htm)

3.4.16.4 The system should be able to exchange messages with other systems via Simple Object Access Protocol (SOAP) (http://www.w3.org/TR/soap12-part1/)

3.4.16.5 The system should be able to provide Web services to other systems and to incorporate Web services from other systems via APIs (http://www.w3.org/2002/ws/Activity)

3.4.16.6 The system should be able to accept, display and output information in the ONIX format. (http://www.editeur.org/onix.html)

3.4.17 Standards Requirements

3.4.17.1 MARC21 Formats and Related Standards

3.4.17.1.1 The system **must** comply with the current versions of the MARC 21 Formats and Related Standards, including:
a. ANSI/NISO Z39.2 Information Interchange Format
(http://www.niso.org/standards/index.html)

b. MARC 21 Format for Bibliographic Data
(http://www.loc.gov/marc/)

c. MARC 21 Format for Authority Data
(http://www.loc.gov/marc/)

d. MARC 21 Specifications for Record Structure, Character Sets and Exchange Media (and referenced standards, including support for Unicode) (http://www.loc.gov/marc/)

i. ANSI/NISO Z39.47 Extended Latin Alphabet Coded Character Set for Bibliographic Use (ANSEL).
(http://www.niso.org/standards/index.html)

ii. ANSI/NISO Z39.64 East Asian Character Code for Bibliographic Use
(http://www.niso.org/standards/index.html)

iii. USC/Unicode
(http://www.loc.gov/marc/specifications/speccharucs.html)

e. ANSI/NISO Z39.71 Holdings Statements for Bibliographic Items (http://www.niso.org/standards/index.html)

f. MARC 21 Format for Holdings Data
(http://www.loc.gov/marc/)

3.4.17.1.2 The system should comply with the current version of the Dublin Core standard, ANSI/NISO Z39.85 Dublin Core Metadata Element Set (http://www.niso.org/standards/index.html)

3.4.17.2 Z39.50 Search and Retrieval

3.4.17.2.1 The system must comply with the current version of the Z39.50 search and retrieval standards:

a. ANSI/NISO Z39.50 Information Retrieval (Z39.50):
Application Service Definition and Protocol Specification
(http://www.niso.org/standards/index.html)

3.4.17.3 OpenURL Framework

3.4.17.3.1 The system must comply with the current version of the OpenURL standard, ANSI/NISO Z39.88 The OpenURL Framework for Context-Sensitive Services (http://www.niso.org/standards/index.html)

3.4.17.4 Circulation Standards

3.4.17.4.1 The system should comply with the current version of the NCIP standard, ANSI/NISO Z39.83 Circulation Interchange Part 1 (NCIP) and 2 (Profile 1) (http://www.niso.org/standards/index.html)

3.4.17.5 Other Relevant Data Interchange Standards

3.4.17.5.1 The system must comply with the ASC X12 (X12 EDI, XML, and UN/EDIFACT formats for data interchange, http://www.x12.org) and BISAC (http://www.bisg.org/standards/index.html)

3.4.17.5.2 The system must comply with the ANSI/NISO Z39.56 Serial Item and Contribution Identifier (SICI) (http://www.niso.org/standards/standard_detail.cfm?std_id=530)

3.4.17.5.3 The system must comply with the SISAC (barcode label format for SICI codes, http://www.barcodeisland.com/sisac.phtml)

3.4.17.5.4 The system must comply with the ISO standards for interlibrary loan, 10160 and 10161. (http://www.lac-bac.gc.ca/iso/ill/)

3.4.17.5.5 The system should comply with the Standard for University of California Union Catalog Input Records (http://www.cdlib.org/libstaff/catalog/STANDARDapproved12-6-01-r-3-18-02.rtf).

3.4.17.5.6 The system must comply with the HTML, HyperText Markup Language (HTML) (http://www.w3.org/MarkUp/)

3.4.17.5.7 The system must comply with the XML, Extensible Markup Language (XML) (http://www.w3.org/TR/REC-xml/)
3.4.17.5.8 The system should comply with the *Metadata Encoding and Transmission Standard (METS)* ([http://www.loc.gov/standards/mets/](http://www.loc.gov/standards/mets/))

3.4.17.5.9 The system should comply with the *Metadata Object Description Schema (MODS)* ([http://www.loc.gov/standards/mods/mods-overview.html](http://www.loc.gov/standards/mods/mods-overview.html))

3.4.17.5.10 The system should comply with the *Open Archives Initiative (OAI)* ([http://www.openarchives.org/OAI/openarchivesprotocol.htm](http://www.openarchives.org/OAI/openarchivesprotocol.htm))

### 3.4.18 Online Public Access Catalog Requirements

#### 3.4.18.1 General

3.4.18.1.1 The system **must** provide Web-based interfaces for the library's two online public access catalogs (OPAC's): the Main Catalog and the Picture Catalog.

3.4.18.1.2 The system should be able to support Web-based interfaces for additional CSL catalogs.

3.4.18.1.3 Library staff **must** have the ability to modify the look and feel of the catalogs.

3.4.18.1.4 It should be possible to develop and display OPAC screens in various languages, such as Spanish, and in non-roman languages, such as Chinese.

3.4.18.1.5 It should be possible to search and display using ideographs and non-roman scripts.

3.4.18.1.6 The system **must** include a patron authentication function, which verifies patron membership and status and level of access, in order to link directly to online subscription databases, E-books, E-journals, place reserves, etc.

3.4.18.1.7 The web catalogs **must** not require software to be loaded or maintained on a client workstation, other than a standard web browser.

3.4.18.1.8 When clicking on a link that leads outside one of the catalogs, the system should open a new window and the catalog should remain on the desktop.
3.4.18.1.9 The system must provide a secure interface between an authorized borrower and his or her own circulation record, and block access to circulation records of all other borrowers.

3.4.18.1.10 Patrons should be able to email reference questions to the library from the online catalogs.

3.4.18.1.11 The system should have the ability to display device-friendly catalog screens on a handheld, small screen, mobile computing device such as a personal digital assistant.

3.4.18.1.12 The system should have the ability to display a message showing the user how to delete search history to preserve privacy.

3.4.18.1.13 It should be possible to merge the display of bibliographic records that represent different manifestations of the same work (as described in Functional Requirements for Bibliographic Records Final Report, http://www.ifla.org/VII/s13/frbr/frbr.pdf)

3.4.18.1.14 The Web Catalog must be compatible with the latest Web Content Accessibility Guidelines as published by the W3C, http://www.w3.org/TR/WAI-WEBCONTENT/


3.4.18.2 Catalog Content

3.4.18.2.1 The catalogs must be able to retrieve and display bibliographic records that contain any valid combination of MARC21 leader values in positions 05 (Record status, other than “d”), 06 (Type of record), and 07 (Bibliographic level).

3.4.18.2.2 Authorized library staff should be able to suppress the display of specific bibliographic records from the catalogs.

3.4.18.2.3 Brief bibliographic records created for “on-the-fly” circulation should be able to be searched and displayed in the catalogs.

3.4.18.2.4 The system must support enriched bibliographic displays that can include data and images supplied by the vendor, the library, or a third party, such as cover art, table of contents, summaries, and reviews.
3.4.18.2.5 The catalogs must allow the display of "virtual" bibliographies by having the ability to retrieve and display bibliographic records based on data in local fields, such as in the 904$a field.

3.4.18.2.6 The Main Catalog must support the searching of other libraries' catalogs via the Z39.50 standard.

3.4.18.2.7 The Picture Catalog must be able to display images and thumbnails via 856 field links.

3.4.18.3 General Search Features

3.4.18.3.1 The catalogs must allow searching of any indexed data element or combination of indexed elements, as defined in the General Functions section.

3.4.18.3.2 The system should be able to search Dublin Core metadata.

3.4.18.3.3 A search for author, title or subject that results in no hits should automatically display the browse headings in the alphabetic range of the searched term, with an appropriate message such as “Your term XXX would appear here.”

3.4.18.3.4 If there are no hits for an author search, in addition to displaying a browse list, the system should offer a search with the names in reverse order.

3.4.18.3.5 Browse searches must support implicit truncation.

3.4.18.3.6 The system should be able to support searches with a wildcard symbol for individual letters within a word.

3.4.18.3.7 The system should be able to support searches using a truncation symbol for the end of a word.

3.4.18.3.8 If a search results in “zero” or “no hits,” the system should display the search term(s) that were typed.

3.4.18.3.9 The system should contain a spell-checking feature to identify incorrectly spelled words and give suggestions for other possible spellings.

3.4.18.3.10 The spell-check feature should be subject to being enabled or disabled at the user’s discretion.
3.4.18.3.11 If a stop word list for keyword searching is included with the system, the library **must** be able to define and edit the list.

3.4.18.3.12 If a stop word list for keyword searching is included with the system, it should be possible for the user to override a particular stopword when necessary: for example, to search for the title “It.”

3.4.18.3.13 The system should recognize and search variant spellings (e.g. grey and gray, color and colour).

3.4.18.3.14 It **must** be possible to automatically generate cross references from an authority record, and refer catalog users to the authorized heading, using a detailed cross reference structure for the following references:

   a. See (fields 1XX, i.e., the established heading)
   b. See from (fields 4XX)
   c. See also from (fields 5XX)
   d. See also special relationships (derived from field 550 $w, e.g., earlier or later heading, narrower or broader terms)

3.4.18.3.15 The system **must** inform the user if the search term used is a “see” or “see also” cross reference and allow the user to select the authorized form. For example, the system could either:

   a. go to a new authority browse screen with that authorized heading,
   b. take the user directly to the correct heading with an explanation of what happened.

3.4.18.3.16 **It must** be possible to block automatically the display of cross references generated by 1xx and 5xx fields in authority records if the cross references do not match any heading in a bibliographic record.

3.4.18.3.17 The library should be able to designate what the default search mode is if the user does not specify author, title, subject, or keyword.

3.4.18.3.18 The system should ignore punctuation, capitalization and diacritics in searches entered by users.

3.4.18.3.19 The user interface should permit hitting the “enter” key to initiate a search or to click on a “Search” button to initiate a search.

3.4.18.3.20 The system should identify the database or catalog being searched on each screen.
3.4.18.3.21 The system should warn the user if a search will retrieve a large set of search results.

3.4.18.3.22 The system should prompt the user to limit extremely large searches, so as not to impact system response time.

3.4.18.3.23 Upon viewing results from a basic search, users should have options, such as refining the search without re-keying, going to an advanced search for more options, or beginning a new search.

3.4.18.3.24 The system should display the number of hits for each search.

3.4.18.3.25 The system should be able to search by a range of call numbers, (e.g. KF4200-KF4280).

3.4.18.4 Search Screens

3.4.18.4.1 Basic search options should be visible/accessible on the opening search screen, including ready access to “search tips” and/or a “help screen.”

3.4.18.4.2 The system should support search screen(s) which assist the user in searching by:
   a. Author headings
   b. Author keyword
   c. Title phrase
   d. Title begins with
   e. Title keyword
   f. Subject headings
   g. Subject keyword
   h. Series
   i. Notes
   j. Keyword
   k. Call number
   l. ISBN/ISSN
   m. LC control number
   n. Reference number
   o. Original record number
   p. Local Data Base Control Number

3.4.18.4.3 Search screen(s) should support complex searches using Boolean commands.

3.4.18.4.4 The search box should provide adequate space (more than 100 characters) for complex command line searching.
3.4.18.5 Displays

3.4.18.5.1 The user should have the option to display detailed holdings.

3.4.18.5.2 The system should allow the library to decide where and how holdings are displayed on a results screen (e.g. in a box near the title info. vs. at the bottom of the full bibliographic record).

3.4.18.5.3 The holding records (holdings display) for the location where a search is conducted should be displayed first.

3.4.18.5.4 Off-site users should be able to select which location appears first in holding listings.

3.4.18.5.5 The library should have the ability to designate the default location for holding listings if an off-site user does not choose a default location.

3.4.18.5.6 The system should allow the user to sort bibliographic results by author, title and date (chronological and reverse chronological).

3.4.18.5.7 The system should allow sorting by other parameters, such as location or series number.

3.4.18.5.8 The system should allow the library to define the default sort for the display of search results.

3.4.18.5.9 Series numbers should sort in the correct number order rather than computer order.

3.4.18.5.10 The system should allow users to create a customized My Library Page interface.

3.4.18.5.11 The system should allow patrons to select individual or all records from a hitlist to include in a personal listing of materials.

3.4.18.5.12 The user should be able to print, email, and download his/her personal listing of materials.

3.4.18.5.13 The system should permit the user to format his/her personal listing of materials in a standard bibliography output.

3.4.18.5.14 The system should permit the user to download results in various formats such as ASCII, RTF, MARC21 or other options.

3.4.18.5.15 The library should have the option to display date-due information for charged items.
3.4.18.5.16 An authorized catalog user should be able to generate a request for an item not found in the CSL catalogs, but found on other online resources.

3.4.18.5.17 It must be possible to initiate a new search by clicking on a hot linked author, subject heading or added entry in catalog displays.

3.4.18.5.18 For headings with multiple subfields, it should be possible to select one or more of the initial subfields to initiate a new search. For example, in the heading Backpacking – California – guidebooks it should be possible to click on California and initiate a search for Backpacking – California.

3.4.18.5.19 The library should have the ability to customize the wording on circulation status messages. (For example, if the system-supplied status is “available,” the library can change the display to “not checked out.”)

3.4.18.5.20 At public workstations, after a library-selected period of inactivity, the catalogs should return to a welcome page and clear search history information.

3.4.18.5.21 It should be possible to set a different default time-out for the catalogs on staff workstations than the default set on public workstations.

3.4.18.5.22 The system should permit navigating between screens, backwards or forwards, for bibliographic, holdings or authority displays, using either the browser’s forward and back buttons and/or system navigation buttons.

3.4.18.5.23 The system should have the ability to move to a specific item in a list display, such as “Jump to item 20” or “Display entry 20.”

3.4.18.5.24 The system should have a “clear search” option.

3.4.18.5.25 The user should have the option to display a bibliographic record in the MARC21 format.

3.4.18.5.26 The system should allow the library to decide what holdings information is displayed with the MARC21 record display.

3.4.18.6 Requests

3.4.18.6.1 System must allow authorized borrowers to place requests on items.
3.4.18.6.2 The system should allow borrowers to select among options for delivery when placing a request.

3.4.18.6.3 It should be possible to place requests on an on-order title before it is received.

3.4.18.6.4 It should be possible for borrowers to cancel their own requests.

3.4.18.6.5 It should be possible for borrowers to receive immediate notification of a successful online request.

3.4.18.6.6 It should be possible for borrowers to receive immediate notification and explanation of a failed online request.

3.4.18.6.7 It should be possible for borrowers to view a list of his or her own requests, including the date a request was placed.

3.4.18.7 Help Screens

3.4.18.7.1 Help should be accessible from every screen and should be context sensitive.

3.4.18.7.2 It should be possible to create help pages in the multiple languages used in the catalog interfaces and to link them to the appropriate catalog screens (i.e., Help screens would be in Spanish when a Spanish interface is being used).

3.4.18.7.3 Help should be keyword searchable.

3.4.18.7.4 Users should be able to return to their last display after viewing help.

3.4.19 Authority Control Requirements

3.4.19.1 General

3.4.19.1.1 Only authorized staff should be able to add, edit and delete authority records.

3.4.19.1.2 The system should validate headings in new or updated bibliographic records against existing authority records and provide notification of headings that do not match.
3.4.19.1.3 The system should support hierarchical validation of individual subfields within headings in bibliographic records (e.g., validate $a first, then $b, etc.)

3.4.19.1.4 An authorized user should be able to generate by a single command a new, brief authority record from an existing heading in a bibliographic record.

3.4.19.1.5 The system should not require an authority record for every heading used in a bibliographic record.

3.4.19.1.6 It should be possible to determine in a bibliographic record display which bibliographic headings are represented by established authority records.

3.4.19.1.7 It should be possible to create reports of new, changed, and conflicting headings, based on user defined parameters.

3.4.19.1.8 It should be possible to automatically link author/title authority records to author/title combinations of MARC21 tags (e.g., 100/240, 700 $t) occurring in bibliographic records.

3.4.19.1.9 The system should accept and allow maintenance of separate databases of various thesauri.

3.4.19.1.10 The system should provide for the addition of cross-references between and among databases of various thesauri.

3.4.19.1.11 It should be possible to index, retrieve, and display authority records from a variety of sources (e.g., LC name and subject authorities, standard lists such as genre and rare book cataloging terms), and locally-produced authorities.

3.4.19.1.12 If multiple thesauri are used, the system should be able to identify the source for the heading and cross-references in displays.

3.4.19.1.13 It should be possible to validate headings against authority records on systems external to the system.

3.4.19.1.14 It should be possible, in a hitlist display of headings, to distinguish headings by their source.

3.4.19.1.15 If an authority record is valid for both name and subject headings (fields 008/14 and 008/15), then it should be possible to validate both name headings and subject headings in bibliographic records by using the single authority record.
3.4.19.1.16 It should be possible to produce a report of authority records with 1xx fields that do not match any heading in any bibliographic record.

3.4.19.2 Importing Authority Records

3.4.19.2.1 It must be possible to import authority records both interactively and as a batch process.

3.4.19.2.2 It must be possible to overlay existing authority records in the local system with authority records from OCLC and other bibliographic utilities.

3.4.19.2.3 It should be possible to overlay existing authority records as a batch process.

3.4.19.3 Deleting Authority Records

3.4.19.3.1 It must be possible for an authorized user to manually delete authority records.

3.4.19.3.2 The system should warn the user before deletion of an authority record that has corresponding bibliographic records.

3.4.19.4 Global Search and Replace

3.4.19.4.1 A change to an authorized heading in an authority record must allow for a global change to all bibliographic records containing that heading.

3.4.19.4.2 The system should allow global change functionality of specific strings within specific fields or subfields.

3.4.19.4.3 It should be possible to make global changes to tags, indicators, subfield codes as well as subfield indicators, e.g., $xFiction to $vFiction.

3.4.19.4.4 It should be possible to make global changes to:

   a. all subfields of a variable field
   b. selected subfields of a variable field
   c. fixed field codes.

3.4.19.4.5 It should be possible to run global changes as a background process or an interactive process.
3.4.19.4.6 It should be possible to run global changes on a full database or any operator staff-selected subset.

3.4.19.4.7 Global changes done as a real-time manual process should provide the option to prompt for confirmation before each change.

3.4.19.4.8 Global change processes, whether performed as a batch or interactively, should have the option to produce a report of the records changed.

3.4.19.4.9 It should be possible to perform global edits in a "test only" mode for review purposes before the changes actually occur in the bibliographic database.

3.4.20 Cataloging Requirements

3.4.20.1 General

3.4.20.1.1 The system should accept and display brief (i.e., incomplete) bibliographic records that contain only a 245 field and minimal data in field 008 and the record leader.

3.4.20.1.2 It should be possible to flag and report MARC21 records as incomplete.

3.4.20.1.3 It should be possible to validate links (URL’s) in batch that are found in the 856 field and other MARC21 fields allowing URL links.

3.4.20.1.4 It should be possible to produce a report of invalid URL links found in the 856 field and other MARC21 fields allowing URL links.

3.4.20.1.5 Holdings information must remain attached to a bibliographic record when the bibliographic record is overlaid with a new bibliographic record.

3.4.20.1.6 Order information must remain attached to a bibliographic record when the bibliographic record is overlaid with a new bibliographic record.

3.4.20.1.7 Circulation information must remain attached to a bibliographic record when the bibliographic record is overlaid with a new bibliographic record.
3.4.20.1.8 **It must** be possible to validate tagging, indicators, subfields, and leader and fixed field codes in records when importing records from OCLC and when creating original records on the ILS to ensure the presence, absence and accuracy of minimum required data elements.

3.4.20.1.9 Validation routines for imported records should:

a. check for attempts to repeat a non-repeatable field or subfield,
b. check for consistency of MARC21 coding (e.g. the system should be able to confirm the presence of any field mandated by the presence of another such as 490 1_ and 830),
c. compare data in related fixed and variable fields (e.g. date in 260),
d. validate ISBNs and ISSNs using check digits.

3.4.20.1.10 The system should allow override of any machine-generated block resulting from validation routines.

3.4.20.1.11 It should be possible to update validation rules as changes to the MARC21 standards are implemented by the Library of Congress and OCLC.

3.4.20.1.12 During a batch load of bibliographic records, the system **must** be able to delete a local bibliographic record if a matching record in the batch load contains the value “d” in Leader position 05.

