

**IU Libraries Discovery Layer Implementation Task Force  
Progress Report and Notes & Recommendations for Future**

June 1, 2014

## **Introduction: Intention of Document and Scope**

In May 2013, the primary public interface for IUCAT transitioned to a new discovery layer interface, powered by the open source web application Blacklight. The SirsiDynix Symphony OPAC interface is still available, now branded as IUCAT Classic (<http://classic.iucat.iu.edu/>).

This document reports on progress and makes recommendations for enabling ongoing system-wide input into the development of the catalog discovery interface through the completion of the upcoming OLE migration project, currently expected in late 2015.

Appendices include groups' charges & memberships, and an annotated version of the original selection rubric notating status of product features.

## **New IUCAT: Progress Report and Next Steps**

Development on the new IUCAT began in fall 2011, with a public beta launch in January 2013.

In addition to baseline functionality such as the ability to search using multiple indexes, to print, email or text item information, and patron empowerment functions (renew, request), a number of enhancements have been implemented that significantly improve the patron experience as compared to the legacy SirsiDynix OPAC interface.

These include:

- **Call number browse:** a virtual statewide shelf browse, enabling users to see the two items before and following any LC or SuDOC classed item.
- **Campus views:** separate, individually branded instances of IUCAT for each campus library populated with holdings from that library; users can easily expand their search across the union catalog of all holdings by means of a simple checkbox option.
- **Enhanced and streamlined feedback options for patrons:** patron questions can be routed directly to library staff at each campus; patrons have access to campus libraries Ask A Librarian pages; problem reports and other general feedback are handled at the Bloomington campus so that bug reports can be filed as quickly as possible.
- **Faceted Searching:** Blacklight introduces the use of facets to limit searches like many commercial sites to which users are accustomed; the task force and its component groups spent a great deal of time identifying data issues that impacted accuracy and designing and refining the facets for maximum utility.

- **Improvements in search accuracy:** Blacklight's relevancy ranking algorithms have resulted in noticeable improvements in accuracy of search results, particularly for known item searches.
- **Improvements to request delivery workflow:** users can now initiate both Request Delivery and ALF Request workflows from a single 'Request This' button.
- **More accessible help documentation:** IUCAT Help is now maintained in the UITS Knowledge Base, making it more generally accessible and more regularly reviewed for updates (see <https://new.kb.iu.edu/d/auws#iucat>).
- **My Account:** a streamlined display now allows users to switch between reviewing checked out items, renewing items, and reviewing delivery requests, even for those with multiple accounts (proxy borrowers, faculty study accounts, etc.).
- **Off-campus Access to Electronic Resources:** Users can now authenticate at the point-of-need rather than at the initiation of their search session, and are presented with a menu of campus choices based on the contents of campus libraries' proxy server configuration files. This enables users to access resources from their primary campus regardless of their physical location.
- **User Interface 'modernization':** Inclusion of elements that users have come to expect, including book jacket images where available, 'cite this' functionality, permalink URLs, etc.

## Next Steps

For summer 2014, work on the Blacklight application is focused on migrating forward to the newest version of the software (5.4) from the current version (3.4.1); the most noticeable outcomes of this migration project for the end-user will be

- A new responsive, mobile-ready user interface
- Persistent bookmarks & saved searches for logged-in users

Enhancement priorities for the coming months include:

- **Ebsco Discovery Service (EDS) Results Integration:** for subscribing campuses (currently IUB, IUK, IUSB), enable choice to search catalog data, EDS results, or both simultaneously
- **Extending List Functionality:** enabling personal (private) and shared (public) lists for logged-in users
- **New Titles:** generate new titles lists by filtering catalog data

Throughout the fall semester and in 2015, the LIS development team and many other library staff will increasingly need to direct their efforts toward support of the OLE migration project.

The Discovery and Research Services department will continue communication with the IU Adaptive Technology and Accessibility Center about accessibility of the IUCAT web application.

### **Looking Forward: Notes and Recommendations**

Based on this group's experiences during the first implementation cycle, we offer for your consideration some notes relating to continued systemwide input on discovery layer development.