3.4.20.1.13 The system should provide a spell check feature, which allows for the addition and deletion of words.

3.4.20.1.14 The system should suggest spelling alternatives.

3.4.20.1.15 The system should include default bibliographic input forms, differentiated by material format.

3.4.20.1.16 The system should include default authority input forms, differentiated by names, subject, series, etc.

3.4.20.1.17 It should be possible to define the display screen and the mnemonic labels for inputting fixed field data.

3.4.20.1.18 The system should allow for inputting and editing of non-Roman characters, diacritics and special characters in all MARC21 record types.
3.4.20.1.19 It should be possible to identify the library staff member who added or modified records, and/or specific data within a record.

3.4.20.1.20 It should be possible for a staff member to display a list of recently edited records.

3.4.20.2 Holdings Maintenance

3.4.20.2.1 When adding multi-volume sets or serial issues, the system should automatically sort them to display in numerical volume, chronological or some other library-defined logical pattern on a record-by-record basis.

3.4.20.2.2 The system should allow manual reordering of holdings records with a method to mark the holdings list so that records are not automatically returned to the default order.

3.4.20.2.3 The system should prevent the creation or existence of holdings records that are not attached to bibliographic records.

3.4.20.2.4 The system should prevent deletion of a bibliographic record that has attached holdings.

3.4.20.2.5 The system should allow changing the holdings of a run of volumes or all holdings within a call number range (or other library staff-selected parameters) as a batch process (e.g., if a range of call numbers is being moved from one shelving category to another, or if a call number is being changed on a run of volumes.)

3.4.20.2.6 In bibliographic records with multiple holdings, it should be possible to easily search for and display an individual holding.

3.4.20.2.7 The system should provide a way to transfer all holdings or selected holdings from one bibliographic record to another.

3.4.20.2.8 The system should prevent duplicate use of the same barcode.

3.4.20.2.9 Holdings should be able to be represented in a summary record, a piece record, or both.

3.4.20.2.10 The system should accommodate an unlimited number of copies/items and summary holdings linked to a single bibliographic record.
3.4.20.2.11 The enumeration fields should allow a wide range of values including Arabic numbers, Roman numerals, alphanumeric values, names of months and seasons, etc.

3.4.20.2.12 It should be possible to transfer acquisitions and circulation information from a brief bibliographic record to a full bibliographic record.

3.4.20.2.13 It should be possible to override supplied default values either individually, or by setting new temporary defaults for the duration of the session (e.g., location, material code.)

3.4.20.2.14 It should be possible to input, edit, and display a minimum of 100 characters in the volume, call number, shelf location and notes of the item record.

3.4.20.2.15 Withdrawn item records should be detached from bibliographic records but still be stored within the system until purged.

3.4.20.2.16 When the last item is withdrawn it should be possible to delete the bibliographic record immediately.

3.4.20.3 Printing

3.4.20.3.1 The system should allow printing of reports, labels and records on standard configured printers from any PC workstation or networked printer either on continuous feed or single sheet paper.

3.4.20.3.2 The system should accommodate both batch printing and real-time printing.

3.4.20.3.3 It must be possible to print spine, call number and other labels with a variety of options, based on information in bibliographic and/or MFHD records (e.g., department name, shelving location, call number, enumeration, main entry, title.)

3.4.20.3.4 It should be possible to print multilingual characters, including diacritics and non-Roman alphabets on labels.

3.4.20.3.5 It should be possible to print label sets during the item-adding process according to session defaults set at the start of the session.

3.4.20.3.6 Label printing defaults should allow specifying the number of each type of label to be printed for each item.

3.4.20.3.7 It should be possible to add items without printing labels.
3.4.20.3.8 The system should automatically print call number prefixes (e.g., shelf locations) and suffixes (e.g., enumerations) on labels in a library-specified order.

3.4.20.3.9 It should be possible to derive all call number prefixes and suffixes for label printing from information in the item or bibliographic records.

3.4.20.3.10 It should be possible to create templates for printing labels.

3.4.20.3.11 It should be possible to preview label printing jobs.

3.4.20.3.12 The system should allow use of a variety of standard off-the-shelf label sizes.

3.4.20.3.13 It should be possible to print individual bibliographic records in either MARC or non-MARC format in their entirety, by using a single command.

3.4.20.3.14 It should be possible to print individual shelflist cards based on information from the bibliographic and holdings records.

3.4.21 Circulation Requirements

3.4.21.1 General

3.4.21.1.1 The system must be able to use the Library's current format for bar code numbers and labels for both items and borrowers.

   a. The bar code format is 12-digit Codabar with one check digit (Modulus 10 formula, option 2).
   b. The first 5 digits of item bar code numbers are "02007"; the first 5 digits of borrower bar code numbers are "12007."
   c. Both item and borrower bar code labels have a barcode density of 10.0 characters per inch.

3.4.21.1.2 Since the library often distributes multiple borrower cards in the name of a single organization, the system must be able to convert and maintain DRAClassic borrower records that are identical in all data fields (except for the bar code number and database control number fields).
3.4.21.2 Checkin/Checkout

3.4.21.2.1 It should be possible to calculate loan periods automatically based on a library-defined defaults for borrower classes and material types.

3.4.21.2.2 Staff members should be able to display all library-defined circulation defaults, such as the default loan period for a type of material.

3.4.21.2.3 It should be possible for authorized staff to easily change the loan period for an item.

3.4.21.2.4 It should be possible for authorized staff to override the non-circulating status of an item and set a loan period via an easy-to-use method, such as a drop down menu with different load periods (e.g. 21-days, 7-days, 45-days, 1-day, etc.) that staff can select on-screen.

3.4.21.2.5 The system should support loan periods of less than one day (such as a loan period in hours).

3.4.21.2.6 It should be possible to create brief (i.e., on-the-fly) bibliographic records while in the circulation module when no bibliographic record exists for an item to be checked out.

3.4.21.2.7 Data fields in on-the-fly bibliographic records should be indexed.

3.4.21.2.8 It should be possible for the system to print receipts for circulation transactions, including due date slips and receipts for items returned that include barcode, book title and date due.

3.4.21.2.9 It should be possible to print all information associated with a borrower's record with a single command.

3.4.21.2.10 The system should require a borrower's ID number to be scanned or name to be keyed only once when checking out items regardless of the number of items being checked out.

3.4.21.2.11 It should be possible to renew materials by scanning the barcodes or by displaying all of the items checked out to a borrower and renewing them by selecting the items.

3.4.21.2.12 The system should include a renewal counter so that staff can view how many times an item has been renewed by the current borrower.
3.4.21.2.13 The system should allow the library to set the following circulation thresholds for each class of borrower:

a. Maximum number of items charged  
b. Maximum number of overdue items  
c. Maximum amount of money owed  
d. Maximum number of lost items

3.4.21.2.14 When a borrower record that has reached a circulation threshold is displayed, both a visible and an audible warning should occur, along with a display that identifies the threshold that has been reached.

3.4.21.2.15 Authorized staff should be able to manually add a block to a borrower account.

3.4.21.2.16 An authorized staff member should need to override only once during a checkout or renewal of an item regardless of the number of thresholds or blocks that the borrower has reached, rather than having to override multiple times because a borrower has reached more than one threshold, such as renewed too many times, the borrower has too many overdues, or owes too much money.

3.4.21.2.17 It should be possible to set an automatic reset timer in the checkout mode, to safeguard against accidentally checking an item out to the previous borrower.

3.4.21.2.18 It should be possible to support two types of check-in:

a. Standard check-in.  
b. In-house check-in, for all materials used-but-not-charged within the library each day

3.4.21.2.19 It should be possible to use client software on PCs to checkout and checkin materials “offline” when the ILS system is not functioning.

3.4.21.2.20 The “offline” transactions on PCs should be date/time stamped to ensure correct processing when they are uploaded to the ILS.

3.4.21.2.21 It should be possible to upload the “offline” transactions over the wide area network.

3.4.21.2.22 The system should sever the link between the item and the user at check-in.
3.4.21.2.23 The system should provide the ability to retain inactive borrower records, until authorized staff explicitly purge the records.

3.4.21.2.24 The system should provide the ability to retain expired borrower records, until authorized staff explicitly purge the records.

3.4.21.2.25 The system should provide an alert at checkout if a borrower barcode is scanned when the system is expecting an item barcode, and vice-versa.

3.4.21.3 Transfers between Locations

3.4.21.3.1 It should be possible for staff to route items between library locations.

3.4.21.3.2 It should be possible to change the shelving location of an item regardless of the item's circulation status (e.g., while an item has a status of charged or on-hold).

3.4.21.3.3 It should be possible to automatically print a slip indicating the destination of a routed item.

3.4.21.4 Self-service Renewals

3.4.21.4.1 It should be possible for borrowers to renew materials via the Internet.

3.4.21.5 Searching for Materials

3.4.21.5.1 The circulation module must allow searching of any indexed data element or combination of indexed elements, as defined in the General Functions section.

3.4.21.5.2 It should be possible to limit or sort search results for bibliographic records in all circulation processes by:

a. Location  
b. Material Type  
c. Publication date  
d. Language  
e. Volume number
3.4.21.6 Searching for Borrower Records

3.4.21.6.1 It should be possible to search for borrower records in all circulation processes by:

a. Name
b. Address
c. Telephone number
d. E-mail address
e. Unique system assigned record number
f. Company name
g. Library card #
h. Combination searches (e.g. borrower name and address)

3.4.21.6.2 Searches of borrower records should ignore interior punctuation and spacing.

3.4.21.7 Display of Materials

3.4.21.7.1 Display results should conform to the standard brief and full bibliographic displays described in the General Functions section of this document.

3.4.21.7.2 Bibliographic data record displays in circulation processes should also include:

a. Item barcode numbers
b. Item locations, including destination for routed items
c. Item status
d. Circulation information
   i. Date of last circulation
   ii. Total number of circulations
   iii. Acquisition Date

3.4.21.7.3 It should be possible to sort the results of a search by shelving location.

3.4.21.7.4 When each volume in a serial or monographic set is also cataloged individually, the system should display appropriate item and circulation information for the set and individual volumes.

3.4.21.7.5 When two (or more) individual volumes, each with its own catalog records, are "bound with" each other in a single physical volume, the system should display the appropriate circulation information for the single physical volume and for each of the catalog records that describes one of the individual volumes it contains.
3.4.21.8 Display of Borrower Records

3.4.21.8.1 It should be possible to sort a borrower’s “has now” list by:
   a. shelving location
   b. date originally borrowed
   c. by date due.

3.4.21.9 Fees/Accounting

3.4.21.9.1 Library staff must be able to set the amount charged for each lost or damaged item.

3.4.21.9.2 It should be possible to adjust all charges on an incident-by-incident basis.

3.4.21.9.3 It should be possible to automatically change an item status from “claims returned” to “lost” after a library-specified period of time.

3.4.21.9.4 Borrower records should include a “claims returned” counter that should automatically adjust all appropriate records when an item is found.

3.4.21.9.5 Borrower records should include a “charges waived” counter that should be automatically incremented when a charge is waived.

3.4.21.9.6 Charge records should include type of charge, item barcode number, author, title, and volume number.

3.4.21.9.7 It should be possible for authorized staff to enter payment or waive charges for all charges, enter partial payments and select individual charges for payment.

3.4.21.9.8 The system should support charging borrowers for a particular delivery mechanism, such as mailing books to them.

3.4.21.10 Notices

3.4.21.10.1 It should be possible to send the following types of notices via email and U.S. mail:
   a. overdue (1st, 2nd, 3rd notices)
   b. hold
   c. hold cancellation
   d. recall
   e. fine/charge
3.4.21.10.2 It should be possible for the library to determine the format and content of each notice.

3.4.21.10.3 Overdue notices should include:

a. Complete title  
b. Author  
c. Due date  
d. Library card #  
e. Volume, issue and/or date of publication  

3.4.21.10.4 Hold notices should include:

a. Pick up location  
b. Last day to pick up item  
c. Title of item  
d. Barcode  

3.4.21.10.5 It should be possible for the library to set the intervals for notifications using library-defined defaults that are linked to the class of the borrower.

3.4.21.10.6 It should be possible to issue notices by category or status of borrower.

3.4.21.10.7 It should be possible to specify which of the multiple address fields in the borrower record, including email address, is the notice address.

3.4.21.10.8 It should be possible to sort notices to be printed in separate runs: borrower type, hold/recall, etc.

3.4.21.10.9 If an email notice is bounced back, staff should be able to print a paper notice.

3.4.21.11 Borrower Records

3.4.21.11.1 It should be possible to create borrower records using library-defined defaults.

3.4.21.11.2 While creating or editing a borrower record, it should be possible to view and select possible values for specific fields via a display, such as a validation table or drop-down menu.
3.4.21.11.3 It should be possible to view and edit all fields in a borrower record without having to perform multiple searches for the record.

3.4.21.11.4 The system should allow the modification of data in borrower record fields without having to re-key all data in the field.

3.4.21.11.5 The system should support multiple notes in borrower records that can display during checkout.

3.4.21.11.6 It should be possible for only one user to edit a borrower record at a time.

3.4.21.11.7 It should be possible for multiple staff to view a borrower record simultaneously.

3.4.21.11.8 The system should include an “auto save” or “time out” feature that will close a borrower record when it has been opened or locked once a library-defined time threshold has been reached.

3.4.21.11.9 It should be possible to create a brief borrower record for immediate use (name, address, phone number and type of borrower) that can be retrieved later to complete the registration.

3.4.21.11.10 The system should check automatically for possible duplicate borrower records before a record is added to the borrower database.

3.4.21.11.11 The system should allow multiple borrower records that are identical in all fields other than the unique barcode number and the unique database control number fields.

3.4.21.11.12 It should be possible to automatically transfer all borrower information including fines, outstanding loans, overdue information and hold requests to a new barcode number when a borrower is re-registering or replacing a lost card.

3.4.21.11.13 The system should provide a searchable field for preferred personal name, such as nickname.

3.4.21.11.14 The system should provide a searchable field for an abbreviated organization name, such as an OCLC library code.

3.4.21.11.15 Staff members should be able to print a mailing label for any address in a borrower record.
3.4.21.12 Requests (also known as Holds, Reserves)

3.4.21.12.1 It should be possible to request any circulating item, or any item that is on order or in process.

3.4.21.12.2 It should be possible for library staff to designate certain circulating items as non-requestable.

3.4.21.12.3 It should be possible to request an item by specific volume, number, and/or year.

3.4.21.12.4 It should be possible to place requests for multiple borrowers after selecting a bibliographic record.

3.4.21.12.5 It should be possible to place requests for multiple titles after selecting a borrower’s record.

3.4.21.12.6 It should be possible to specify pick up location.

3.4.21.12.7 It should be possible for authorized staff to prioritize the hold queue for a title or item.

3.4.21.12.8 It should be possible to produce a report of holds that have remained unfilled for longer than a library-specified period of time

3.4.21.12.9 It should be possible to place item specific requests.

3.4.21.12.10 It should be possible to receive immediate notification of the successful creation of a request.

3.4.21.12.11 It should be possible to receive immediate notification and an explanation if a request transaction fails.

3.4.21.12.12 It should be possible to place requests on on-the-fly bibliographic records.

3.4.21.12.13 It should possible to sort the daily pick list by location.

3.4.21.12.14 It should be possible to generate the pick list for requests at least once per day.

3.4.21.12.15 It should be possible to set “activate” and “de-activate” dates easily for borrower requests. 
Example: Borrower places a request on 1/10/2006, but will be going on vacation for a month. It would be useful if she were able
to indicate that requests should not be trapped for her between 1/15/2006 and 2/15/2006, without losing her place in line.

3.4.21.12.16 It should be possible to notify a requesting borrower when the copy in the system is marked missing, by sending a system-generated notice to the borrower and to staff.

3.4.21.12.17 At the time a request is placed, the system should report why no item is currently available to fill the request, if none is available.

3.4.21.13 Media Booking

3.4.21.13.1 The system must have the ability to schedule and reserve the loaning of individual items and sets (such as videos and DVDs), based on future calendar dates.

3.4.21.13.2 Media booking displays should include, but not be limited to the following: author, title, call number, item barcode number, borrower name, borrower identification number, beginning and ending reservation dates, and reservation status.

3.4.21.13.3 The system should display calendars that indicate the availability of individual items.

3.4.21.13.4 It should be possible to reserve an item or a set for a specific date or a range of dates.

3.4.21.13.5 Authorized library staff should be able to set reservation defaults, such as lead-time and lag-time (time for delivery and return of items) and loan periods.

3.4.21.13.6 Authorized library staff should be able to override pre-set reservation defaults.

3.4.21.13.7 The system should provide an audible signal or notice on the screen when a booking conflict arises (e.g., a staff member attempts to reserve a video that has already been reserved for that date.)

3.4.21.13.8 The system should block the circulation of an item or set, which has been reserved for specific days, to all borrowers other than the reserving borrower.

3.4.21.13.9 It should be possible to reserve an item or a set at least twelve months in advance.

3.4.21.13.10 It should be possible to modify and cancel bookings.
3.4.21.13.11 It should be possible to search for existing reservations by author, title, call number, barcode number, borrower name, and borrower identification number.

3.4.21.13.12 It should be possible to print the list of bookings that are currently associated with an author, title, call number, barcode number, borrower name, and borrower identification number.

3.4.21.13.13 The system should be capable of printing pick lists so that staff can retrieve materials that have been booked for a specified date.

3.4.21.13.14 The system should allow staff to print a list that is limited to overdue items that are under the control of material booking.

3.4.21.13.15 The system should be capable of printing a date due slip with bibliographic information (author, title, barcode number) for inclusion with each item to be loaned.

3.4.21.14 Interlibrary Loan

3.4.21.14.1 The system should track, with minimal staff intervention, items borrowed from another library and loaned to a CSL borrower:
   a. The system should have the ability to charge items to CSL borrowers that have been borrowed from other libraries via interlibrary loan.
   b. The system should have the ability to generate overdue notices for items borrowed from other libraries via interlibrary loan that are charged to CSL borrowers.
   c. If CSL borrowed the item from another library via OCLC ILL, then the system should display a warning or note about the OCLC ILL transaction at the time the item is discharged.

3.4.21.14.2 If a CSL item has been loaned to another library, and the other library requested the item via OCLC ILL, then the system should display a warning or note about the OCLC transaction at the time the item is discharged.

3.4.21.15 Reports

3.4.21.15.1 Authorized staff should have the ability to specify, generate, and print circulation reports.

3.4.21.15.2 The system should have the ability to sort the overdue and billing reports by owning location and by call number.
3.4.21.15.3 The system should have a report that lists all items currently overdue and/or missing.

3.4.21.15.4 The system should be able to provide a list of "unclaimed holds" for items not picked up within a specified period of time.

3.4.22 Acquisitions Requirements

3.4.22.1 General

3.4.22.1.1 The system must support the following acquisitions functions:
   a. pre-order searching
   b. ordering
   c. claiming
   d. cancellation of orders
   e. receipt processing
   f. payment
   g. fund accounting
   i. management of supplier data
   j. statistics

3.4.22.1.2 The acquisition module must be capable of accepting, displaying, and outputting bibliographic and holdings information in the MARC21 formats.

3.4.22.1.3 It should be possible to import full MARC21 records from OCLC and other databases as well as bibliographic records from a book jobber's or supplier's database to be used in acquisitions records.

3.4.22.1.4 The system should support acquisitions records for all authorized types of materials as described by the MARC21 standards (e.g. monographs, musical scores, etc.).

3.4.22.1.5 The acquisitions module should be able to display at least the following data:

   a. bibliographic information
   b. acquisitions type (order, gift, approval, etc.)
   c. order status information (reported, received, back ordered, etc.)
   d. copy/fund information [location is in i, below]
   e. detailed invoice information (list price, shipping and handling, processing fee, tax, discounts, etc.)
   f. supplier information (supplier name, address, phone, contact name, etc.)
g. supplier report information (date of status report, discount information, etc.)

h. requestor

i. location(s) (i.e., destination(s))

j. instructions to supplier (free-text)

k. internal processing instructions (free-text; non-printing on order form)

l. an additional free-text note field for general library use

m. number of copies

n. fund accounting information

3.4.22.1.6 In addition to order status, the status information element should include:

   a. the date the status was set
   b. a free-text note area

3.4.22.1.7 The system should support cumulative status information to provide a history of the purchase order.

3.4.22.1.8 Valid statuses should include:

   a. record ready to have purchase order produced
   b. entered partial
   c. claimed
   d. canceled
   e. received partial
   f. received complete
   g. returned partial
   h. returned complete
   i. invoice received
   j. received without invoice
   k. invoice claimed
   l. invoice overdue
   m. invoice paid
   n. reorder

3.4.22.1.9 Note fields in acquisitions records should accommodate at least 800 characters.

3.4.22.1.10 The system should support the following order types:

   a. firm order
   b. prepayment
   c. selection list
   d. gift
   e. membership acquisitions
   f. blanket order
3.4.22.11 Acquisitions transactions must automatically update all appropriate acquisitions records (e.g. creation of an invoice record updates the purchase order status and the appropriate fund files).

3.4.22.12 Acquisitions records should be accessible by the standard indexes described under General Requirements, Searching, as well as by:
   a. purchase order number
   b. dates (purchase order date, date of receipt, invoice date, etc.)
   c. person requesting the order
   d. fund
   e. supplier

3.4.22.13 The system should be capable of performing all arithmetic operations.

3.4.22.2 Orders

3.4.22.2.1 The system should be able to store orders entered for later review.

3.4.22.2.2 The system should support the production of purchase orders by order type.

3.4.22.2.3 The system should support the production of one purchase order for each title.

3.4.22.2.4 The system should support the production of a single purchase order for multiple titles from a single supplier.

3.4.22.2.5 The system must prohibit the assignment of duplicate order numbers, whether entered manually or automatically.

3.4.22.2.6 The system must warn of the unintentional duplication of orders for one bibliographic item.

3.4.22.2.7 Authorized staff should be able to override any warning of a potential duplication of orders.

3.4.22.2.8 It should be possible to search for and display the following subsets of purchase orders:
3.4.22.2.9 The system should be able to print mailing labels for each purchase order produced.

3.4.22.2.10 The system should support the batch printing of purchase orders.

3.4.22.2.11 The following items should appear on printed purchase orders:

a. purchase order number  
b. author  
c. title  
d. edition  
e. publisher  
f. date of publication  
g. series  
h. ISBN number  
i. collation  
j. number of the volume(s) ordered  
k. price (discounted, if the supplier gives a discount)  
l. sales tax  
m. shipping and handling cost  
n. total number of copies ordered  
o. indication of the library collection/location for which each copy is ordered  
p. "RUSH" indications  
q. supplier name  
r. order date  
s. system-supplied order number  
t. free-text notes to the supplier (e.g., "ship overnight")  
u. free-text notes for internal library use (e.g., “do not catalog” or “Forward immediately to Special Collections”)  
v. publisher catalog number  
w. format of item

3.4.22.2.12 It should be possible to set a flag on a purchase order line item to alert for special handling upon receipt of the item.
3.4.22.2.13 The system should be capable of printing purchase orders on 8-1/2" x 11" paper.

3.4.22.2.14 The system should be able to produce electronic versions of purchase orders.

3.4.22.2.15 The system should be capable of transmitting orders electronically per the BISAC, EDI x.12 or the EDIFACT on-line ordering standard.

3.4.22.2.16 The system should provide the ability to copy the purchase order line items from one purchase order to another purchase order.

3.4.22.2.17 The system should provide for the retention of order and invoice records under conditions such as item out of print, publication canceled, order canceled, etc.

3.4.22.3 Selection/Desiderata Lists

3.4.22.3.1 The system should permit the creation of bibliographic records for selection purposes so that titles under consideration for purchase may be kept in the system.

3.4.22.3.2 It should be possible to view and print selection/desiderata lists.

3.4.22.3.3 It should be possible to sort and search the contents of selection/desiderata lists.

3.4.22.3.4 It should be possible to purge selection/desiderata lists by individual item or in batch, according to library-defined parameters.

3.4.22.3.5 It should be possible to add a title from a selection/desiderata list to a purchase order without re-keying the bibliographic data.

3.4.22.3.6 Current selection/desiderata lists should show, for each title:

   a. bibliographic information
   b. price
   c. notes
   d. date of entry

3.4.22.3.7 Desiderata lists should generate "consider for reactivation" reports based on dates incorporated in desiderata records.
3.4.22.4 Claiming

3.4.22.4.1 The system should be able to generate claims based on library-defined parameters.

3.4.22.4.2 Authorized library staff should be able to override the claiming of specific items.

3.4.22.4.3 Authorized staff should be able to override the default claim cycle.

3.4.22.5 Receiving

3.4.22.5.1 The system should accommodate receipt of items with invoices, items without invoices, and invoices without items.

3.4.22.5.2 The system should be able to generate a claim notice for a missing invoice at a specific period of time after receipt of an ordered item.

3.4.22.5.3 The system should be able to differentiate among copies from different suppliers.

3.4.22.5.4 When the receipt of an item is recorded, the system should automatically update information in all appropriate modules, including the web catalog display.

3.4.22.5.5 During the receiving process, the system should automatically update the appropriate funds with the approved invoice amounts, whether the amount matches the purchase order price or not.

3.4.22.5.6 The system should be able to track an item through processing.

3.4.22.5.7 It should be possible to identify items located in a processing area for more than a library-specified time period.

3.4.22.6 Fund Accounting

3.4.22.6.1 The system should accept fund codes of at least 14 alphanumeric characters.

3.4.22.6.2 The system must automatically update the fund file as transactions occur (e.g. encumbrances and debits).

3.4.22.6.3 The system must accommodate a minimum of 150 funds.
3.4.22.6.4 Fund file records must include the following information:

a. amount budgeted
b. amount encumbered
c. amount expended
d. uncommitted balance
e. allotment increases
f. allotment decreases

3.4.22.6.5 The system should provide an early warning alert of fund depletion when the level of an encumbered fund reaches a library-specified value.

3.4.22.6.6 The system should stop the placement of orders when the fund is over-encumbered by a percentage specified by the library.

3.4.22.6.7 The system must be able to receive materials that were ordered during the last two fiscal years against funds from the last two fiscal years' budgets.

3.4.22.6.8 The system should be able to calculate sales tax based on tax rates for each purchase order line item.

3.4.22.6.9 The system should be able to calculate supplier discounts for individual purchase order line items.

3.4.22.6.10 The system should handle the conversion of foreign currency prices.

3.4.22.6.11 Invoices should be accessible by:

a. supplier name
b. invoice number
c. purchase order number
d. item title or title number
e. ISBN or ISSN
f. date range

3.4.22.6.12 The system should accommodate credits, refunds, and partial order payments.

3.4.22.6.13 The system should be able to accommodate multi-fund shared acquisitions.

3.4.22.6.14 The system should be capable of retaining fund accounting information online for three years.
3.4.22.6.15 The system should be able to calculate tax rates and supplier discounts for orders.

3.4.22.7 Supplier Files

3.4.22.7.1 The system must support an online supplier file.

3.4.22.7.2 A formatted screen must be provided for entry of supplier file data.

3.4.22.7.3 Contact information in supplier displays for claims, orders, remittance and returns should include:

a. supplier name
b. library-assigned supplier number (alphanumeric)
c. contact name
d. contact postal and street address
e. contact phone and fax number
f. contact e-mail address
g. supplier web address (URL)

3.4.22.7.4 Supplier displays should include:

a. number of items claimed
b. number of items cancelled
c. order turnaround
d. supplier discounts
e. notes field

3.4.22.7.5 It should be possible to set a claim cycle default for each supplier.

3.4.22.7.6 The system should alert staff when an order should be claimed based on the claim cycle default value.

3.4.22.7.7 It should be possible to view supplier information from other modules.

3.4.22.7.8 It should be possible to retrieve supplier records by supplier name and number.

3.4.22.7.9 It should be possible to link publisher names to supplier records.
3.4.23 Serials Control Requirements

3.4.23.1 General

3.4.23.1.1 The system must include the following serials control capabilities:
   a. check-in
   b. claiming
   c. routing
   d. report generation

3.4.23.1.2 The system should include the following serials control capabilities:
   subscription renewal
   routing
   fund accounting
   d. bindery preparation

3.4.23.1.3 The system must be able to support a serials control record for each serial title currently received.

3.4.23.1.4 The system should be able to support a serials control record for each new serial title once it is on order.

3.4.23.1.5 The serials control module must be able to accept, display, and output bibliographic and holdings information in the MARC21 format.

3.4.23.1.6 The serials control module should be able to export data as delimited, flat files.

3.4.23.1.7 It must be possible to key in a new serials control record using formatted screens.

3.4.23.1.8 Records in the serials control module should be updated on-line, in real time as changes are saved to a record.

3.4.23.1.9 The serials control module should share supplier fund files with the acquisitions module.

3.4.23.1.10 The system should be able to track all types of serials, including, but not restricted to:
   a. periodicals
   b. continuations
   c. law reporters
d. newspapers
e. annuals
f. government documents or publications
g. monographic series
h. memoirs
i. proceedings
j. transactions
k. indexes
l. supplements
m. loose leaf material

3.4.23.1.11 The system must allow single command navigation between display screens for multi-screen records.

3.4.23.1.12 The serials control display should include:

a. dates of subscription
b. source
c. frequency details
d. subscription price
e. fund
f. shelving location
g. binding information
h. date of payment
i. holdings
j. location/collection
k. routing information
l. receipt status
m. next expected issue
n. claim periods

3.4.23.1.13 The system must provide a note area for each copy of a serial title for special instructions, such as retention, special routing or handling, special check-in procedures, etc.

3.4.23.1.14 The system should provide space for at least 800 characters in note areas.

3.4.23.1.15 In addition to the Indexing Requirements in the General Functional Requirements sections 3.4.4 – 3.4.6, the system should be able to search for serials records by:

a. supplier
b. supplier number
c. location
d. SISAC barcode number
3.4.23.2 Check-In

3.4.23.2.1 The system should be able to retrieve check-in records by scanning the SISAC barcode issue identification printed on serials.

3.4.23.2.2 The system must allow for flexibility in creating patterns for prediction.

3.4.23.2.3 The system should allow staff to distinguish among and check in pocket parts, replacements, supplements, and other pieces related to the same serial title.

3.4.23.2.4 The system should be able to distinguish among multiple copies from the same or different sources. (Example: one copy is a gift, one copy is a depository item, one copy is a paid subscription.)

3.4.23.2.5 The system should distinguish between bound and unbound volumes.

3.4.23.2.6 The system should distinguish between formats (microforms, websites, etc.)

3.4.23.2.7 The system must record automatically the date an issue is received.

3.4.23.2.8 The system should be able to display the enumeration and chronology of the most recent issue of a title recorded in the system on a copy specific basis.

3.4.23.2.9 The system should be able to retain and display the receipt dates for a period determined by staff on a title-by-title basis.

3.4.23.2.10 The system should provide access to specific issue data for a particular title without requiring scrolling through all of the holdings.

3.4.23.2.11 It should be possible to view both summary holdings and detailed holdings.

3.4.23.2.12 The system should be able to summarize automatically and display individual holdings into a consolidated statement of holdings for all formats.

3.4.23.2.13 The system should update holdings statements automatically by receipt of issue or bound volume.
3.4.23.2.14 It should be possible to create MARC21 holdings records while checking in items with limited re-keying of information.

3.4.23.2.15 The system must predict the next expected issue based on pattern information when the publication follows a predictable pattern.

3.4.23.2.16 The system should support the check-in of multiple copies of an issue on a single check-in screen even when these copies are accommodated in separate copy records.

3.4.23.2.17 For titles which have a predictable pattern of enumeration and chronology the system should:
   a. allow for check-in of the next expected issue with few keystrokes
   b. allow for check-in of issues other than the next expected issue by using a minimal number of keystrokes
   c. allow editing of an existing pattern
   d. be able to archive old check-in information

3.4.23.2.18 The system should allow check-in of items not having a predictable pattern of enumeration or chronology.

3.4.23.2.19 The system should be able to predict expected items that have alphanumeric enumeration.

3.4.23.2.20 The system should be able to check in items with complex or lengthy enumeration.

3.4.23.2.21 The system should be able to print or suppress call number labels as an issue is checked-in.

3.4.23.2.22 The system should accommodate both batch printing and batch suppression of call number labels.

3.4.23.2.23 The system should alert staff of an attempt to check in an issue which is in excess of the library's expected number of copies.

3.4.23.2.24 The system should record and maintain discard information, provide automatic discard alerts, and produce instructional slips for disposal of issues.
3.4.23.3 Claiming

3.4.23.3.1 The system **must** be able to automatically identify issues of a serial that are overdue, i.e., that have not been checked in.

3.4.23.3.2 The system **must** recognize overdue issues whether or not the title is received on a paid subscription including the following situations:

   a. failure to receive the next issue within the expected timeframe plus a library-specified "grace" period
   b. receipt of an issue subsequent to the expected issue
   c. receipt of fewer than the required number of copies within a library-specified time period after check-in of the first copy
   d. receipt of an item for which there has been no check-in activity within a library-specified period

3.4.23.3.3 The system **must** allow manual flagging of missing and overdue items.

3.4.23.3.4 Manual intervention **must** override system-generated flags.

3.4.23.3.5 The system should support the production of claim notices both interactively and in batch.

3.4.23.3.6 The system **must** allow the review of pending claim notices online or by print preview.

3.4.23.3.7 The system should be able to report all items flagged as having missing issues for which first claims have not been generated.

3.4.23.3.8 The online review procedure should allow staff to indicate that an item should be retained on a missing issue list for reconsideration or passed to a claiming file for the generation of a claim.

3.4.23.3.9 The system **must** be able to generate claim notices in printed form.

3.4.23.3.10 The system should be able to generate claim notices in electronic format.

3.4.23.3.11 The system should be able to produce claim notices in conformity with the EDIFACT or EDI x.12 standard for claims of missing issues of serials.
3.4.23.3.12 The system must be able to support a variety of selection criteria for the generation of claims in batch. Such criteria must include:

a. claims to a specific supplier
b. claims for issues which should have been received between certain dates
c. all claims
d. claims by location

3.4.23.3.13 The system must be able to identify issues requiring second and third claims according to library-determined time lags.

3.4.23.3.14 The system must allow overrides of the claim cycle for specific items.

3.4.23.3.15 The system should be able to report items for which three claims have been issued without a response being recorded.

3.4.23.3.16 The system must allow the blocking of claims for specified titles.

3.4.23.3.17 The system should allow staff to record specific details of responses to claims.

3.4.23.3.18 The system should be able to accept suppliers' reports on claims in electronic format.

3.4.23.4 Routing

3.4.23.4.1 The system should support the development and maintenance of routing lists for serials.

3.4.23.4.2 The system should be able to print routing slips.

3.4.23.4.3 The system should support recipients' names and locations in the recipient file.

3.4.23.4.4 The system should allow staff to add notes to routing lists.

3.4.23.4.5 The system should be able to prioritize the order of recipients on routing lists according to the individual and, secondarily, according to the recipient's location.

3.4.23.4.6 The system should allow editing of a recipient's name, position title, location or priority on all routing lists with only one entry of the change in the system.
3.4.23.4.7 The system should be able to provide a display or printout of all titles routed to an individual.

3.4.23.4.8 The system should be able to provide a display or printout of all individuals receiving specified titles or a specific copy of a title.

3.4.23.4.9 The system should be able to print or suppress routing slips as an issue is checked in.

3.4.23.4.10 The system should support batch printing of routing slips.

3.4.23.4.11 The system should support the batch suppression of routing slips.

3.4.23.5 Binding

3.4.23.5.1 The system should be able to indicate when items are ready to be considered for binding.

3.4.23.5.2 The system should support a variety of approaches for determining binding readiness, including:
   a. receipt of a specified number of issues
   b. receipt of the final issue in a specified level of the enumeration or hierarchy
   c. regular intervals specified by the library
   d. receipt of index
   e. receipt of binder furnished by publisher

3.4.23.5.3 The system should allow the delay of flagging for binding readiness until any outstanding issues have been received or removed from the missing issues file.

3.4.23.5.4 It should be possible to select subsets of the bindery readiness file for review based on a variety of selection criteria including:
   a. name of bindery
   b. fund against which purchase of the serial is charged
   c. fund against which binding of the serial is charged
   d. range of dates during which items were flagged as ready for binding
   e. location
   f. priority

3.4.23.5.5 The system should allow override of the requirement for library staff review of the file of items ready for binding.
3.4.23.5.6 The system should be able to display or print the following:
   a. list of missing issues required to be finalized before item can be processed for binding
   b. bindery pickup list showing enumeration and location of each issue required for binding
   c. bindery slips indicating title and copy identification, type and color of binding and lettering, text of lettering, range of issues to be bound, treatment of indices, advertisements, etc.
   d. bindery packing lists of all items being dispatched in a single consignment to a specific bindery

3.4.23.5.7 The system should be able to accept amendments to the contents of bindery lists at any stage until library staff indicate that a consignment has been dispatched.

3.4.23.5.8 The system should be able to automatically adjust the location display of issues being assembled for binding to indicate binding in process and the expected date of return of the volume from the bindery.

3.4.23.5.9 The system should be able to automatically identify items overdue for return from the bindery.

3.4.23.5.10 The system should be able to support claiming of bindery materials similar to the process described for claiming missing issues.

3.4.24 Management Information Requirements

3.4.24.1 General

3.4.24.1.1 The Management Information system must provide detailed summaries of data on the overall use and activity of the system and on the use and activity within each module of the system.

   a. The system must provide standard reports for collection counts, circulation, cataloging, acquisitions, serials control, and the online catalog. Sample reports are listed below in sections 3.4.24.2 – 3.4.24.8.

   b. The system should provide a Report Generator that can generate customized reports from user-designated files and combinations of files, according to user-specified parameters for the contents and formats of the reports.

   c. The Report Generator should be easy to use, without requiring knowledge of programming languages. Details are
in section 3.4.24.9 below.

3.4.24.1.2 At a minimum, the system **must** provide standard reports for each of the following categories:

### 3.4.24.2 Collection Reports

#### 3.4.24.2.1 Bibliographic Record Statistics, such as:

a. Total number of bibliographic records  
b. Total number of bibliographic records by type and bibliographic level.  
c. Total number of bibliographic records by encoding level.  
d. Total number of bibliographic records by status.

#### 3.4.24.2.2 Holding/Item Record Statistics, such as:

a. Total number of holding/item records  
b. Total number of holding/item records by location by bibliographic type.

#### 3.4.24.2.3 Shelf List report.

### 3.4.24.3 Circulation Reports

#### 3.4.24.3.1 Circulation Statistics, such as:
a. Room-use counts
b. Daily charges and renewals
c. Weekly charges and renewals
d. Monthly charges and renewals
e. Fiscal Year-to-Date charges and renewals
f. Fiscal Quarterly charges and renewals
g. Fiscal Annual charges and renewals
h. Circulation Statistics for 4.2 - 4.6 parsed by the following categories:
   i. Borrower type
   ii. Library branch/section
   iii. Material type
   iv. Transaction type (charge, renewal, etc.)
i. Holds filled, unfilled, cancelled, placed by day, by month.
j. Number of lost or missing items.
k. List of lost or missing items.
l. List of items overdue more than a specified number of days, with borrower name or id.

3.4.24.4 Borrower Reports

3.4.24.4.1 Borrower Statistics, such as:

   a. New registrations or new records added.
   b. Total number of borrowers registered.
   c. Number of borrowers by type of borrower.
   d. Total number of borrowers added or deleted during a specific time period.

3.4.24.4.2 Borrower Notices:

   a. Number of notices printed by day and by month.
   b. Number of email notices sent by day and by month.

3.4.24.5 Cataloging Reports

3.4.24.5.1 Cataloging Statistics, such as:

   a. Number of bibliographic records created, modified, or deleted by month and by fiscal year.
3.4.24.6 Acquisition Reports

3.4.24.6.1 Acquisitions Statistics, such as:

a. Fiscal year-to-date titles and volumes purchased, by fund, by groups of funds, and total funds encumbered and paid.

b. Supplier performance:
   i. Number of orders placed
   ii. Number of claims made
   iii. Number of orders canceled/filled
   iv. Average period to fill order
   v. Average discount
   vi. Percentage of orders filled/claimed/canceled
   vii. Dollar value of orders placed with supplier
   viii. Amount paid to supplier fiscal year-to-date

c. Number of invoices processed and total number of line items.

d. On demand report of fiscal year-to-date funds encumbered, funds spent and funds available.

e. On demand report of outstanding invoices by supplier and by fund.