- Implementation is an intensive process requiring dedicated time commitment over an extended period.
  - We recommend the appointment of a single core working group of approximately five members going forward, and specifically until OLE is implemented as a production system.
  - This core working group will work closely with Blacklight functional team (Discovery & Research Services staff and UITS LIS team) and with OLE migration groups.
  - We suggest that this working group report to the Library Systems Executive Steering Committee<sup>1</sup>.
- Expertise in core functional areas, and ideally, some familiarity with Kuali OLE, will be essential to the next phase of the project focused on preparing the discovery layer to be an overlay for the OLE system.
  - Functional areas include Deliver, Describe, Acquire, and Public Services.
  - Representation from IPFW is desirable due to the unique circumstances relating to authentication, etc.
- For the long-term, it will be important to grow expertise in the details of how the discovery layer integrates with Kuali OLE system-wide.
  - We recommend appointing an advisory committee of 9-12 members. This group would then be available for time-sensitive calls for comments and feedback, and to assist with communications and notifications.
  - Over time, working group members could be recruited from this group.
  - Membership of the advisory committee could be more representative.
- Additional notes & recommendations
  - Classic IUCAT: Improvements to functionality outlined above have resulted in increasing divergence between the level of service we can provide in new IUCAT (e.g., streamlined request workflow) versus what we now provide in IUCAT Classic (e.g., users can no longer email or text record information from the system). IUCAT Classic is a legacy

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<sup>1</sup> This group is comprised of a delegate from CHL, the Associate Dean for Technical Services at IUB, the Associate Dean for Library Academic Services at IUB, the Assistant Dean for Library Technologies at IUB, and the appropriate Director in UITS. Regular updates on LIS progress and maintenance are communicated to the Council of Head Librarians (CHL) by the Library Systems Executive Steering Committee.

system and no further development is planned during the interim period prior to OLE migration.

- The task force suggests that IUCAT Classic transition to being a search-only system for the coming academic year, ideally prior to fall 2014.
- Access to My Account functionality and off-campus access to e-resources would be offered through new IUCAT only.
- User Testing: Conducting user tests of the Blacklight interface was difficult both geographically and logistically. User testing is time-intensive and requires a certain degree of expertise and practice. For results to be useful and actionable, testing must be systematic and consistent. Thus, based on our experiences thus far, it is best undertaken as a specific, ongoing job responsibility of a particular person or persons.
- Given our recommendations above, we propose that all DLITF & DLITF subgroup members be released effective June 30, with the goal of having new groups in place by August 1.
  - The task force suggests that the Data Structures subgroup be reconstituted in the new structure, or that members from that group (or others with equivalent expertise) be appointed to the advisory board.

Respectfully submitted,

Tina Baich, IUPUI  
Gary Charbonneau, IUB  
Rachael Cohen, IUB  
Randy Lent, IUB  
Courtney Greene McDonald, IUB [chair]  
Chris Long, Indianapolis Law  
Sue McFadden, IUE  
Sue Skekloff, IPFW

June 1, 2014

## **Appendix A: Charge of task force, sub-groups, membership**

### **Discovery Layer Implementation Task Force**

Working with the Indiana University Library Information Systems (LIS) Team, the Discovery Layer Implementation Task Force (DLITF) will have the responsibility and authority for the following:

- Guide the LIS Team in decisions that will retain existing functionality and result in improved functionality for Phases 1 & 2 of the discovery layer implementation.
- Employ user-centered design principles, collect data and conduct end-user tests as needed.
- Pursue the recommendations made by the OLE Discovery Layer Task Force in their report.
- Insure that the requirements described in the OLE Discovery Layer Task Force report are met including requirements for changes to authentication and authorization.
- Work with the LIS Team to layout and design screens to meet user expectations and usability standards.
- Assist in collecting data and conduct testing as needed to guide decision making.
- Recommend the creation of sub-groups as well as membership as needed.
- Keep librarians and staff informed of plans and solicit feedback (within strict deadlines) as appropriate.

Tina Baich, IUPUI  
Gary Charbonneau, IUB  
Rachael Cohen, IUB [joined January 2014]  
Randy Lent, IUB  
Courtney Greene McDonald, IUB [chair]  
Chris Long, Indianapolis Law  
Sue McFadden, IUE  
Mary Popp, IUB [retired January 2014]  
Sue Skekloff, IPFW  
Randi Stocker, IUPUI [retired February 2014]

### **Subgroups**

#### **Accounts & Authentication - work completed November 2011**

The IU Libraries OLE Discovery Layer Implementation Task Force concurs with the strong recommendation from the initial Discovery Layer Task force that a sub-group be appointed and charged to develop an action plan for implementation of essential authentication and account management functionality (as defined in the June 1 IU Libraries OLE Discovery Layer Task Force Summary Report & Recommendation, p6).