3.4.24.7 Serials Reports

3.4.24.7.1 Serials Statistics, such as:

a. Total number of serial titles.

b. Number of titles on subscription.

c. Number of titles without current subscriptions.

d. Number of serial titles by location.

e. Total number of serials volumes, reels, sheets, etc. by item type.

f. Number of copies.

g. Number of serial volumes by location.

h. Number of issues checked in by a specified time span.

i. Number of claims issued, by supplier, for a specific time span.

j. Number of titles purchased.

k. Number of purchase orders.

l. Number of line items purchased.

m. Number of depository titles received.

n. Number of titles received by gift or exchange.

o. Number of replacement issues received.

p. Number of back issues or added copies received.

q. Master list of serial titles with locations and holdings.

r. List of serial title holdings by location.

s. List of serial titles by supplier.

t. List of serial titles by fund number.
u. List of serial titles available only via the Web or CD.
v. Count and list of issues eligible to be claimed.
w. Count and list of issues claimed.
x. List of holdings with gaps.
y. List of subscriptions due for renewal, with price and fund codes, by:
   i. Location
   ii. Date of renewal
   iii. Supplier
z. Reports available by specified time periods (i.e., quarterly, semi-annually, etc.)

3.4.24.8 Online Catalog Reports

3.4.24.8.1 Usage Statistics, such as:

   a. Number of searches performed, by day, week and month.
   b. Number of searches performed from the library’s domain by day, week and month.
   c. Number of searches performed from outside the library’s domain by day, week and month.
   d. Number of title requests created by users via the online catalog.

3.4.24.9 Report Generator

The system should provide a Report Generator that can generate customized reports from user-designated files and combinations of files, according to user-specified parameters for the contents and formats of the reports, without requiring knowledge of programming languages.

3.4.24.9.1 Staff should be able to define and format specific reports without having to write structured database query commands.

3.4.24.9.2 The system should allow reports with mathematical and statistical capabilities such as sums, percents, averages, greater than/less than, and Boolean logic.

3.4.24.9.3 The system should provide a wide range of options for report formatting.

3.4.24.9.4 A variety of output options should be available for reports including: printed in batch, print on demand, viewable online, and sent to e-mail, word processor, spreadsheet, or other database software.
3.4.24.9.5 The system should give the user the option of saving report generation specifications for future use.

3.4.24.9.6 Control options for systems administration should be included with the report writer to protect system resources and response time.

### 3.4.25 Training Requirements

3.4.25.1 The vendor must provide instructors and all necessary instructional materials required for effective instruction and training.

3.4.25.2 Training must encompass all functional and administrative components of the system.

3.4.25.3 The vendor must provide pre-installation and system configuration planning for at least six program and technical staff.

3.4.25.4 Pre-installation planning and system configuration planning must include, but not be limited to:

- 3.4.25.4.1 an overview and description of the system, including system capabilities and requirements
- 3.4.25.4.2 migration/conversion issues and options
- 3.4.25.4.3 parameter/policy-setting issues and options.

3.4.25.5 The vendor must provide system administrative training for up to six system administrative staff involved in the day-to-day setup, maintenance, and operation of the system.

3.4.25.6 System administrative training must include, but not be limited to:

- 3.4.25.6.1 system start up and shut down
- 3.4.25.6.2 troubleshooting and solving system problems
- 3.4.25.6.3 loading software updates
- 3.4.25.6.4 loading data records
- 3.4.25.6.5 running maintenance routines
- 3.4.25.6.6 performing recommended preventive maintenance and security measures
- 3.4.25.6.7 generating standard and custom reports.

3.4.25.7 The vendor must provide functional application training for at least 20 staff who can be responsible for training and assisting other staff with daily operations of the system.

3.4.25.8 Functional application training should follow a hands-on, “train the trainers” model.
3.4.25.9 Functional application training must include each functional component of the system, such as acquisitions and serials control, cataloging and authority control, circulation control, and the online public catalog.

3.4.25.10 Functional application training must be provided before implementation.

3.4.25.11 On-going training for each major software release or version should be provided either through appropriate documentation or online training.

3.4.25.12 The vendor should provide follow-up training, either on-site or via a webinar, to address specific questions and issues identified by the library within 3 months of each module’s implementation.

3.4.25.13 Functional application training should be conducted at the library’s Sacramento headquarters. (The library will provide classroom and demonstration facilities.)

3.4.25.14 The vendor should provide training materials, online tutorials and user manuals in an electronic format.

3.4.25.15 The vendor should not prohibit the library from reproducing and/or modifying vendor-produced training materials, tutorials, and user manuals for the library’s own internal use.

3.4.25.16 The vendor should provide a permanent training database, created from the library’s own borrower and bibliographic/holdings data, and make it available for use by the library’s program staff.

3.4.26 Performance Requirements

3.4.26.1 The system must be designed for continuous operation (excluding daily backups and scheduled downtime for maintenance).

3.4.26.2 The Web Catalog must be available for a minimum of 20 hours per day, seven days a week.
3.4.26.3 The system **must** accommodate the following record counts during the initial database loads, and the following annual growth rates for the next 5 years:

<table>
<thead>
<tr>
<th>Type of records</th>
<th>Initial record count:</th>
<th>Annual growth rate:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bibliographic records</td>
<td>1,300,000</td>
<td>5%</td>
</tr>
<tr>
<td>Authority records</td>
<td>230,000</td>
<td>5%</td>
</tr>
<tr>
<td>Item/Holding records</td>
<td>2,000,000</td>
<td>5%</td>
</tr>
<tr>
<td>Borrower records</td>
<td>24,000</td>
<td>15%</td>
</tr>
<tr>
<td>Serial holding records</td>
<td>20,000</td>
<td>3%</td>
</tr>
<tr>
<td>Supplier (vendor) records</td>
<td>6,000</td>
<td>2%</td>
</tr>
</tbody>
</table>

3.4.26.4 The system **must** be able to support up to 150 simultaneous staff sessions.

3.4.26.5 The Web catalogs **must** be able to support up to 200 simultaneous sessions.

3.4.26.6 The system **must** support 100,000 circulation transactions each year.

3.4.26.7 The system **must** support a minimum of 3,000 purchase orders, 6,000 purchase order line items, and related files (such as invoice records) for each fiscal year.

3.4.26.8 Routine backups **must** include all data, transactions, and software necessary to restore the system on a replacement server.

3.4.26.9 It **must** be possible to perform routine backups to media that can be stored offsite.

3.4.26.10 The restoration of the system, data files, and transactions from backup media should take no more than 8 hours to complete (assuming that a working hardware platform is in place).

3.4.26.11 During business hours (Monday-Friday, 6:00 A.M. – 6:00 P.M.), the creation of routine backups **must not** interfere with system performance or limit application software functionality.

3.4.26.12 During business hours, routine batch processing **must not** interfere with system performance or limit application software functionality.
The system must be able to process both interactive and batch transitions at a rate that allows current staff levels to process typical daily workloads:

<table>
<thead>
<tr>
<th>Task</th>
<th>Transaction Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>In the Web catalog, retrieve a hitlist from a typical author phrase search (last name, first name, excluding the loading of external graphics):</td>
<td>&lt; 3 seconds</td>
</tr>
<tr>
<td>In the Web catalog, retrieve a hitlist from a keyword search of two words (e.g., last name - first name, excluding the loading of external graphics):</td>
<td>&lt; 4 seconds</td>
</tr>
<tr>
<td>In a staff module, retrieve a hitlist from a typical author phrase search (last name, first name):</td>
<td>&lt; 3 seconds</td>
</tr>
<tr>
<td>In a staff module, retrieve a hitlist from a keyword search of two words (e.g., last name - first name):</td>
<td>&lt; 4 seconds</td>
</tr>
<tr>
<td>Circulation check-out of one item:</td>
<td>&lt; 3 seconds</td>
</tr>
<tr>
<td>Circulation check-in of one item:</td>
<td>&lt; 2 seconds</td>
</tr>
<tr>
<td>Write a new or modified borrower record to the database:</td>
<td>&lt; 3 seconds</td>
</tr>
<tr>
<td>Write a new or modified bibliographic record to the database:</td>
<td>&lt; 5 seconds</td>
</tr>
<tr>
<td>Add/change/delete bibliographic records (batch load):</td>
<td>&gt; 1,000 per hour</td>
</tr>
<tr>
<td>Serials control: check-in of a predicted issue:</td>
<td>&lt; 3 seconds</td>
</tr>
<tr>
<td>Write a new or purchase order record to the database:</td>
<td>&lt; 4 seconds</td>
</tr>
<tr>
<td>Write a new or invoice record to the database:</td>
<td>&lt; 4 seconds</td>
</tr>
</tbody>
</table>
3.4.27 System Support Requirements

3.4.27.1 The vendor's initial response to requests for emergency assistance must be within 2 hours when contacted between 8:00 A.M. and 5:00 P.M., PT, Monday – Friday, excluding holidays of the State of California.

3.4.27.2 The vendor's initial response to requests for non-emergency assistance, including questions regarding applications software and problems regarding both software and hardware, must be within 1 business day when contacted between 8:00 A.M. and 5:00 P.M., PT, Monday – Friday, excluding holidays of the State of California.

3.4.27.3 The vendor must make assistance available during weekend and evening hours when requested and arranged in advance for operating system and application upgrades and other periodic maintenance activities.

3.4.27.4 As specified in the California State Library’s Operational Recovery Plan (Rev. Jan. 2006), the recovery strategy for the Integrated System is “system replacement.” In the worst case scenario, the vendor must be able to respond to requests from CSL for procurement information for replacement hardware and software, and must be able to provide technical assistance to CSL at a rate that allows CSL staff to replicate the system from an offsite backup media.
4.0 Baseline Analysis

4.1 Current Method

The CSL staff use the DRA Classic system, implemented in 1989/90, to perform routine library support tasks. Library support tasks that were automated by the installation of the current system include:

**Circulation tasks:**

- Registering library borrowers (both individuals and libraries).
- Tracking materials loaned to borrowers.
- Tracking requests for materials.
- Generating overdue notices.
- Tracking charges for lost materials.

**Cataloging tasks:**

- Maintaining inventory records of the CSL collections (e.g., bibliographic (title) records, authority (heading) records, and item (volume) records).

**Acquisition tasks:**

- Creating purchase orders.
- Tracking the receipt of orders and invoices.
- Tracking library material fund balances.
- Maintaining a database of suppliers of library materials.

**Serials tasks:**

- Maintaining subscription records.
- Maintaining serial checkin records for every issue and part received.
- Generating claim notices for missing issues.

**Reporting and Data Exchange tasks:**

- Loading new and updated bibliographic records from vendors.
- Extracting and sending bibliographic records to other libraries.
- Maintaining catalog interfaces with other California libraries.
- Generating management reports on the collections, the catalogs, and their use.
The DRA Classic system also supports two of the three CSL Web Catalogs (the Main Catalog and the Picture Catalog), http://www.lib.state.ca.us, which allow users to search, display, and request materials from the CSL collections. The third catalog, the Braille and Talking Book Library Catalog, is supported by the automated circulation system (KLAS) that is used by the Braille and Talking Book Library. KLAS (Keystone Library Automation System) was installed in 2005 as Project 6120-8.

The DRA Classic system runs twenty-four hours a day. During regular working hours, the system supports the core library services listed above. During evening hours and on weekends the system completes a variety of maintenance activities, including a daily backup, and generates reports. The Library’s Web catalogs are available to users 23+ hours of the day.

Each week, the system generates overdue notices, which are sent either via email or via printed notice, according to each borrower’s preference.

At the end of each month, a variety of special statistical reports are run that report on the Library’s transactions.

Objectives of the Current System

The objectives of the current system, which replaced a manual system in 1989/90, fell into three broad categories (as defined in the 1985 FSR for the original project):

- Improve user’s ability to obtain needed information (9 objectives),
- Increase system performance and efficiency (7 objectives),
- Improve staff productivity (6 objectives).

The first broad objective, improving user’s ability to obtain needed information, is being met by the CSL Web catalogs. Library users can explore the CSL collections online, identify whether specific items are available for loan, and place requests. The catalogs also link directly to full-text resources available on the Internet.

The second broad objective, increase system performance and efficiency, is being met. Examples of the specific objectives from the original FSR include:

- Facilitating resource sharing between CSL, other libraries, and bibliographic utilities. (Resource sharing is made possible through adherence to and usage of a number of national standards for electronic data interchange, such as MARC21 and Z39.50. Interfacing with other libraries and bibliographic utilities allows the CSL to batch load records from other systems, which avoids creating every inventory record from scratch.)
- Generating management reports that aid in collection management and monitoring user services.
The third broad objective, improve staff productivity, is being met. Examples from the original FSR include:

- Increase staff productivity in the serials claiming and cancellations function by 75%.
- Increase system support for the circulation function to reduce staff time required for overdue processing by 90%.
- Reduce staff time required for card catalog filing and maintenance by at least 75%.
- Increase staff productivity by 85% in performing these tasks:
  - Determining the status of an order,
  - Determining the status of a serial issue,
  - Determining the loan status of an item.

**Data Input and Characteristics**

The current system is comprised of several major databases that contain the following types of data:

<table>
<thead>
<tr>
<th>Type of Records</th>
<th>Record Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bibliographic records (in MARC21 format)</td>
<td>1,300,000</td>
</tr>
<tr>
<td>Authority Records (in MARC21 format)</td>
<td>230,000</td>
</tr>
<tr>
<td>Item Records</td>
<td>2,000,000</td>
</tr>
<tr>
<td>Borrower Records</td>
<td>24,000</td>
</tr>
<tr>
<td>Serial Holding Records</td>
<td>20,000</td>
</tr>
<tr>
<td>Supplier (Vendor) Records</td>
<td>6,000</td>
</tr>
<tr>
<td>Purchase Order Records</td>
<td>1,000</td>
</tr>
<tr>
<td>Purchase Order Line Item Records</td>
<td>1,950</td>
</tr>
<tr>
<td>Invoice Records</td>
<td>1,100</td>
</tr>
<tr>
<td>Fund Records</td>
<td>30</td>
</tr>
</tbody>
</table>

The system is a terminal-based system with a command-line interface.

Records are created and maintained both by key entry and by batch loading of records from bibliographic utilities and vendors.

**Security**

Access to the current system for CSL staff members is controlled by individual, password-protected accounts. Each staff member’s security privileges are tailored to the individual’s responsibilities. Users can perform only those functions appropriate to their role. Passwords must be changed at least every 90 days, cannot be repeated, and cannot match any dictionary entry.
Library users can access the CSL Web catalogs without authentication (http://www.lib.state.ca.us); however, the accounts that provide the public access to the Web catalogs block all access to the staff modules. (None of the bibliographic or patron databases reside on the web server. The server merely provides an interface that allows users to query the bibliographic database.)

The current system hardware is housed in a climate-controlled computer room. Access to the computer room is limited to system operators and is controlled by the building’s security card access system.

Hardware

The current DRA Classic system runs on a single CPU with two disk towers accessible by character-cell terminals and by PC’s with terminal emulation software. The disk towers provide a total storage capacity of 360GB.

The current system also includes an HP (DEC) LG05 line printer.

The CSL contracts with Hewlett-Packard for hardware maintenance on the server, the towers, and the line printer.

A separate Windows 2003 application server provides a publicly- accessible web interface to the library’s inventory records (the Web Catalogs). The CSL contracts with Dell for hardware maintenance for this server.

As mentioned above, the current system hardware is housed in a climate-controlled computer room operated by the Library. Computer Room power is conditioned and controlled by a UPS. An HVAC controls the Computer Room’s temperature and humidity. A monitoring device tracks fluctuations in temperature, electrical power, and noise level. It automatically reports significant fluctuations in any of these conditions to four telephone numbers (one on-site and three home telephone numbers). A Halon control system detects smoke or fire, and suppresses fire in the computer room. A leak detection system monitors moisture under the computer room floor.

End-user hardware that connects to the ILS includes:

- 108 CSL staff PC’s (includes PC’s in staff cubicles, on public service desks, and located in shared work areas)
- 35 terminals (DEC VT320 and VT510 terminals)
- 83 barcode scanners (Intermec models 9510, 9710, and 9730)
The hardware is distributed among four of the CSL facilities:

- **Library & Courts Building (LC1)**
  914 Capitol Mall
  Sacramento, CA 95814

- **Library & Courts II Building (LC2)**
  900 N Street
  Sacramento, CA 95814

- **Capitol Branch**
  State Capitol, Room 5210
  Sacramento, CA 95814

- **Sutro Library**
  480 Winston Drive
  San Francisco, CA 94132

**Software**

The server runs the OpenVMS operating system.

The application software, DRA Classic and DRAWeb2, is licensed and maintained solely by SirsiDynix Corp. as a turnkey solution. The Classic modules in use are MARC Database Manager (Marion), Circulation Control (Circle), Materials Booking, Acquisitions Control (ACQ), Serials Control (Ser), Public Access Catalog (PAC), ITM-CRT-2400 (Marcive Item Creation Software), and DRAI Z39.50 client and server.

The system is licensed to support up to 255 simultaneous users (system processes by staff) and 200 concurrent sessions in the Web Catalogs.

All application software executables are provided by SirsiDynix and cannot be modified by SirsiDynix’s customers. The California State Library contracts with SirsiDynix for applications software maintenance.

**Interfaces**

The current system uses national standards (refer to functional requirements 3.4.15 – 3.4.16 for a list) to allow library data interchange with other libraries, bibliographic utilities, and vendors.

All of these interfaces build upon TCP/IP standards.
Personnel

Seventy-six program staff use the current system, which is supported by 1.6 IT staff.

Typical duties of program staff include data input for borrower registration, charging and discharging of circulating items, checkin of serial issues, creating and maintaining catalog (inventory) records, creating and tracking orders for new materials, searching the Web Catalogs to perform research, and assisting CSL users with the Web Catalogs.

Typical duties of the IT staff that support the system include managing bibliographic databases and technical interfaces, planning and implementing upgrades and installing patches, maintaining the Web Catalogs interface, managing the system configuration and account structure, and performing system checks, backups, and recovery tests.

Documentation

In addition to the detailed manufacturer and vendor-produced documentation for hardware and software, the Information Technology Bureau maintains detailed operation, maintenance, and recovery procedures. The primary responsibility for the content and currency of the documentation lies with the System Manager. An electronic copy of the system documentation is kept offsite for operational recovery purposes.

Failure of Current System to Meet Functional Requirements

The current system has met most of the library's functional requirements for the past 17 years; however, SirsiDynix Corp. has ceased development of the software products used by the CSL and will cease customer support soon. Moreover, in October 2006 Hewlett-Packard will cease production of the hardware platform that runs the OpenVMS operating system used by the Library's ILS.

The CSL cannot maintain the improvements in services and internal efficiencies, which were achieved by the installation of an Integrated Library System in 1989/90, on unsupported COTS software on a discontinued hardware platform. Such a system will not continue to comply with the changing industry standards for library data exchange upon which the CSL relies.

Moreover, the CSL cannot improve the ability of state government researchers to effectively and efficiently obtain the information they seek because a federated searching utility and an OpenURL utility cannot be added to the current system.
4.2 Technical Environment

The organizational, managerial and technical environments for the replacement system will remain the same as the environments for the current system.

- The proposed solution is a standalone, turnkey system with a public access component, similar to the current system.

- The system will interface with the same libraries and vendors as the current system, including OCLC, Inc., and Marcive, Inc.

- One Senior Information System Analyst and one Staff Information Systems Analyst run the daily operations of the current system. This management structure will remain in place for the new system.

- The current system is primarily an office automation system, as will be the replacement system.

- No confidential data will be housed on, or processed by, the webserver that is used to support the public access component.

- The current system is one of two critical applications for the library and is included in CSL's operational recovery plan. The same will be true for the replacement system.

Anticipated changes in equipment, software, etc., will include:

- Three or four new servers (one database application server, one web server, one training/recovery/test server, and possibly one Link Resolver server).
- 1 system printer.
- 35 PC's (to replace dumb terminals).
- 41 replacement barcode scanners (to replace 17-year-old scanners).
- Replacement Integrated Library System applications software.

Although the operational life of the current Integrated Library System has been 17 years, it is unrealistic to assume that a replacement system will have a similar operation life. Nonetheless, ten years is a reasonable expectation for the operational life of a replacement application that is sized for growth, with hardware upgraded or replaced as platforms reach vendor determined end-of-life or support.

The proposed solution is a turnkey hardware/software package. Resources for development of an application will not be necessary.
4.2.1 Existing Infrastructure

The replacement system will be integrated into the CSL’s current network infrastructure.

Facilities

The State Library offers services, and maintains operations, at five sites: four located in Sacramento and one located in San Francisco. CSL staff at four of the five sites use the Integrated Library System (i.e., all but staff at the 1029 J Street site).

Facilities in Sacramento:

- Library & Courts Building (LC1)
  914 Capitol Mall
  Sacramento, CA 95814

- Library & Courts II Building (LC2)
  900 N Street
  Sacramento, CA 95814

- Office of Library Construction and Budgets/Local Assistance Office
  1029 J Street, Suite 400
  Sacramento, CA 95814

- Capitol Branch
  State Capitol, Room 5210
  Sacramento, CA 95814

The San Francisco facility:

- Sutro Library
  480 Winston Drive
  San Francisco, CA 94132

Network

Four of the facilities (all but the Capitol Branch) are part of the CSL network; however, Sutro Library network access is limited to the Integrated System (i.e., 9600 baud terminal communications via a dedicated 56KB data line).

Network operations are centralized in the Library’s Computer Room.
A firewall protects the internal network from external traffic. Users authenticate to the internal network with a username and password, separate from the ILS username/password.

The firewall is also used to create a DMZ network segment, where the Library’s web servers reside.

**Cabling and WAN Infrastructure**

Four of the five facilities (i.e., all but the Capitol Branch) have Category 5 horizontal cables that link workstations and terminals to telecommunication closets. Hubs and switches connect the terminations of the horizontal cables in each telecommunication closet to the main distribution frame (MDF) of each building.

Vertical cables, connecting telecommunication closets in each building to the building’s MDF, are either fiber (LC1) or Category 5 cables.

The links between buildings consist of:

- Several 62.5/125 micron fiber cables, which link the LC2 and LC1 buildings (via the N Street tunnel).
- One PacBell Point-to-Point T1 line, which links the LC2 building and 1029 J Street.
- One PacBell 56K data line, which links the LC2 building and the Sutro Library.

The one facility not included in the CSL network, the Capitol Branch, uses a DSL line and VPN to connect to the network and a dial-in modem to connect to the Integrated Library System.

**Internet Connectivity**

The CSL network connects to the Internet via a PacBell Super Trunk T1 line and a PacBell Frame Relay T1 line.

The library’s ISP provides a class C range of 254 public IP addresses. The internal network uses class A non-routable IP addresses, with NAT and PAT on the firewall translating internal to external IP addresses.

Public workstations with Internet access in the LC1 and LC2 reading rooms use PacBell DSL lines. The DSL lines isolate the public workstations from the CSL network.
Security

With the assistance of Teale Data Center, CSL implemented a number of network infrastructure changes in fiscal year 2002/2003 to increase security for the network. These changes included a more robust firewall solution, protocol changes, and infrastructure design changes. In addition, CSL utilizes an enterprise-level antivirus utility for protection against viruses and other malicious code.

CSL’s Information Technology Bureau follows industry recommendations to maintain security of the network. Strong password authentication is used and users are forced to change passwords every 90 days. Operating system upgrades and patches are installed on the network infrastructure devices (servers, switches, routers, firewalls) on an ongoing basis. Network administrators monitor network activity to watch for signs of attack or intrusion.

Servers

The Library maintains servers to support email, file and print services, remote access, and specialized applications such as document management systems, the KLAS system, and the ILS.

Workstations (PC’s)

Approximately 350 PC’s support CSL’s staff and public users. Of these, 122 support the Integrated Library System, including the Web Catalog.

CSL standardizes PC hardware, software, and configurations to the extent feasible to provide efficiencies in support and to enable staff to move from desktop to desktop with minimal differences in configuration. Public PC’s are provided to support access to the Internet, specialized commercial databases, and special materials on CD-ROM and other media. Two public PC’s for visually and physically impaired clients at the Braille and Talking Book Library offer wheelchair accessibility, screen magnification utilities, screen reader (voice output) utilities, and a Braille tablet interface.

The CSL PC support staff utilize Symantec (formerly PowerQuest) Partition Magic and Deploy Center disk imaging software to facilitate efficient deployment of new systems and to reinstall operating systems and applications on systems that experience problems.
5.0 Proposed Solution

CSL proposes replacing the current Integrated Library System with a "commercial off-the-shelf" (COTS) solution and installing the new system on site at the California State Library.

The purchase of a COTS system replacement meets all 12 objectives for the CSL’s Integrated Library System.

Installing a COTS replacement system onsite has the least cost and the least risk of the feasible solutions.

The overall course of action for this solution includes:

- Purchasing a replacement system via an RFP process,
- Installing the replacement system onsite at the CSL,
- Converting the Library’s existing DRA Classic databases,
- Migrating operations to the replacement system.

Purchasing an onsite COTS system is the solution with the least risk because:

- It avoids the risks of continuing to support one of CSL’s two critical IT applications using unsupported applications software on a discontinued hardware platform.
- It avoids the risks of developing and maintaining a custom solution.
- It avoids the performance and availability risks of using an offsite server to support library office automation tasks.
- It avoids the risk of losing or corrupting the CSL’s existing Integrated Library System data.
- It avoids the risk of prolonged service disruption due to untested data migration processes.

Purchasing an onsite COTS system is the solution with the least cost to the state:

- Procuring a COTS solution avoids the costs of developing a custom solution, and the increased costs of maintaining a custom solution.
- Installing a COTS solution onsite avoids the ongoing increased costs of supporting an off-site hardware platform.
- Procuring a COTS solution avoids the necessary increases in staff required by the other solutions.
- By procuring the replacement system via a competitive RFP process, the CSL ensures that the replacement system will be the most cost effective COTS option.
The total estimated project costs are $2,543,795, which includes $1,380,109 in one-time purchases of goods and services, $249,728 in continuing costs for maintenance and telecommunication services, and $913,958 in staff redirection costs. The proposed procurement schedule is included in the ITPP (Appendix I).

The CSL will work with DGS to refine the details of the proposed IT Procurement Plan, once the project is approved.

Once the project is completed, additional funding will be pursued via BCP to establish a hardware replacement cycle (i.e., “tech refresh”) beginning in FY 2011/12.

5.1 Solution Description

1. Hardware:

Each vendor’s response to the RFP must include the specification and inclusion of the necessary servers to support the replacement system. Based on a Request for Information (RFI) issued in February 2006, CSL anticipates that the server hardware proposed by ILS vendors will include:

- 1 Primary server/Database server
- 1 Web catalog server
- 1 Test/Recovery/Training server
- 1 Link resolver server (may be included in solutions proposed by some vendors)

Other new hardware required for a system replacement will include:

- 41 barcode scanners (to replace 17-year-old Intermec 9510 scanners)
- 12 printers (specialized printers for printing circulation "date due" slips and receipts)
- 35 PC’s (to replace dumb terminals)

The following existing CSL hardware will be used with the new system:

- 42 barcode scanners (Intermec 9710 and 9730 scanners)
- 108 staff PC’s, with local and network printers
- 14 PC’s supporting public access to electronic resources

2. Software:

As with hardware, vendors who respond to the RFP will be required to specify the software needed to support their ILS proposal.
The software proposals must include the purchase and maintenance costs for:

- Operating system software for each server (Windows 2003 or Sun Solaris)
- Database management software
- Integrated Library System client and server applications software
- Report Writer software (solutions from some vendors)

Additional software required for this solution that will be purchased separately from the ILS contract will include:

- 35 new software licenses for additional PCs (covering antivirus, office applications, and other software utilities, as installed on all standard PC configurations at CSL).

3. Technical Platform:

The proposed solutions from ILS vendors will be suites of client/server applications software, running on either a Windows 2003 or Sun Solaris platform:

- The database management software, the server applications software, and the databases will reside on one or two servers (depending upon the vendor) and be replicated on a testing/recovery/training server.
- The Web Catalog software will reside on a web server.
- The client applications software will reside on staff PC's.

The database server, the test/recovery/training server, and the staff client PC's will reside within CSL’s existing LAN infrastructure behind an existing firewall and utilize TCP/IP as the transport protocol.

The web server that supports the Web Catalogs will be situated in CSL’s “DMZ” network segment, separated from the internal network by a firewall. It will not contain any bibliographic or patron information. The web server will run queries against the database server and send display results to clients (either clients within CSL’s network or on the Internet). (If the vendor’s solution includes a separate Link Resolver server, it too will be located in the DMZ.)

Staff at the Sutro Library in San Francisco will continue to connect to the Integrated Library System via a dedicated data line supporting a wide area network link. The capacity of the existing data link will likely need to be upgraded from the current 56KB capacity that supports the current 9600 baud terminal environment to one capable of supporting a client/server application platform. A dedicated data line will also be needed to support staff located at CSL’s service desk within the State Capitol building. Estimated costs of these data lines are detailed in Appendix B and included in the Economic Analysis Worksheets.
4. Development Approach:

The proposed solution will utilize commercially available software developed for and used by many libraries throughout the world that are similar to the CSL in size, function, and complexity. The project will not require customized software development.

5. Integration issues:

Acceptable vendor proposals must utilize CSL’s current cable infrastructure, the client/server communication must be compatible with CSL’s existing TCP/IP network, and the proposals must be consistent with recognized industry security practices.

As described earlier, the database server will be protected from public Internet access via its placement in the internal CSL network behind a firewall, while the web server hosting the public access catalog will be situated in the Library’s existing DMZ network segment.

Modifications to the existing firewall will be made by CSL to accommodate the new servers.

All vendors considered during the RFP process must have experience successfully migrating one or more libraries from a DRA Classic Integrated Library System to the vendor’s recommended solution.

6. Procurement approach:

The library system marketplace is very mature. Vendors that develop, sell and support systems for libraries are well known and well documented in a variety of impartial library-industry publications. CSL identified a potential vendor pool of seven vendors representing eight integrated library system products that support libraries of the size and complexity of the State Library and that adhere to industry-recognized standards for bibliographic data formats and interchange. The list includes all vendors listed in Integrated Library Software: A Guide to Multiuser, Multifunction Systems (Library Technology Reports, Jan/Feb 2004). This report evaluates all vendors that offer a multi-user ILS, for both public and academic libraries. The list also includes all vendors identified by Library Automation Consultant Diane Mayo in her presentation of July 28, 2005, Thinking about Your Next Automated System, presented by Infopeople (http://www.infopeople.org). Further, CSL monitors a variety of other independent, reliable sources of news relating to the library system marketplace on an ongoing basis, including Library Journal, Smart Libraries Newsletter, Library Technology Reports, and others.

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Footnote:

1 The list includes all vendors listed in Integrated Library Software: A Guide to Multiuser, Multifunction Systems (Library Technology Reports, Jan/Feb 2004). This report evaluates all vendors that offer a multi-user ILS, for both public and academic libraries. The list also includes all vendors identified by Library Automation Consultant Diane Mayo in her presentation of July 28, 2005, Thinking about Your Next Automated System, presented by Infopeople (http://www.infopeople.org). Further, CSL monitors a variety of other independent, reliable sources of news relating to the library system marketplace on an ongoing basis, including Library Journal, Smart Libraries Newsletter, Library Technology Reports, and others.
Because of the size and the maturity of the library system marketplace, CSL proposes a competitive procurement approach via the RFP process for the purchase of an Integrated Library System package from a single vendor consisting of:

- Servers, storage and backup devices,
- Server operating systems,
- Client and server applications software,
- Database management software,
- Data conversion services,
- Installation services
- Training services, and
- Maintenance and support services.

Peripheral hardware devices (barcode scanners, printers, etc) and PC’s will be purchased under the California Strategic Sourcing Initiative whenever possible. Otherwise, they will be purchased according to DGS’ Purchasing Authority Manual and current Management Memos.

Because the cost of the proposed system exceeds CSL’s delegation authority of $500,000 for IT procurement, CSL is submitting an Information Technology Procurement Plan (ITPP, Appendix I) to Department of General Services and will carry out the RFP solicitation and selection processes in coordination with Procurement Division staff.

7. Technical Interfaces:

The replacement system must continue to be compliant with a number of current national and international library standards (as detailed in the functional requirements section 3.4.17).

As detailed in section 3.4.13 – 3.4.16, compliance with these standards is necessary:
• To continue to support the exchange (import/export) of bibliographic and authority records with OCLC, Marcive, Inc., the University of California Melvyl® system, and others;
• To continue to support cross-catalog search capabilities with other libraries' catalogs (i.e., via Z39.50 protocol); and
• To continue to allow the display of data from within the system according to standard protocols used by libraries.

8. Testing plan:

The vendor will be responsible for installing, configuring and testing the servers, software and other devices prior to implementation.

The vendor will work with designated CSL staff to develop a data-mapping schema and to run one or more preliminary data conversion tests using a full export of the DRA Classic databases to ensure that the data-mapping scheme imports all essential records and field information successfully. Key CSL technical and program staff will perform a careful review of the test run of imported data and approve the data map and import process prior to the final data conversion.

Upon system installation, the Program Manager and designated program staff will conduct system testing to ensure it performs all functions and meets performance requirements specified in the functional requirements, section 3.4.26.

9. Resource requirements:

Estimated staff resource requirements for implementation, training and ongoing operation of the proposed system can be found in Appendix B.

No additional staff positions will be requested to support this project.

These estimates are based on:

• CSL’s experience operating an Integrated Library System since 1989/90,
• Information gathered during the RFI process in February 2006,
• Information gathered by the Project Manager while attending conferences attended by libraries that have embarked on similar projects,
• Information published in library automation journals, and
• Information obtained attending workshops on Integrated Library Systems.
10. Training plan:

The objective of the training plan is to ensure a knowledge transfer from the system vendor so that both CSL technical and program staff gain sufficient skills to effectively and efficiently operate the new system by the close of the project.

Vendors will be required to submit training proposals in their RFP bid packages (functional requirements 3.4.25), which detail their plan for knowledge transfer to CSL staff. As part of the training plan, CSL proposes acquiring a testing/recovery/training server to facilitate the migration from the current DRA Classic system to the replacement system and to provide a testing platform for software patches and upgrades. The training/testing/recovery server will fulfill a variety of requirements, including:

- Providing hardware redundancy for operational recovery purposes.
- Ability to train staff before, during and after migration on a system containing CSL's own bibliographic, authority, item and borrower records.
- Ability to test implications of proposed global updates and configuration changes to the system after it is operational without affecting the production system and the "live" data.
- Ability to test system configuration decisions and their implications vis-à-vis CSL operational requirements using CSL data before the system goes live.
- Ability to test data conversion decisions (i.e., data mapping decisions) before the final data extract and conversion is performed.

The successful vendor must propose a training package that includes a combination of presentations and demonstrations for all staff coupled with a "Train the Trainer" approach in which the vendor provides detailed training to key program staff for all functional tasks. These key staff members will present and/or facilitate group and one-on-one training sessions for the rest of the staff before, during and after migration. The "Train the Trainer" approach will provide the following benefits:

- In-house trainers will better understand implementation decisions and processes in the context of the CSL’s policies and current operating procedures.
- A stronger transfer of knowledge and skill is likely to take place between the vendor trainers and CSL trainers than with a full vendor-provided training approach.
- CSL trainers are likely to adopt a higher level of ownership and responsibility over library system operations and functions if given the responsibility to train other program staff.
- This approach supports the ability for CSL trainers to assume ongoing "lead" roles for specialized functional areas and to serve as intermediaries between the CSL program staff and the vendor support staff.
This approach provides more flexibility to control the schedule, site, frequency, and size of training classes. This approach equips CSL with the knowledge and skills to provide in-house training for new and existing staff on an ongoing basis.

In addition to the formal training outlined below, CSL will explore options for providing in-house trainers with training in instructional techniques and for providing all affected staff with stress management/change management training prior to system implementation.

The training plan will address the following major groups of users:

- **Technical staff**

  The vendor will train staff responsible for the ongoing technical support and operations of the system. Training will include server and client configuration and reconfiguration details, required “care and feeding” maintenance activities of the server (such as backup, restore, re-indexing processes), account administration, data import/export procedures, report generation, and troubleshooting tips. Technical staff will build upon vendor-supplied documentation to begin detailing site-specific operations, maintenance and operational recovery activities. Key program staff may also participate in portions of the technical training.

- **Key Program Staff**

  Key program and technical staff will participate in planning and training sessions focused on configuration options and implications. These sessions will be the springboard for establishing the initial system configuration, transaction rules (such as policy files), and for developing data conversion mappings. As mentioned above, key program staff will also serve as CSL's own trainers, responsible for training other program staff in specific system functions and tasks.

- **All Affected Program Staff**

  All affected program staff will receive training from the vendor, in-house trainers, or both, focused and relevant to their specific operational functions. As noted earlier, vendors will be required to include training proposals as part of their RFP bid responses, with the proposals evaluated as weighted factors during the bid review process.

- **Customers**
Customers will likely experience changes in the appearance of the Web catalog pages. Public services staff will develop guides and respond to customer inquiries regarding changes to the Web Catalog.

11. Ongoing Maintenance:

CSL will contract with the vendor for ongoing maintenance and support of the Integrated Library System beyond the initial warranties (functional requirements 3.4.27).

The proposals and costs for ongoing maintenance and support will be required as part of the vendor bid packages and will be comprised of the following components:

- Server hardware maintenance and support,
- Server operating system maintenance and support,
- Server application software maintenance and support,
- Client applications software maintenance and support.

Ongoing support for the current Integrated Library System is included as part of the responsibilities of one Senior Information Systems Analyst (Specialist) and one Staff Information Systems Analyst (Specialist). These responsibilities will continue with the installation of a replacement system, as detailed in Appendix B.

12. Information security:

As with the current Integrated Library System servers, the proposed database and web servers will be housed in CSL’s Computer Room, which provides a number of physical security features, including uninterrupted power supply, Halon- and water-based fire suppression systems, temperature and humidity control, leak detection system, a telephone alert system, and limited and controlled access via electronic card key system.

The proposed testing/recovery/training server will be housed in a separate CSL building, in a secure room that includes power conditioning and a fire suppression system.

All of the servers will be configured with all relevant security-related operating system and application patches and CSL staff will apply new patches as available to continue to maintain the highest levels of security.

The Library’s existing firewall will control access to the servers from the Internet.
The server that hosts the online public access catalog will be located in CSL's "DMZ" network segment, separated by a firewall from the database server(s). The public access server will not contain any bibliographic or patron databases, but will serve only to provide an interface to run predefined queries against the records stored on the database server and to transmit patron requests.

Further, operating system and application level accounts will be restricted only to those administrators and program staff members who require access, and rights and privileges for access to data will be given as appropriate to the role of the user.

CSL maintains a contract with DTS for occasional network design and security consultation. To ensure that changes to CSL's systems, network and security infrastructure proposed to implement the COTS solution meet the State of California standards for security, CSL will tap the technical resources provided by DTS for review and guidance as needed.

The CSL Information Security Officer (ISO) will review and approve all security measures implemented on the new system for compliance with OTROS requirements and industry best practices.

13. Confidentiality:

Consistent with current library practices and California law (Government Code, §6254(j), all borrower-related information, whether in electronic or paper form, is considered confidential.

Borrower records for individuals contain home addresses and home phone numbers, but do not contain Social Security numbers. Some old borrower records for individuals do contain driver’s license numbers, but these numbers will be purged from the system at the time of data migration.

Only system administrators and program staff who need access to the data are given accounts on the current Integrated Library System. Per functional requirement 3.4.11.10, the replacement system must support the ability to assign different levels of privileges to program and technical staff based on their specific functions.

14. Impact on end users (i.e., CSL staff members):

Replacing the current Integrated Library System will require some workflow modifications and introduce a new interface to staff members that use the Integrated Library System. CSL plans to use the following approaches to prepare users for the changes the new system will bring about:
- CSL will use lessons learned from other libraries that have recently migrated from DRA Classic systems to the selected system to ease our own migration, if available.

- State Library Services Bureau management staff will hold ongoing meetings with all affected staff members prior to the migration to share information about the planned changes, to answer questions and to listen to and discuss concerns.

- CSL will investigate options for providing staff with change management and/or stress management training prior to the migration and system startup period, and again after implementation.

- To the extent feasible and relevant, CSL will conduct multiple training sessions for affected staff: before system implementation, during the migration and system startup period, and again after implementation.

15. Impact on existing system:

The migration plan will include a final switchover date at which time the data on the old Integrated System will no longer be updated or accessed. A snapshot backup tape of the data at the time of switchover will be maintained for a period of time after the switch until it is deemed no longer relevant.

Once the new library system is fully installed and operationally stable for all functional modules, all databases and software specific to the DRA Classic system will be purged from the existing Alpha disk arrays, the maintenance contract for the DRA Classic System will be cancelled, and the Alpha server, dumb terminals and other hardware that no longer meets the needs of CSL will be disposed of in accordance with State surplus procedures.

16. Consistency with overall strategies:

This project is consistent with CSL’s business strategies and information management strategies, evidenced by the references provided below, excerpted from CSL’s most recent Strategic Plan and Agency Information Management Strategy:

California State Library Strategic Plan²:

Goal 1: Align Library Services to meet changing needs of customers, with specific reference to electronic information services.

² California State Library Strategic Plan, updated June 2006.
Objective 13: By July 2009, implement the next phase of the Library's central Integrated Library System (ILS) that will preserve its valuable bibliographic databases, maintain the productivity improvements achieved by the current ILS, and increase users' access to its information resources and services. (page 19)

California State Library, Agency Information Management Strategy (AIMS)³:

Goal 1: Adopt and maintain appropriate technologies that provide library services to meet the changing needs of customers.