A primary goal of the project is to create processes that allow users affiliated with multiple campuses to have easy off-campus access to subscription-based resources purchased by each campus, and to quickly access and use services that involve the user's library account, such as renewals, holds and ALF requests, maximizing use of existing data and avoiding multiple logins.

In their work, this group must address the coordination of the various components (University departments & units, current and potential software, user expectations and needs) necessary to launch a successful product serving multiple IU campuses, including Fort Wayne. The overall project timeline requires that recommendations in this area be implemented as part of the alpha release of the discovery interface which is scheduled for fall semester 2011; a report with preliminary recommendations on these issues is to be completed by November 21, 2011.

Gabrielle Carr, IUS [co-chair]  
Chip Dye, IUPUI [co-chair]  
John Eiszner, IUPUI  
Mark Feddersen, IUB  
Kevin Fredrick, IPFW  
Dennis McGreer, IUB  
Sue Skekloff, IPFW  
Randi Stocker, IUPUI  
Charlie Sweet, IUB

#### **Data Structures**

Reporting to the IU Libraries OLE Discovery Layer Implementation Task Force, the Data Structures Group will make and document recommendations for configuration of indexing and record display within Blacklight. This includes but is not limited to search indexes, faceting, the display of bibliographic records and other search and browse displays.

Spencer Anspach, IUB  
Jackie Byrd, IUB [chair]  
James Castrataro, IUB  
Lori Dekydtspotter, IUB Lilly Library  
Chris Long, Indianapolis Law [DLITF liaison]  
Michael Maben, Bloomington Law  
Scott Opasik, IUSB  
Sue Stancu, IUB

#### **User Testing**

Reporting to the IU Libraries OLE Discovery Layer Implementation Task Force, the User Testing Group will oversee the development of testing materials, coordinate and conduct user testing at multiple IU Libraries locations, and make recommendations for changes to the Blacklight user interface based on test results.

Tina Baich, IUPUI [DLITF liaison]  
Lora Baldwin, IUE [co-chair]  
Beth Boatright, IPFW  
Melanie Hughes, IUS

Arena Stevens, IUN  
Christina Sheley, IUB [co-chair]  
Angie Thorpe, IUK

**Training**

Develops staff training plans and materials for the implementation of the Blacklight version of IUCAT.  
This group completed its work in summer 2013.

Michael Courtney, IUB  
Stefanie Davis, IUPUC  
Linda Fisher, IUSB  
Yan He, IUK  
Catherine Lemmer, Indianapolis Law  
Sue McFadden, IUE [DLITF liaison]  
Kate Moore, IUS  
Ann O'Bryan, IUPUI  
Gwen Pershing, IUB  
Mary Popp, IUB [chair]  
Scott Sandberg, IUN  
Richard Vaughn, Bloomington Law  
Carla Williams, IUB



## Appendix B: Progress Report

[Annotated Rubric for Core Functionality drawn from  
IU Libraries Discovery Layer Task Force Summary Report & Recommendation, June 1 2011]

Key:

Completed

Not yet completed

Out of scope for this review

Specification now deemed irrelevant

### A. General Features/Functionality

This section provides required and desired features and functionalities of the overall interface of the discovery layer as well as features and functionalities not easily classified under the other four rubric categories.

The following specifications are **required** for implementation:

- The ability to create indexes within the discovery layer itself, independent of the indexes created and maintained within SirsiDynix. This allows for the assembling of data for any number of custom views.
- The ability to assemble custom views based on one or more descriptors or set of descriptors (location [campus, library, group of libraries], format, etc.).
- The ability to provide persistent, stable access to each custom view individually, or as a group or groups.
- The underlying technology of the discovery layer must be scalable, having the flexibility and capacity to be adapted to future developments and functionality.
- Robust development community which prioritizes collaboration on a shared code base.
- Interface must appeal to users of commercially popular sites like Amazon, Netflix, etc.
- Interface must readily accessible to persons with disabilities, defined as being ADA-compliant and compatible with major screen readers and other commonly used accessibility software.
- Must be Unicode compatible, allowing both search and display of Unicode scripts.
- Must be OpenURL compliant, enabling linking from subscription databases to bibliographic records in OLE IUCAT.
- Must have the ability to integrate non-MARC metadata from local collections (e.g., digital image and text collections and institutional repositories) into its central index. Local collection data in a variety of formats, including TEI, EAD, and DCMI should be able to be searched and ranked with bibliographic MARC records.
- Must have an interface that is optimized for use on various mobile devices.
- Records and searches must have a permanent and stable URL.
- The ability to customize the display of MARC fields for
  - o specific campuses or libraries,

**Comment [1]:** Planned upgrade to Blacklight 5 will address this requirement.

**Comment [2]:** Permalinks rely on ckey information so in cases where batches of records are loaded out and in, that information changes.

**Comment [3]:** Blacklight does allow customization of display of fields, generally.

- o and for bibliographic record views (i.e. having a "simple" and full record view).
- o End-users must have the ability to customize the display of MARC fields for bibliographic records.
- o Librarians must have the ability to determine which fields appear in the various displays.
- Allow the inclusion of other data sources alongside or integrated with catalog results and on bibliographic record display to permit flexibility in implementation from campus to campus. (Hathi Trust, Google Books, WorldCat, etc.)

**Comment [4]:** We can do this but we have not opted to do so in the way stated. That is, we have customized fields based on record type (serial v map) but not in terms of a 'view' per se.

The following specifications are **highly desirable** for implementation:

- Provide campus-specific links to consult with a librarian from that campus via multiple methods (chat, phone, in-person, etc.).
- Users should be able to tag records with their own descriptors. These descriptors would then be searchable by any user through the main interface. The ability for users to comment on, describe, and/or rate resources would also be desirable.

## B. Account Management & Authorization

Many of these functions are highly reliant upon the underlying ILS, and are crucial to maintaining a baseline level of patron services. The Task Force feels that these functions should be first be ported in from SirsiDynix and later provided by the circulation module/functions within OLE, currently to be developed.

Ultimately, public acceptance of the new interface for IUCAT and for the OLE project is dependent upon our ability to integrate with existing local systems used to facilitate identity management, to provide critical patron services related to account management, such as request delivery, holds management, renewals, etc., and to facilitate off-campus access to campus-specific electronic subscription-based resources.

The following specifications are **required** for implementation of the new OLE discovery layer:

- Account management services and access to personal information, such as
  - o request delivery,
  - o holds management,
  - o ALF Requests,
  - o renewals,
  - o materials checked out ("My Account").
- Ability to integrate with technologies enabling single sign on for login to IUCAT services (My Account, tagging, lists, etc) and off-campus access to online resources.
  - o Alignment with University authentication services (e.g., EZProxy, InCommon) to provide these services.
- Secure transfer of personal data.
- Persistent session (ability to authenticate mid-stream without having to recreate search).
- Guest access to search.

**Comment [5]:** ALF requests go directly to ALF system; information about ALF requests doesn't show up in My Account for user until hold placed & trapped in Sirsi.

- Individual patrons may review
  - materials checked out to their accounts (including author, title, due date, recall due date, and status; overdue, claims returned, missing, etc.).
  - materials on which they have placed holds/requests (including author, title, available status, pick up library, and expiration date)
  - current status information for holds/requests through “my account”; requested, in transit, etc.
- Individual patrons may renew all or a selected subset of the materials that are checked out to their accounts and eligible for renewal, with an on-screen confirmation. List should include author, title, and due date.
- Individual patrons have the ability to place a hold/request on an item that they desire, with an on-screen confirmation. They are able to specify the pickup library where the requested item should be sent for pickup and to specify a date after which the item is no longer needed, if desired.
- Individual patrons may cancel all or a selected subset of the materials that they have placed holds/requests on, with an on-screen confirmation.

The following specifications are **highly desirable** for implementation:

- Individual patrons may review current status information for holds/requests on ALF items through “my account” (including author, title, available status, pick up library, and expiration date).
- Individual patrons may indicate (yes/no check box) on holds/requests if the request should be referred to ILL if a copy is not available within the IU System.

Comment [6]: See comment above.