Objective 5: By June 2005, expand direct access to electronic databases and State Library research for state government officials and staff. (page 4)

Goal 2: Explore, implement, develop and support technologies and systems to effectively and efficiently manage and preserve the collections of the California State Library.

Objective 8: By June 2005, develop a strategy and timeline for migrating CSL's DRA Classic systems to viable alternatives. (page 5)

Goal 3: Implement and maintain infrastructures, systems and applications that increase the effectiveness and efficiency of State Library operations.

Objective 12: By December 2006, define system requirements for CSL's future Integrated Library System. (page 5)

17. Impact on current infrastructure:

Vendor responses to the RFP will be partially evaluated for their fit into CSL’s current information technology infrastructure. Because CSL proposes placing the server at CSL using existing network infrastructure, it is anticipated that only minor modifications will be required.

CSL will need to establish and/or upgrade WAN links to connect its Sutro Library branch in San Francisco and its Capitol Branch to CSL’s network. Firewall and router configurations will need to be reviewed and modified as necessary to securely accommodate the system changes.

18. Impact on data center:

The proposed solution will not require additional capacity at or ongoing support from the data centers. However, as stated above, CSL will seek expert advice from the DTS security staff to review proposed changes to the firewall, network configuration, protocols and other components to ensure the system complies with all State standards and follows industry best practices relating to network and data security.

19. Data center consolidation:

The proposed solution is an office automation application and does not fall within the data center consolidation plans. However, CSL obtained cost estimates from the DTS for locating the servers at the data center and the cost for doing so is significantly higher than hosting them at CSL. Further, locating the servers at the data center significantly increases the technology involved, the complexity of the configuration, and the potential points of failure of operations by requiring CSL staff to interact with the application via virtual private network (VPN) connections over the Internet. It also requires more staff resources during implementation as well as for continuing operations. See Appendix C for details regarding the costs for locating the server at the DTS data center and refer to section 5.3.6 for a full discussion of this alternative.

20. Backup and operational recovery:

CSL plans to utilize the test/recovery/training server as part of an operational recovery plan for the proposed system. The production server will be located in a secure, environmentally controlled computer room. The training server will be installed in the Library’s secondary computer room located in another building. In the event of a disaster that affects the main computer room, CSL can restore live operations on the training server in the other building.

CSL’s current Operational Recovery Plan for Information Systems and Services (ORP) contains a detailed analysis of the current Integrated System recovery requirements, overall recovery strategies, offsite tape rotation procedures and locations, roles and responsibilities, testing procedures, and step-by-step recovery procedures and timelines. When CSL submitted the ORP to Department of Information Technology (DOIT) in 2002, DOIT acknowledged the quality of the plan and asked for permission to share portions of it with other agencies to use as a guide. Many of the procedures and strategies outlined in the plan for the current system will likely remain as appropriate for the proposed system, however many of the details will need to be modified. CSL will seek guidance and recommendations from the selected vendor to incorporate recommended practices into CSL’s plan. One-time and ongoing costs associated with revisions to CSL’s
ORP are included in the staff support cost figures, specifically in the documentation and recovery testing figures.

21. Public access:

The proposed system includes website access to CSL's catalogs representing the library's resources and collections. All safeguards that have been in place for public access to the Integrated Library System online catalogs will be implemented for the new system. If additional modifications are required that have security implications (i.e., changes to firewall configurations or access levels), CSL will consult with vendor and DTS security specialists to assist with risk assessment and mitigation. CSL's Information Security Officer will also review and approve any changes to the security infrastructure or configurations.

22. Costs and Benefits:

The total estimated project cost is $2,543,795, which includes $1,380,109 in one-time purchases of goods and services, $249,728, in continuing costs for maintenance and telecommunication services, and $913,958 in staff redirection costs.

The hardware costs include servers, tape backup device(s), a system printer, barcode scanners, and receipt/date due printers.

The proposed solution utilizes 108 PC systems already in place as client systems; however, the purchase of 35 PCs is included to replace the existing dumb terminals. (See Appendix B for details.)

The hardware and software configurations must be specified by the vendor at a level appropriate for the size of the library's databases and workload, while allowing for anticipated growth in the databases over the next 5 years as specified in the functional requirements, section 3.4.26.3.

The proposed solution is a COTS application and does not require customization; therefore development costs are not required.

Continuing project costs for goods and services are anticipated to total $249,728 for three years covered by the Economic Analysis Workbook (section 8). Thereafter, continuing costs will consist of $159,060 per year for telecommunication services and hardware/software maintenance costs, plus $140,399 annually (1.6 PYs) in continuing staff costs that will be redirected from the current operations.
After implementation, continuing IT staff costs will be $140,399 per year. Continuing program staff costs will remain unchanged from the current continuing program staff costs of $1,165,389.

While the current ILS is used by 76 program staff members, with 1.6 IT positions contributing support for the system, the PY costs identified in the detailed cost estimates (Appendices A through C) and the Economic Analysis Worksheet (EAW) reflect the estimated time each individual actually spends interfacing with or supporting the system.

The benefits of the proposed solution include:

- Risk reduction (for an application that is critical to California State Library operations),
- Avoiding data degradation caused by staff using non-standard data entry "work-arounds" once the current system drifts from complying with national standards for library data,
- Cost avoidance (additional PY’s will be needed to process materials on an ineffective and inefficient integrated library system).

A detailed cost breakdown of the proposed solution is included in Appendix B.

23. Sources of funding:

During FYs 2007/08 – 2009/10, CSL proposes redirecting to the project a total of $913,958 from existing staff costs, $23,487 from existing system costs, and requesting budget augmentations via Budget Change Proposals that total $1,606,350.

The proposed solution utilizes existing staff resources; no additional staff positions are being requested for implementation or ongoing operations of the system.

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Total Project Costs</th>
<th>Redirected Staff Costs</th>
<th>Redirected Existing System Costs</th>
<th>Percent Redirected</th>
<th>General Fund Augmentations Needed</th>
<th>Percent needed via Budget Augmentation</th>
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</thead>
<tbody>
<tr>
<td>2007/08</td>
<td>$191,568</td>
<td>$140,246</td>
<td>$ -</td>
<td>73.2%</td>
<td>$51,322</td>
<td>26.8%</td>
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<td>2008/09</td>
<td>$2,052,768</td>
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<td>2009/10</td>
<td>$299,459</td>
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<td>54.7%</td>
<td>$135,573</td>
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<tr>
<td></td>
<td>$2,543,795</td>
<td>$913,958</td>
<td>$23,487</td>
<td></td>
<td>$1,606,350</td>
<td></td>
</tr>
</tbody>
</table>

*Beginning 2010/11, redirected existing system costs will total $47,684 annually.
5.2 **Rationale for Selection**

The purchase of a COTS system replacement is the only solution that meets all 12 objectives for the CSL's Integrated Library System.

Installing the COTS replacement system onsite has the least cost and the least risk of the feasible solutions.

In addition, the purchase of a COTS system that is supported by a commercial vendor and designed for large libraries:

- Ensures that CSL can continue to meet its legislated mandate to provide direct library services to members of the Executive Branch, California Legislature, legislative staff members, state officers and employees, residents of areas in California where no local library service is available, and other designated groups and individuals.

- Ensures that CSL can operate one of its critical applications on hardware and software platforms that have not been declared "end of life."

- Gives CSL IT staff and program staff control over operational stability and recovery.

- Enables the CSL to meet all objectives without an increase in either IT or program staff positions and without application development or customization risks and costs.

- Enables the CSL to more effectively manage access to contracted electronic resources by authorized customers.

- Does not rely upon connectivity to a remote server and transmission of data via the Internet to perform routine daily staff functions, such as catalog searches, circulation tasks (materials check-in and check-out), cataloging tasks, acquisitions tasks, and serials checkin.

- Provides the lowest risk of disruption to State Library operations of all alternatives considered.
The assumptions for this solution are that:

- The Integrated Library System marketplace will continue to include a number of vendors that sell and implement systems that match the CSL’s functional requirements.

- The Integrated Library System marketplace will continue to include a number of vendors that have experience migrating large DRA Classic databases (similar in size and complexity to the CSL’s databases) to a new Integrated Library System platform.

- Funds will be made available to the CSL for the purchase, implementation and support of a replacement COTS Integrated Library System.

- No additional staff cuts will be made to the CSL’s IT staff or State Library Services program staff.

Over 300 other libraries were faced with the same problems as the CSL when SirsiDynix announced the demise of the Classic Integrated Library System. As of spring 2006, over 90% of the libraries have migrated to a new COTS system or have a funded migration plan in place. The remaining 24 libraries are seeking funds and approval to follow the same path.

5.3 **Other Alternatives Considered**

The Library considered the following alternatives:

- Do nothing
- Return to manual processing
- Maintain the application software and port the software to a new operating system
- Develop a replacement application
- Implement an open source solution
- Procure a replacement system and contract with Department of Technology Services to host it at the data center (a feasible alternative, “Alternative 1”)
- Procure a replacement system and host it within CSL’s network in secure computing facilities (the recommended alternative)

Each non-recommended alternative is discussed below.

The following grid summarizes how well each alternative meets the objectives.
## Comparison of Alternatives

<table>
<thead>
<tr>
<th>Objective 1</th>
<th>5.3.1: Do Nothing</th>
<th>5.3.2: Return to Manual Processing</th>
<th>5.3.3: Port to New OS &amp; Maintain</th>
<th>5.3.4: Develop Replacement</th>
<th>5.3.5: Implement Open Source</th>
<th>5.3.6: (Alternative 1)</th>
<th>5.1: (Proposed Solution)</th>
<th>Procure at CSL</th>
</tr>
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<tr>
<td>Preserve DB</td>
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<td>-</td>
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<td>✓</td>
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<tr>
<td>Productivity</td>
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<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Efficiency</td>
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<td>-</td>
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<td>-</td>
<td>-</td>
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<tr>
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<tr>
<td>OpenURL</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

- ✓ Meets objective
- -- Fails or is Unlikely to Meet objective
- ☞ Questionable or only Partially meets
5.3.1  **Do Nothing**

SirsiDynix has announced it will not further develop the Integrated Library System software used by the CSL and will not make modifications to the software to keep the system abreast of the changing standards in the library automation world.

As discussed in section 3.2, the CSL’s Classic Integrated Library System will fail when a critical change occurs in any of these areas:

- A critical change is made to the record formats used by libraries (MARC21) that the existing system cannot process. An increase in PY’s would be needed to offset the lost efficiencies, such as the loss of batch loading of bibliographic records, and copy-cataloging via OCLC, as reflected in the Existing System costs for FY 2009/10 in the EAW’s. (Even with an increase in PY’s, the Library’s bibliographic data could lose its integrity in relation to standards because non-standard “work-arounds” would need to be utilized to continue operations.)

- A critical change is made by Hewlett-Packard to the OpenVMS AXP (Alpha) operating system that is incompatible with the existing Integrated Library System applications software.

- CSL’s Alpha server fails. Hewlett-Packard will cease production of Alpha servers that run the OpenVMS AXP software in October 2006. SirsiDynix will not port its Classic suite to HP’s next generation VMS platform (OpenVMS Integrity for the Integrity line of servers). The CSL will have to depend upon the availability of used Alpha servers and replacement parts to recover from a catastrophic disaster.

The chance of one of these risks occurring increases each month that the CSL continues to operate its current Integrated Library System.

“Do Nothing” is not a feasible solution because it fails to meet 11 of the 12 objectives of this study. Moreover, “Do Nothing” threatens the CSL’s ability to meet its mandates to “collect, preserve, and disseminate” information per Education Code §19320 (h, k, l).

5.3.2  **Return to Manual Processing**

Prior to 1988, the Library maintained its catalog, circulation, acquisitions and serial check-in records via manual processing.

Access by users to the Library’s collections was limited to paper index cards filed onsite in multiple, separate card catalogs.
The disadvantages of returning to manual processing include:

- The benefits to the Library's users of its web-accessible electronic catalogs, including search flexibility, search speed, and offsite "24 x 7" availability would be lost. In FY 05/06, over 280,000 online searches were performed in the web catalogs.
- The state would lose the investment it has already made in converting the CSL catalogs to electronic format.
- It is not feasible to re-create the manual card catalogs. The production and filing of 16 years worth of catalog cards is unimaginable.
- With a manual paper-based system, CSL's catalogs and services would be available only to in-house users during the Library's public hours. Only one individual would be able to use a "record" or group of records (i.e., a catalog drawer) at a time.
- The efficiencies gained by the installation of the original Integrated Library System (and documented in the project's PIER report) would be lost. Examples of the objectives achieved by 1989/90 project include:
  - Increase staff productivity by 85% in performing the following tasks: [determining order status, receipt status and loan status of items].
  - Increase staff productivity in the serials claiming and cancellations function by 75%.
  - Increase system support for the circulation function to reduce staff time required for overdue processing by 90%.
  - Reduce staff time required for card catalog filing and maintenance by at least 75%.
- The Library could not maintain service levels with current staffing if it attempted to support its services via manual processing. Since CSL installed the original Classic system in 1989/90, staffing within CSL's State Library Services bureau has been repeatedly cut, resulting in a current staffing level nearly 1/3 below 1989 levels. There is no realistic technique to estimate the additional resources required to revert to manual processing and still meet current service levels.

Returning to manual processing and the maintenance of paper card catalogs fails to meet ten of the twelve objectives in section 3.3. Thus, it is not a feasible solution. In today's information environment, a "Return to Manual Processing" solution would prevent the CSL from meeting its mandates to "collect, preserve, and disseminate" information per Education Code §19320 (h, k, l).

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4 In FY 1989/90, there were 138.6 positions supporting library services. Subtracting the 23.5 positions in the Braille and Talking Book Library, who used a separate automated circulation system, brings the total number of positions that supported non-BTBL library services in 1989/90 to 113.1
In FY 2006/07, there are 99.5 positions supporting library services. [The State Library Services total of 133.4 includes 33.9 positions in the California Research Bureau and the California Cultural and Historical Endowment, who do not support library services.] Subtracting the 23.0 positions in the Braille and Talking Book Library, who use a separate automated circulation system, brings the total number of positions supporting non-BTBL library services in 2006/07 to 76.5. This is a 32.4% drop from the number of positions supporting library services in 1989/90.
5.3.3 **Port the Applications Software to a New Operating System and Hardware Platform**

CSL's current Integrated Library System application software is proprietary software owned and licensed solely by SirsiDynix Corporation. SirsiDynix has no plans to ever release the underlying code for the applications software to customers or to allow customers to modify the software.

Even if the CSL could obtain the rights to modify the applications software, CSL does not have any programming staff and could not attempt to port the current Classic Integrated Library System to a new operating system and hardware platform.

If the CSL could obtain the rights to modify the applications software, and contract for the necessary programming skills, it is still unknown whether the CSL could be successful at porting the application to a new operating system and hardware platform.

In fact, it is very likely that the CSL would fail to accomplish 11 of the 12 objectives by attempting to implement this solution.

Thus, obtaining and purchasing the licensing permissions, and contracting for the necessary programming skills to port the applications software to a new operating system and hardware platform, does not create a feasible solution to the business problems and opportunities.

5.3.4 **Develop a Replacement Application**

The 35-year old industry that produces library system software is very mature and the software functions are very complex. Many large libraries that had developed their own Integrated Library Systems in the late 1970's and early 1980's (such as the libraries at UC Berkeley and UCLA) have abandoned these "home-grown" systems for COTS solutions because the costs to maintain the software, and keep the software compatible with changing library automation standards, was too high.

Implementing a development solution would require the CSL to manage a software development project, to direct the work of contracted development staff, to develop data migration tools, and to oversee software maintenance efforts after the development was complete. Further, this alternative is likely to cause major disruptions to operations.

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5 It is estimated that SirsiDynix employed approximately 40 programmers that supported the Classic Integrated Library System suite of applications software. Most of the programmers have been reassigned to the divisions that support the other two ILS application suites marketed by SirsiDynix: Horizon and Unicorn.
Even if the CSL could obtain the necessary resources to develop a replacement application, it is still unknown whether the CSL could be successful at developing and maintaining its own Integrated Library System software suite, particularly during the timeframes required. Thus, it is very unlikely that 11 of the 12 objectives could be met by implementing this solution.

The risks and costs associated with application development would only be justifiable if no other alternative could reasonably satisfy the business objectives and functional requirements of this project. Thus, a software development solution is not a feasible solution.

5.3.5 **Implement an Open Source Solution**

During the last five years, a few small, individual libraries have explored the possibility of open source solutions for their Integrated Library Systems. Examples include Koha (used by the Horowhenua Library Trust Library in New Zealand and the Nelsonville Public Library System in Ohio) and Evergreen (used by some Georgia public libraries).

Library automation software is very complex. These early implementations of open source solutions have focused only on some of the components of a full ILS and have only been tested in libraries with small, simple collections compared to the collections of the CSL. No known open source solution incorporates all of the functional requirements of the CSL, let alone integrates all of the CSL’s required components. Marshall Breeding, a leader in the evaluation of library automation systems, notes that

> "open source automation systems offer only promise and potential and are not yet a viable option for a run-of-the-mill library. Even for small libraries that might be satisfied with the capabilities of the open source systems, the technical implementation and difficulty in securing ongoing support remain a challenge."

Additional staffing would be needed at CSL to manage an Open Source software development project, to direct the work of contract staff or vendor teams, and to oversee software maintenance efforts after the development is complete. Further, this alternative is likely to cause major disruptions to operations and possible data integrity risks.

It is very unlikely that eight of the twelve objectives could be met by attempting to implement (and develop) an open source solution.

The risks and costs associated with Open Source software would only be justifiable if a mature, full Open Source Integrated Library System existed, along with a marketplace of support vendors. This is not the case. Thus, implementing an Open Source solution is not a feasible alternative.

---

5.3.6 **Procure A Replacement System And Contract With Department Of Technology Services To Host It At The Data Center** (Alternative 1)

CSL explored the possibility of procuring a COTS replacement Integrated Library System and locating the servers at the data center managed by the Department of Technology Services (DTS).

Such a solution satisfies 10 of the 12 objectives of this study (all but Objectives 3 and 4).

Achieving Objective 4 (the continuation of the efficiencies achieved by the installation of the original system) is more risky with this solution, as discussed below.

Library vendors typically sell their ILS solutions as "turn-key systems", fully installed, configured, tested and loaded with the library's own data. This approach greatly minimizes implementation and operating problems and reduces service disruptions. However, DTS only fully supports servers they purchase, install and configure to DTS standards. As an alternative, the data center does provide a hosting service for “foreign” servers named COEMS or “Customer-Owned Equipment Managed Services.”

Via the COEMS service, DTS would provide and maintain a secure physical environment, Internet/Ethernet connectivity for the servers, firewall, and virtual private network (VPN concentrator) for staff login access. DTS, however, would not be responsible for system monitoring, operating system and application patches, firewall support, data import and export tasks, troubleshooting (other than simple connectivity checks and reboots) or other “care and feeding” tasks. DTS does offer backup services at an additional cost.

If the servers were located at the DTS data center, CSL staff would connect to the server via the Internet to perform all daily tasks, including charging and discharging books, performing catalog maintenance, creating and updating order records, checking in serials, and running reports. A VPN Concentrator would need to be installed and configured at the data center to support up to 120 simultaneous VPN client connections. For optimum performance, the web catalog and training/test/recovery servers would also need to be located at DTS.

The advantage of this solution is:

- The data center provides a high level of physical security and uninterruptible power that is available at the data center.

The disadvantages of this solution include:

- The initial costs associated with this solution are much higher because additional telecommunication lines, firewall hardware, VPN concentrator and network devices are needed to support the connectivity (see Appendix C)
- The requirements to implement and support this solution are more complex.
- Ongoing costs are higher. (see Appendix C) Assuming a ten-year life, the cost increase over the life of the replacement system (implementation and ongoing operations) would be $936,162 more than the proposed solution.

- This alternative requires 1.2 PYs more in staff time for implementation, plus an increase of .6 PYs annually for ongoing operations. Over the expected life of the system, a total of 6.6 PYs of additional staff time would be required compared to the proposed solution. Although the increase in IT PYs may appear minor, the .6 PY annual increase cannot be redirected from current staff and would require a staff augmentation. (See details in Appendix C.)

- It introduces additional potential points of failure, which presents a greater risk of disruption to State Library operations. It relies upon connectivity to a remote server and transmission of data via the Internet for most of the day-to-day tasks performed on the system. CSL would be dependent upon a reliable and fast Internet connection for all of its operations. If the connection to the data center were down, most CSL library operations would stop. A communication problem lasting more than a few hours would cause significant workflow disruptions. Disruptions caused by server hardware problems would result in lengthier down times because IT staff would have to travel to the data center, possibly multiple times, to perform initial troubleshooting and to coordinate repairs by hardware support technicians.

- This solution requires a greater number of IT staff hours than the self-hosting option because more technology needs to be supported to maintain connectivity and security. Furthermore, frequent, ongoing visits to the data center by the CSL’s IT staff would be necessary to perform upgrades, patches and other maintenance and troubleshooting tasks that could not be done remotely.

- State Library Services staff performing daily system tasks would compete with and possibly impact other CSL applications using Interact bandwidth.

- Confidential patron and circulation information would be transmitted via the Internet using secure VPN or SSL protocols. It is likely that vulnerabilities to these protocols will continue to be found from time to time. Ongoing diligence in watching for and applying additional security patches for the chosen protocol will add to the already burdensome network security activities CSL performs on an ongoing basis for all supported platforms.

- There is no commitment from DTS that the COEMS service will continue ten years into the future.

Some of the typical advantages of locating servers at a data center do not apply in this situation:

- CSL’s main computer room provides the same environmental and security advantages as the data centers. (Access to the CSL’s computer room is restricted via an electronic card key system. The computer room environment is controlled via an independent HVAC system. A power distribution system provides backup power to all the equipment housed there in the event power to the building is disrupted. A Halon fire-suppression system and sprinklers provide fire protection, and a leak detection system provides an early warning in the event that moisture
develops under the raised floor. A Sensophone® system monitors computer room conditions (temperature, power, noise level, etc.) and alerts designated CSL IT staff if monitoring thresholds are exceeded.

- One advantage to locating a server remotely is the continuation or resumption of operations in the event of a catastrophe that affects the work site. Because the primary function of the ILS is to provide access to and management of the State Library's collections, remote operations are not necessary if the State Library's facilities are closed or unusable following a disaster. CSL's operational recovery plan does not utilize a hot-site or cold-site approach, but rather is based on a system replacement strategy.

One-time and ongoing costs for procuring a COTS ILS and locating it at a state data center are provided as Alternative 1 in the Economic Analysis Worksheet and also detailed in Appendix C.
6.0 Project Management Plan

The CSL will use a team approach, under the direction of a Project Manager, as the project management structure.

The Project Manager and Project Team will follow the Project Management Methodology (PMM) outlined in the State Information Management Manual (SIMM), section 200.

The Project Team will report to an Executive Team.

The Project Team will consist of:

- The Project Manager (Senior ISA, Dennis Hagen);
- The Program Lead and Implementation Team Lead (CEA II, John Jewell);
- The Data Conversion/Policy Matrices Team Lead (Senior Librarian, Janet Coles);
- The Training Team Lead (Senior Librarian, Vera Nicholas);
- The Technical Lead (Staff ISA, Mark Cashatt);
- The RFP Lead (DGS IT Acquisition representative, during the procurement phase);
- The ILS Vendor Rep (during the implementation phase).

Please refer to Appendix D for an organization chart of the Project and to Appendix H for Project Team profiles.

The Executive Team will control the change management process and insure that the project achieves the objectives established in this FSR. The Executive Team will be composed of:

- Project Sponsor (State Librarian, Susan Hildreth);
- Project Manager (Senior ISA, Dennis Hagen);
- Program Lead (CEA II, John Jewell);
- CIO (CEA I, Debbie Newton).

6.1 Project Manager Qualifications

Project Manager: Dennis Hagen, Senior Information Systems Analyst

Qualifications: Mr. Hagen has approximately 30 years of experience as a librarian/library systems analyst and has led two of the CSL’s previous large library system implementation projects (Project 7101-1 and Project 6120-8). He currently serves as CSL’s Systems Manager and is responsible for operation and technical management of the State Library’s two library information systems, the Integrated Library System and the KLAS system. Mr. Hagen joined CSL’s Information Technology Bureau in 1988 (then called the Library Automation Office) as systems librarian with the primary...
responsibility of leading the implementation of the Integrated Library System (Project 7101-1), which was in the RFP phase at that time. Mr. Hagen has excelled in all aspects of managing that and other projects, including leadership, analytical, business process and technical roles. During fiscal year 2005/2006, Mr. Hagen served as the project manager and led the successful replacement of the Braille and Talking Book Library's LBPH system with the KLAS system (Project 6120-8). He has also proven his effectiveness in planning, leading and executing numerous projects involving importing, exporting and converting bibliographic data between systems.

Education: Mr. Hagen holds Master of Library Science (MLS) and Master of Business Administration (MBA) degrees and has completed several training courses in project management and risk management.

6.2 Project Management Methodology

As stated above, the CSL will follow the Project Management Methodology (PMM) outlined in State Information Management Manual (SIMM) section 200. The detail and oversight framework followed will be commensurate with the size of the project.

6.3 Project Organization

The Project Team will consist of the individuals listed above in section 6.0. All will be committed to the project part-time (some current responsibilities will be reassigned to other staff members as needed). Please refer to Appendix D for organization charts of:

- Project Organization;
- California State Library;
- CSL, Information Technology Bureau;
- CSL, State Library Services Bureau:
  - Acquisitions/Catalog Sections,
  - Government Publications Section,
  - Special Collections (California History Section, Preservation, Sutro Library),
  - State Information and Reference Center,
  - Witkin State Law Library;
- CSL, California Research Bureau:
  - Information Services Section.
Five working teams will report to the Project Manager and Project Team.

The working teams will include representatives from all key CSL stakeholder groups. The five working teams will be:

- The RFP Team;
- The Implementation Team;
- The Data Conversion/Policy Matrices Team;
- The Training Team;
- The Technical Team.

Working team memberships are detailed in Table 6-1.
<table>
<thead>
<tr>
<th>RFP Team</th>
<th>Implementation Team</th>
<th>Data Conversion/Policy Matrices Team</th>
<th>Training Team</th>
<th>Technical Team</th>
</tr>
</thead>
<tbody>
<tr>
<td>DGS Representative</td>
<td>Team Leader (Program Lead - CEA II, John Jewell)</td>
<td>Team Leader (Senior Librarian, Janet Coles)</td>
<td>Team Leader (Senior Librarian, Vera Nicholls)</td>
<td>Team Leader (Staff ISA, Mark Cashatt)</td>
</tr>
<tr>
<td>Project Manager (Senior ISA)</td>
<td>Acquisitions Unit (Senior Librarian)</td>
<td>Acquisitions Unit (Senior Librarian)</td>
<td>Acquisitions/Serials Training Coordinators (Senior Librarian - Acq) (LTA II - Serials)</td>
<td>Client Hardware - Software Lead (Staff ISA)</td>
</tr>
<tr>
<td>Program Lead (CEA II)</td>
<td>Catalog Section (Librarian)</td>
<td>Catalog Section (Librarian)</td>
<td>Cataloging Training Coordinators (Librarian - Catalog Section) (Senior Librarian - GPS)</td>
<td>Client Hardware - Software Assistant (Associate ISA)</td>
</tr>
<tr>
<td>CIO (CEA I)</td>
<td>Serials Unit (LTA II)</td>
<td>Serials Unit (LTA II)</td>
<td>Circulation Training Coordinators (Two Senior Librarians - Calif &amp; Law) (Two LTA II's - Calif &amp; SIRC)</td>
<td>Information Security Officer (Staff Services Manager I (Specialist))</td>
</tr>
<tr>
<td>Technical Services Rep (Senior Librarian)</td>
<td>Gov't Publications (Supervising Librarian II)</td>
<td>Gov't Publications (Senior Librarian)</td>
<td>Web Catalog Training Coordinator - Fed Searching and OpenURL (Two Senior Librarians - SIRC &amp; GPS)</td>
<td>Technical Team Student Assistant (ITB)</td>
</tr>
<tr>
<td>Public Services Rep (Supervising Librarian II)</td>
<td>State I&amp;R Center (Supervising Librarian II)</td>
<td>State I&amp;R Center (Senior Librarian)</td>
<td>State I&amp;R Center (Senior Librarian)</td>
<td>State I&amp;R Center (Senior Librarian)</td>
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<td>Law Library (Principal Librarian)</td>
<td>Law Library (Senior Librarian)</td>
<td>Law Library (Senior Librarian)</td>
<td>Law Library (Senior Librarian)</td>
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<td>Info Services Section (Senior Librarian)</td>
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<td>Sutro Library (Senior Librarian)</td>
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<tr>
<td>Support Staff (Two LTA II's)</td>
<td>Support Staff (Two LTA II's)</td>
<td>Support Staff (Two LTA II's)</td>
<td>Support Staff (Two LTA II's)</td>
<td>Support Staff (Two LTA II's)</td>
</tr>
</tbody>
</table>
6.4 **Project Priorities**

CSL executive management have ranked the three major project factors of schedule, scope and resources as follows for this project:

- **Schedule**: Accepted (somewhat flexible to the project circumstances);
- **Scope**: Constrained (the factor cannot be adjusted);
- **Resources**: Improved (the factor can be adjusted).

6.5 **Project Plan**

6.5.1 **Project Scope**

The scope of this project is to replace the existing DRA Classic system (a commercial-off-the-shelf (COTS) integrated library system) with another COTS integrated library system selected via an RFP process. The project must:

- Accurately export, convert and import existing bibliographic, item, patron and other data into the new system;
- Implement all required functions as specified in the functional requirement section of this document;
- Provide sufficient training for technical and program staff to achieve proficiency in the use of the system and to achieve the performance objectives of the project.

6.5.2 **Project Assumptions**

The assumptions for this project are:

- Existing staffing levels for the IT Bureau and professional program staff will remain the same as the FY 06/07 levels throughout the life of the project;
- Work assignments will be adjusted accordingly for all staff;
- Funding will be provided for startup and ongoing costs;
- At least one proposal submitted by integrated library system vendors will meet the project’s functional requirements.

6.5.3 **Project Phasing**

The project is comprised of two phases:

**Phase 1: Procurement phase**

- Development of an RFP;
- Solicitation of proposals (RFP);
• Evaluation of proposals;
• Selection of a primary vendor and contract agreement;
• Procuring of miscellaneous peripheral and network hardware.

**Phase 2: Implementation phase**

• Detailed implementation planning with the primary vendor;
• Development of policy file matrices;
• Server installations;
• Network modifications;
• Client systems installed (PC’s, peripherals and client software);
• Data conversion planning and testing;
• Workflow analysis and procedural changes;
• Documentation;
• Staff preparation and training;
• Operational recovery planning and testing;
• System testing and final data load;
• System startup;
• Problem resolution;
• Acceptance Testing;
• Follow-up training;
• Project close.

The deliverables associated with this project are:

• Hardware;
• Software;
• System Implementation Planning Services;
• Data Conversion and Installation Services;
• Training Services.

The Project Manager will be responsible for approving all deliverables.

### 6.5.4 Roles and Responsibilities

**Project Manager:**

• Coordinate and manage Project Team activities;
• Serves as Risk Manager; monitor, assess, mitigate and escalate risk to the Executive Team as necessary;
• Facilitate communication among members of the Project Team, the Executive Team and the working teams, including informal (verbal, email) and formal project reports;
• Develop and coordinate project schedule details;
• Schedule and lead Project Team meetings;
• Control the change management process and escalate project change requests to the Executive Team as needed;
• Finalize the IT Procurement Plan (ITPP) with DGS;
• Coordinate with DGS on the assignment of a DGS IT Procurement Specialist to the RFP Team;
• Manage contract with ILS vendor;
• Maintain documentation on project progress and decisions made (the project database);
• Maintain the project organization chart;
• Track project budget (develop and maintain cost estimates, actual costs and collect and maintain supporting documentation);
• Develop Special Project Reports as needed;
• Track progress as related to milestones;
• Approve deliverables (hardware, software, implementation services, training services);
• Facilitate and participate in planning for data conversion and system configuration options;
• Oversee data extraction process from existing DRA Classic databases;
• Participate in quality review of data conversion test;
• Oversee tests to ensure the system meets functionality and performance requirements specified in the functional requirements section;
• Ensure the development of in-house documentation;
• Oversee the creation of an operational recovery plan;
• Coordinate Acceptance Testing;
• Close project (collect and archive all project records and record all lessons learned).

Project Team:

• Meet biweekly to monitor project progress, including the progress of the working teams:
  - Technical Team,
  - Data Conversion/Policy Matrices Team,
  - Training Team;
• Monitor the change management process and advise the Project Manager on project change requests, including proposed changes to the project's scope, budget, schedule or organization;
• Advise the Project Monitor on all change requests that should be escalated to the Executive Team;
• Identify project risks, and evaluate risks identified by project teams, throughout the life of the project;
• Collect information on user satisfaction at key milestones;
• Perform Acceptance Testing;
• Close project (collect project records and identify lessons learned).

Executive Sponsor and Executive Team:

• Secure resources and encumber funds;
• Monitor project progress;
• Mitigate risks and resolve issues that have been escalated by Project Manager;
• Resolve change requests that have been escalated by Project Manager.

RFP Team (which includes a DGS IT Procurement specialist):

• Update list of potential vendors;
• Develop and release an RFP for an integrated library system;
• Evaluate draft vendor responses and hold confidential vendor discussions;
• Evaluate vendors’ best and final offers;
• Conduct a public cost opening;
• Validate cost information;
• Issue Intent to Award letters to bidders;
• Report any proposed change in RFP scope, schedule, risk and budget to the Project Team.

Program Lead:

• Lead the Implementation Team;
• Participate as a member of the Project Team;
• Monitor the review and approval process of the data conversion plans and system configuration matrices as developed by the Data Conversion/Policy Matrices Team;
• Summarize the final data conversion and system configuration recommendations for the Project Team;
• Monitor the review and approval process for workflow changes, modifications to procedural documents and mitigate project impacts on staff;
• Ensure that Implementation Team members keep all affected staff informed of project progress, project schedule, and workflow changes;
• Monitor the development and execution of in-house training;
• Assign and provide additional program staff resources to the project as needed and make required workload reassignments;
• Assist Project Manager with Acceptance Testing;
• Monitor progress of the implementation of the new system, log progress and problems with the Project Manager, and recommend changes to the Project Manager;
• Identify and report risks to the Project Manager.
Implementation Team:

- Approve data conversion plans and system configuration matrices as developed by the Data Conversion/Policy Matrices Team;
- Review and incorporate as appropriate “best practices” and “lessons learned” recommended by the Data Conversion, Training and Vendor Teams;
- Approve workflow changes as proposed by the Training Team;
- Approve changes to procedural documents as developed by the Training Team;
- Ensure that program staff is kept informed; lead information meetings with program staff;
- Facilitate the Training Team’s development and execution of in-house training;
- Ensure that any special supplies needed for program staff are on hand prior to implementation;
- Coordinate communications with and services for library users in anticipation of system downtime;
- Review and approve operational procedures for use during system downtime;
- Identify proposed changes to the project scope, budget, or schedule for review by the Project Team.

Technical Lead:

- Lead the Technical Team;
- Participate as a member of the Project Team;
- Assist Project Manager with coordination of all technical aspects of the project;
- Assist with the documentation of technical configurations and procedures;
- Prepare the computer room space for the servers, backup devices and system printer;
- In coordination with vendor team, place and test servers and other equipment;
- Coordinate the installation and testing of client systems and peripherals;
- Coordinate with network and security analysts, CSL’s ISO and DTS to ensure that required network and firewall modifications are made and that they meet State security requirements and industry recommendations;
- Coordinate with vendor team to test communication between clients and servers and between primary server and web server;
- Test server backup and file restoration routines; prepare backup media sets; establish off-site media rotation;
- Assist project manager with data extractions;
- Assist with the documentation of routine technical procedures;
- Assist with the development and documentation of operational recovery procedures;
- Assist Project Manager with Acceptance Testing;
• Monitor progress of the hardware, software, and network components of the new system, log progress and problems with the Project Manager, and recommend changes to the Project Manager;
• Identify and report risks to the Project Manager.

**Technical Team:**

• Receive, inventory and install new client systems and peripherals;
• Install client software on all program staff PC’s;
• Assist with the receipt and inventory of servers and network hardware;
• Assist with the development and documentation of operational recovery procedures.

**Data Conversion/Policy Matrices Lead:**

• Lead the Data Conversion/Policy Matrices Team;
• Participate as a member of the Project Team;
• Facilitate the development of data conversion plans and system configuration matrices;
• Prepare the final data conversion plan and policy matrices for approval by the Implementation Committee;
• Assist Project Manager with Acceptance Testing;
• Monitor progress of the data conversion and policy matrices components of the project, log progress and problems with the Project Manager, and recommend changes to the Project Manager;
• Identify and report risks to the Project Manager.

**Data Conversion/Policy Matrices Team:**

• Gather data conversion and policy matrices “best practices” and “lessons learned” from other libraries that have migrated from DRA Classic to the selected system;
• Develop data conversion plans and system configuration matrices that meet operational needs of the CSL;
• Review vendor tests of data conversions and recommend a conversion plan and policy matrices to the Implementation Team.
Training Lead:

- Lead the Training Team;
- Participate as a member of the Project Team;
- Identify and schedule the "train-the-trainer" workshop for the Training Team;
- Recommend training "best practices" and "lessons learned" from other libraries that have migrated from DRA Classic to the Implementation Team;
- Recommend changes to written workflow procedures to the Implementation Team;
- Present training plan details to the Implementation Team for approval;
- Coordinate all staff training;
- Assist Project Manager with Acceptance Testing;
- Monitor progress of the training components of the project, log progress and problems with the Project Manager, and recommend changes to the Project Manager.

Training Team:

- Gather training "best practices" and "lessons learned" from other libraries that have migrated from DRA Classic to the selected system;
- Explore methods for providing change and/or stress management training for affected staff prior to system implementation;
- Develop expertise in new system's capabilities (processes, workflows, etc);
- Identify changes in workflow processes needed to implement the new system;
- Draft changes to written workflow procedures for review by the Implementation Team;
- Develop application training for program staff;
- Perform application training for program staff before startup;
- Serve as functional leads for specified program areas;
- Perform ongoing training for new and existing staff.

Vendor Project Manager:

- Coordinate with Project Manager to oversee all aspects of vendor activities, including implementation planning, scheduling, communication, technical configurations, equipment preparations, and training;
- Advise CSL on system configuration options;
- Plan and oversee vendor activities related to data conversion; make revisions as needed to ensure converted data can be imported into system in accordance with CSL needs;
- Oversee server preparations, including installation and configuration, and ensure all equipment provided by vendor is received at CSL on schedule;
• Ensure effective training sessions are provided to CSL Training Team members (i.e., the in-house trainers) on all tasks and functions necessary for ongoing system operation and delivery of service to customers;
• In cooperation with the Project Manager, facilitate resolution of problems encountered during all phases of implementation;
• Ensure the completion of all vendor deliverables.

6.5.5 Project Schedule

A more detailed schedule of project activities can be found in the Work Breakdown Structure in Appendix E and in the Project Timeline in Appendix F. The project plan includes the following major milestones:

<table>
<thead>
<tr>
<th>PHASE I</th>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Milestone</strong></td>
<td><strong>Target Week</strong></td>
<td><strong>Target Date</strong></td>
<td></td>
</tr>
<tr>
<td>1 Project funding available for FY 07/08</td>
<td>Week 5</td>
<td>8/1/07</td>
<td></td>
</tr>
<tr>
<td>2 RFP released</td>
<td>Week 10</td>
<td>9/4/07</td>
<td></td>
</tr>
<tr>
<td>3 Costs validated for top-scoring vendor</td>
<td>Week 40</td>
<td>4/4/08</td>
<td></td>
</tr>
<tr>
<td>4 Special Project Report approved by DoF</td>
<td>Week 43</td>
<td>4/25/08</td>
<td></td>
</tr>
<tr>
<td>5 Contract Established for ILS replacement</td>
<td>Week 53</td>
<td>7/1/08</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PHASE II</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Milestone</strong></td>
<td><strong>Target Week</strong></td>
<td><strong>Target Date</strong></td>
<td></td>
</tr>
<tr>
<td>1 Servers installed; Client Software installed; Network changes complete</td>
<td>Week 72</td>
<td>11/14/08</td>
<td></td>
</tr>
<tr>
<td>2 Data conversion testing complete; policy matrices complete</td>
<td>Week 82</td>
<td>1/23/09</td>
<td></td>
</tr>
<tr>
<td>4 Workflow changes documented; initial training completed for all affected staff</td>
<td>Week 91</td>
<td>3/27/09</td>
<td></td>
</tr>
<tr>
<td>5 Implementation Day, all software modules</td>
<td>Week 92</td>
<td>4/3/09</td>
<td></td>
</tr>
<tr>
<td>6 Post-implementation training completed</td>
<td>Week 105</td>
<td>6/30/09</td>
<td></td>
</tr>
</tbody>
</table>

6.6 Project Monitoring

The replacement of an integrated library system is a routine yet complex project performed by many medium and large libraries each year. In fact, since 2001, almost 300 libraries in the U.S. have performed a very similar project, i.e., migrating a DRA Classic integrated library system to a new COTS system.

Because the project utilizes a COTS solution and is limited in scope with no software development or customization required, CSL proposes the use of internal staff for project monitoring. The project monitor responsibilities will be assigned to Jacquelin Siegel, Staff Information Systems Analyst, who will provide oversight of the project. (See resume in Appendix H.)
The project monitor will report findings to the Chief Information Officer and to the Executive Sponsor.

6.7 Project Quality

Because the proposed project will utilize a COTS application that is already in use by many other libraries, CSL’s efforts to ensure quality will focus on three areas: accurate and complete conversion of data files, preparation and training of staff to adapt to the change in system interface and workflow, and minimizing service disruption to customers. Tasks have been incorporated into the project plans to facilitate success in these areas.

6.8 Change Management

The Project Manager will track, facilitate and coordinate all change requests.

The Project Manager will coordinate with the Project Team and the working teams to determine appropriateness and impact of suggested changes to schedule, budget, functionality and program elements.

Change requests that affect project scope or budget by more than 5% will be escalated to the Executive Team, which includes the Project Sponsor and the Chief Information Officer.

6.9 Authorizations Required

No special authorizations are required for this project.
7.0 Risk Analysis

The replacement of an integrated library system is a routine yet complex project that is successfully completed by many medium and large libraries each year. In fact, since 2001, almost 300 libraries in the U.S. have performed a very similar project to this proposed project, i.e., migrating a DRA Classic integrated library system to a new COTS system. Most vendors of COTS integrated library systems have extensive experience with such migrations.

Despite the routine nature of this project, the CSL plans to follow the approach outlined in the State Information Management Manual, SIMM, Section 200, subsection 5.4, “Risk Monitoring Mitigation” to identify, prioritize, document and prepare for project risks.

The Project Manager, Dennis Hagen, will serve as the Risk Manager. As the Risk Manager, he will monitor the iterative risk management process throughout the project:

- Risk identification;
- Risk assessment and prioritization (i.e., risk impact, likelihood, timeframe, exposure and severity);
- Risk reduction and contingency planning;
- Risk tracking, escalation and review.

He will document all identified risks and risk resolution strategies, maintain the Risk Management Worksheets, present a risk status report during the bi-weekly Project Team Meetings, and escalate increases in risk levels to the Executive Team.

The Library’s Information Security Officer (ISO), Curtis Purnell, is involved in all decisions relating to security of ongoing IT operations and implementation of new systems at CSL. He has reviewed security plans relating to the proposed project and has approved system implementation details relating to information security. Upon system installation, information security configuration details relating to all aspects of the proposed project (including application configuration and account permissions, servers, clients, network design, firewall and router configurations) will be subject to the approval of the ISO.

7.1 Risk Management Worksheet

During the feasibility study process, participants identified the risks listed below in the Risk Management Worksheet. All of the listed risks will impact schedule and/or resources; none will impact the scope of the project.

The worksheet will be the base document for project risk management once the project begins.
<table>
<thead>
<tr>
<th>Risk Category/Event</th>
<th>Loss Hours</th>
<th>Probability</th>
<th>Risk Hours</th>
<th>Prev. Risk Hours</th>
<th>Mitigation Measures</th>
<th>Contingency Measures</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>PERSONNEL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Project Manager resigns or becomes impaired.</td>
<td>120</td>
<td>.05</td>
<td>6</td>
<td>38</td>
<td>27</td>
<td></td>
<td></td>
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<tr>
<td>Absence of key Project Team member, other than PM</td>
<td>60</td>
<td>.2</td>
<td>12</td>
<td>3</td>
<td>1</td>
<td></td>
<td></td>
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<tr>
<td>A Training Coordinator leaves</td>
<td>30</td>
<td>.2</td>
<td>6</td>
<td>3, 7</td>
<td>1</td>
<td></td>
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<tr>
<td>High vacancy or absentee rate of program or IT staff during implementation &amp; training</td>
<td>40</td>
<td>.1</td>
<td>4</td>
<td>3</td>
<td>1, 2, 6, 11, 30</td>
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<tr>
<td>Staff resistance to change</td>
<td>20</td>
<td>.1</td>
<td>2</td>
<td>4, 12, 13, 23</td>
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<td></td>
<td></td>
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<tr>
<td>Program staff reassigned to other projects</td>
<td>80</td>
<td>.05</td>
<td>4</td>
<td>3, 9</td>
<td>1, 11</td>
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<td>Problems with existing ILS divert IT staff resources from the project</td>
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<td>.2</td>
<td>16</td>
<td>28</td>
<td></td>
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<tr>
<td>Program staff lack basic Windows computer skills</td>
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<td>.05</td>
<td>4</td>
<td>8, 29, 39</td>
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<tr>
<td>VENDOR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Other vendors protest award</td>
<td>120</td>
<td>.1</td>
<td>12</td>
<td>31, 32</td>
<td>5</td>
<td></td>
<td></td>
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<tr>
<td>Selected vendor will not agree to State of California contract language</td>
<td>80</td>
<td>.3</td>
<td>24</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Vendor acquired by another company</td>
<td>120</td>
<td>.1</td>
<td>12</td>
<td>5, 15</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Vendor unable to schedule start of project as specified in the FSR</td>
<td>5</td>
<td>.4</td>
<td>2</td>
<td>14</td>
<td>5</td>
<td></td>
<td></td>
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<tr>
<td>Vendor cannot provide services according to FSR timeline</td>
<td>5</td>
<td>.1</td>
<td>.5</td>
<td>14</td>
<td>5</td>
<td></td>
<td></td>
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<tr>
<td>PROCUREMENT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-technical third-party tasks take longer than expected (control agency approvals, procurement, equipment purchase, legal review, etc.)</td>
<td>160</td>
<td>.1</td>
<td>16</td>
<td>33</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>None of the responses to the RFP meet the mandatory functional requirements</td>
<td>520</td>
<td>.001</td>
<td>.52</td>
<td>19</td>
<td></td>
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<td></td>
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<tr>
<td>Quotes in response to RFP are greater than estimated costs</td>
<td>160</td>
<td>.01</td>
<td>1.6</td>
<td>17</td>
<td>34</td>
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<td></td>
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<td>EQUIPMENT</td>
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<td></td>
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<tr>
<td>Additional equipment required</td>
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<td>.01</td>
<td>12</td>
<td>19</td>
<td>5, 18, 34</td>
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<tr>
<td>Equipment arrives late or damaged</td>
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<td>.1</td>
<td>16</td>
<td>20</td>
<td>5, 35</td>
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<td>Incompatible hardware components discovered</td>
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<td>5, 36</td>
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<td>NETWORK AND OPERATIONAL RECOVERY</td>
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<td></td>
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<tr>
<td>Backups do not work</td>
<td>8</td>
<td>.1</td>
<td>.8</td>
<td>21, 35</td>
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<td></td>
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<td>System conflicts with firewall</td>
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<td>.1</td>
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<td>37</td>
<td>22</td>
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<tr>
<td>DATA MIGRATION</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Bibliographic data export or conversion problems</td>
<td>80</td>
<td>.1</td>
<td>8</td>
<td>16, 23, 24, 40</td>
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<td></td>
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<tr>
<td>Patron data export or conversion problems</td>
<td>80</td>
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<td>16, 23, 24, 25</td>
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</tr>
<tr>
<td>Item/Holdings data export or conversion problems</td>
<td>120</td>
<td>.1</td>
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<td>16, 23, 24</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acquisition data export or conversion problems</td>
<td>80</td>
<td>.2</td>
<td>16</td>
<td>16, 23, 24</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Problems importing data from outside sources (Marclose, OCLC, etc)</td>
<td>40</td>
<td>.1</td>
<td>4</td>
<td>16, 23, 26</td>
<td>5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Mitigation and Contingency Measures:

1. Reassign other qualified CSL staff to the project.
2. Recruit and hire as a priority.
3. Multiple individuals will participate in important tasks, so critical tasks do not depend entirely on one person.
4. Project Team will openly communicate and document project progress and decisions.
5. Adjust implementation schedule.
6. Do not approve vacations during key project periods.
7. Train more than one person in each system function so that a backup person is available.
8. Send staff to local computer training facility, bring in trainer for class in CSL computer lab, and/or provide access to online training courses.
9. Management reconfirms that project is #1 priority for the library.
10. RFP requirement that vendor must agree to State of California contract language.
11. Reassign non-project tasks or responsibilities to other staff as needed for coverage.
12. Maintain open communications and involve staff with project plans and planning for workflow changes.
13. Provide stress management and/or change management training for project staff.
14. Add flexibility to schedule to absorb delays.
15. Change contract language to reflect new company.
16. RFP requirement that vendor has successfully migrated another DRA Classic library.
17. CSL performed an RFI in Feb. 2006 to identify project cost estimates.
18. Escalate to Executive Sponsor to pursue additional funding.
19. Prior to issuing RFP, review current marketplace to assess what is currently available.
20. Unpack and evaluate condition of equipment immediately upon arrival.
21. Troubleshoot cause of backup failure with software and hardware vendor(s).
22. Contract with DTS to assist with reconfiguring firewall to enable required functionality.
23. Consult with staffs at other libraries that converted from DRA to other systems on any problems they encountered and how they resolved them.
24. Develop a checklist for review of data during the data conversion test.
25. Purge all patron records with longtime inactivity to decrease size of database.
26. Functional requirement that system be able to import data from standard outside sources.
27. Re-assign Program Manager role to John Torkelson, who has performed two integrated library system migrations in the role of Project Manager (see Appendix H for resume).
28. Keep current ILS up to date on all OpenVMS and Multinet patches.
29. Require basic Windows computer skills of all new hires.
30. Clearly communicate all key dates (e.g., training dates, implementation dates, etc.) to all stakeholders.
31. Use DGS expertise to craft an unambiguous and legal RFP.
32. Use DGS expertise to perform a vendor selection process that meets all state procurement guidelines.
33. Deliver project reports, contracts, etc., to oversight agencies as early as possible.
34. Submit a Special Project Report to DoF requesting an adjustment of resources and/or timeline.
35. Repair/replace hardware under terms of warranty.
36. Order additional components.
37. Explore network impacts immediately after vendor selection.
38. Project Manager will maintain detailed logs of all project activities, available to all Project Team members, to ensure a smooth transition if the need arises for a new Project Manager.
39. Each CSL unit has a staff member that serves as a PC user assistant (named the PC Coordinator), who is the first to respond to users' basic PC questions. The PC Coordinator also can provide basic PC training.
40. Functional requirement that system must comply with international standards for bibliographic record structure.
7.2 Risk Tracking and Control

As stated above, the Project Manager will serve as the Risk Manager.

The Project Manager will utilize the Risk Management Form (Appendix E in the SIMM, section 45, Information Technology Project Oversight Framework) to identify and quantify individual risks identified by any project participant. With the assistance of the Project Team, the Project Manager will rank risks and select risk responses (avoidance, acceptance, mitigation and/or risk sharing). He will escalate significant risks to the project’s scope, schedule or resources to the Executive Team for review and advice and report all changes in risk levels to the Executive Team.

The Project Manager will maintain an electronic file of all significant risks. From this file the Project Manager will generate periodic risk reports for the Project Team. The reports will include:

- The top five risk items;
- The number of risk items resolved to date;
- The number of new risk items since the last report;
- The number of risk items unresolved;
- The unresolved risk items that have significant impacts on the achievement of critical milestones.

The Project Monitor, Jacquelin Siegel, also will attend the bi-weekly project status meetings of the Project Team. The Project Monitor will evaluate the progress of the project and submit quarterly Independent Project Oversight Reports, including Risk Management identification and planning.
## EXISTING SYSTEM/BASELINE COST WORKSHEET

*Costs are unrounded dollars.*

**Date Prepared:** 9/20/2006

**Department:** California State Library  
**Project:** ILS Replacement

### Continuing Information

<table>
<thead>
<tr>
<th>Technology Costs</th>
<th>FY 2007/08</th>
<th>FY 2008/09</th>
<th>FY 2009/10</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PYs</strong> Amts</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Staff (salaries &amp; benefits)</td>
<td>1.6</td>
<td>140,234</td>
<td>1.6</td>
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<td>Hardware Lease/Maintenance</td>
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<td>3,060</td>
<td>9,180</td>
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<td>Software Maintenance/Licenses</td>
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<td>41,073</td>
<td>41,073</td>
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<td>Contract Services</td>
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</tr>
<tr>
<td>Data Center Services</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Agency Facilities</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Other</td>
<td>3,551</td>
<td>3,551</td>
<td>3,551</td>
<td>10,652</td>
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<tr>
<td><strong>Total IT Costs</strong></td>
<td>1.6</td>
<td>187,918</td>
<td>1.6</td>
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### Continuing Program Costs:

<table>
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<tr>
<th></th>
<th>FY 2007/08</th>
<th>FY 2008/09</th>
<th>FY 2009/10</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PYs</strong> Amts</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Staff (2)/(3)</td>
<td>21.4</td>
<td>1,165,389</td>
<td>21.4</td>
<td>1,165,389</td>
</tr>
<tr>
<td>Other</td>
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<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td><strong>Total Program Costs</strong></td>
<td>21.4</td>
<td>1,165,389</td>
<td>21.4</td>
<td>1,165,389</td>
</tr>
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</table>

**TOTAL EXISTING SYSTEM COSTS**

<table>
<thead>
<tr>
<th></th>
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<th>FY 2008/09</th>
<th>FY 2009/10</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PYs</strong> Amts</td>
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</tr>
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<td></td>
<td>23.0</td>
<td>1,353,307</td>
<td>23.0</td>
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## PROPOSED ALTERNATIVE: Replacement ILS Hosted at CSL

**Department:** California State Library  
**Project:** ILS Replacement  
**Date Prepared:** 9/20/2006

Costs are unrounded dollars. (1)

<table>
<thead>
<tr>
<th></th>
<th>FY 2007/08</th>
<th>FY 2008/09</th>
<th>FY 2009/10</th>
<th>TOTAL</th>
</tr>
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<tr>
<td></td>
<td>PYs</td>
<td>Amts</td>
<td>PYs</td>
<td>Amts</td>
</tr>
<tr>
<td><strong>One-Time IT Project Costs</strong> (4)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Staff (Salaries &amp; Benefits) (5)</td>
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<tr>
<td>Software Purchase/License</td>
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<td>820,352</td>
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<td>Telecommunications</td>
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<td>Contract Services</td>
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<tr>
<td>Software Customization</td>
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<td>Project Management</td>
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<td>Project Oversight</td>
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<td>IV&amp;V Services</td>
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<tr>
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<tr>
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<td>Contract Services</td>
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<td>Other (7)</td>
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<td><strong>Total One-time IT Costs</strong></td>
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<td>191,568</td>
<td>8.7</td>
<td>1,935,968</td>
</tr>
</tbody>
</table>

| **Continuing IT Project Costs** |     |       |     |       |     |       |     |       |
| Staff (Salaries & Benefits) | 0.0 | 0 | 0.3 | 26,132 | 1.6 | 140,399 | 1.9 | 166,531 |
| Hardware Lease/Maintenance | 0 | 2,400 | 0 | 2,400 | 0 | 0 |
| Software Maintenance/Licenses (8) | 0 | 70,655 | 0 | 139,047 | 0 | 209,702 |
| Telecommunications | 0 | 9,887 | 0 | 9,887 | 0 | 0 |
| Contract Services | 0 | 0 | 0 | 0 | 0 | 0 |
| Data Center Services | 0 | 0 | 0 | 0 | 0 | 0 |
| Agency Facilities | 0 | 0 | 0 | 0 | 0 | 0 |
| Other (7) | 0 | 7,761 | 0 | 7,726 | 0 | 0 |
| **Total Continuing IT Costs** | 0.0 | 0 | 0.3 | 116,800 | 1.6 | 299,459 | 1.9 | 416,259 |

| **Total Project Costs** | 1.5 | 191,568 | 9.0 | 2,052,768 | 1.6 | 299,459 | 12.1 | 2,543,705 |

| **Continuing Existing Costs (9)** |     |       |     |       |     |       |     |       |
| Information Technology Staff | 1.1 | 93,414 | 1.1 | 93,414 | 0.1 | 11,035 | 2.3 | 197,863 |
| Other IT Costs (10) | 47,684 | 47,684 | 47,684 | 25,197 | 119,565 |
| **Total Continuing Existing IT Costs** | 1.1 | 141,098 | 1.1 | 141,098 | 0.1 | 35,232 | 2.3 | 317,428 |
| Program Staff (2) | 21.4 | 1,165,389 | 21.4 | 1,165,389 | 21.4 | 1,165,389 | 64.2 | 3,496,167 |
| Other Program Costs | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Total Continuing Existing Program Costs** | 21.4 | 1,165,389 | 21.4 | 1,165,389 | 21.4 | 1,165,389 | 64.2 | 3,496,167 |

| **Total Continuing Existing Costs** | 22.5 | 1,306,489 | 22.5 | 1,306,489 | 21.5 | 1,200,621 | 66.5 | 3,813,595 |

| **TOTAL ALTERNATIVE COSTS** | 24.0 | 1,498,055 | 31.5 | 3,359,255 | 23.1 | 1,500,080 | 78.6 | 6,357,390 |

| **INCREASED REVENUES** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
**ALTERNATIVE #1:** Replacement ILS Hosted at DTS

**Department:** California State Library  
**Project:** ILS Replacement

**Date Prepared:** 9/20/2006  
**Costs are unrounded dollars. (1)**

<table>
<thead>
<tr>
<th>FY 2007/08</th>
<th>FY 2008/09</th>
<th>FY 2009/10</th>
<th>TOTAL</th>
</tr>
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<tbody>
<tr>
<td>PYS</td>
<td>Amts</td>
<td>PYS</td>
<td>Amts</td>
</tr>
<tr>
<td><strong>One-Time IT Project Costs (4)</strong></td>
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<td></td>
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<tr>
<td>Staff (Salaries &amp; Benefits) (5)</td>
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<td>9.0</td>
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**INCREASED REVENUES** | 0 | 0 | 0 | 0 |
ECONOMIC ANALYSIS SUMMARY  
Date Prepared: 9/20/2006

Costs are unrounded dollars. (1)

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Net (Cost) or Benefit: (1.0) (144,748) (8.5) (2,005,948) (6.4) (192,394) (3.1) (1,958,302) (5.8) (109,952) (4.3) (2,152,486)
## Project Funding Plan

**Department:** California State Library  
**Project:** ILS Replacement  
**Costs are unrounded dollars.**

**Date Prepared:** 9/20/2006

### Total Project Costs

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<th>FY</th>
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<td>PYs Amts</td>
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### Resources to Be Redirected

**Staff**

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<th>2008/09</th>
<th>FY</th>
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<th>TOTALS</th>
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**Funds:**

- **Existing System**
  - FY 2007/08: 0
  - FY 2008/09: 0
  - FY 2009/10: 23,487

- **Other Fund Sources**
  - FY 2007/08: 0
  - FY 2008/09: 0
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**Total Redirected Resources**

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<th>2008/09</th>
<th>FY</th>
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### Additional Project Funding Needed

**One-Time Project Costs**

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**Continuing Project Costs**

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<th>TOTALS</th>
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**Total Additional Project Funds Needed by Fiscal Year**

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**Total Project Funding**

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<th>TOTALS</th>
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**Difference: Funding - Costs**

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# ADJUSTMENTS, SAVINGS AND REVENUES WORKSHEET

(DoF Use Only)

Department: California State Library
Project: ILS Replacement
Date Prepared: 9/20/2006

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<td>0.0</td>
<td>1,368,133</td>
</tr>
</tbody>
</table>

[A, C] Excludes Redirected Resources

**Total Additional Project Funds Needed [B + D]**
0.0 1,606,350

## Annual Savings/Revenue Adjustments

<table>
<thead>
<tr>
<th></th>
<th>FY 2007/08</th>
<th>FY 2008/09</th>
<th>FY 2009/10</th>
<th>Net Adjustments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost Savings</td>
<td>0.0</td>
<td>0</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Increased Program Revenues</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0.0</td>
</tr>
</tbody>
</table>