The following specifications are **desirable** for implementation:

- Individual patrons may send a list of checkouts or holds to an email address.

### C. Export & Sharing

The following specifications are **required** for implementation:

- Ability to create multiple lists of resources (both public, shared lists and private lists).
- Data must be formatted such that it can be shared with multiple systems, such as
  - Zotero,
  - other web-based citation services,
  - ILLiad, etc.
- Export records to citation software
  - Endnote, Refworks,
  - & other citation software, etc
- Print/Email/Save function, with ability to select multiple items from multiple points in the search process (bibliographic record, search results screen). Results must be delivered in a user-friendly format (no codes, for example).
- Text call number & item data to major cell phone providers.
- Provide RSS feeds for searches, new titles.

Comment [7]: Cannot export to Mendeley; we have a development ticket open.

Comment [8]: See comment above.

- Generate properly formatted citations for major styles (Chicago, APA, MLA).

The following specifications are **highly desirable** for implementation:

- Share records or lists via common social networking applications (Twitter, Facebook, etc).
- Catalog data made directly available as a web service (API).

The following specifications are **desirable** for implementation:

- Ability to sort lists by different criteria (format, title, author, pub date, subject, etc) and to add user-generated data (tags, descriptions, comments).
- Embed QR codes for each item record.

#### D. Search Functionality & Results Display

##### General Search Functions

The following specifications are **required** for implementation:

- Ability to sort search results by
  - relevancy,
  - call number,
  - date published (descending or ascending),
  - date received,
  - author A-Z or Z-A,
  - or title A-Z or Z-A.
- Search ignores stopwords (a, an, as, at, be, but, by, do, for, if, in, is, it, of, on, the, to) in major languages, but allows them to be searched with use of punctuation.
- Faceted searching, including but not limited to: author, title, subject, format, publication year, publication place, language, genre, library, library location, call number type (LC, NLM, SuDoc, Dewey), time periods (era). Should have the ability to apply multiple facets, to view the selected facets, and to remove the facets on the search results screen.
- Suggests alternate spelling for a search in English ("Did you mean...?").
- Option to revise search on
  - the search results screen,
  - the bibliographic record and
  - the browse result screen.
- Headings (subject and name) are clickable in order to redirect the search from the bibliographic record.
- Allow for truncation replacing more than one character. Must be used at the end of a word but may specify the number of characters to be found.
- Allow for truncation replacing one character, either in the middle or at the end of a word.
- Allow the use of Boolean operators (and, not, or) when constructing a search, and allows them to be searched with use of punctuation.
- Search by call number for a single library.
- Ability to display contextual information (e.g., help) on search results, bibliographic record

**Comment [9]:** Current version of APA is 6th 2nd ed; Blacklight currently formats to APA 5th. Waiting to see if community will include fix in future version.

**Comment [10]:** Reviewing the items below two years into the project, we feel that several of the requirements assume a different search paradigm than how Blacklight works and thus may be less applicable than first thought, or may simply just represent a different conceptual framework that is no longer reflected in how Blacklight indexes and searches.

**Comment [11]:** When initially implemented, new IUCAT ignored stopwords, but we found that it was interfering with accuracy of search. Since then we have not observed that stopwords affect relevancy in a negative way.

**Comment [12]:** Users can include or exclude a term ie +indiana or -purdue; the system does not parse quotes.

and browse result screens.

The following specifications are **highly desirable** for implementation:

- Ability to search within search results from the search results screen.
- Ability to boost the importance of a word by use of punctuation.
- Search History capability with an option to save, edit and re-execute the search.
- Search by call number for more than one library.
- Allow for phrase searching using punctuation (e.g., paired single quotes to enclose a phrase) and inclusion of standard positional search operators (adj, same, with, near) when constructing a search.
- Allow the use of a number with standard positional operators to specify how many words apart the two terms can be.
- Allow for searching within a particular field of a record by using punctuation or field name/code.
- Nest terms by using punctuation such as parentheses ( ). Adding parentheses to a search tells the computer in which order keywords should be searched. Without parentheses, the computer will search the most specific operator first. The sequence from most to least specific is: adj, near, with, same, and, not, or.

**Comment [13]:** IUCAT Help in UITS KB linked as appropriate.

**Comment [14]:** Users can refine search from search results screen.

**Comment [15]:** Users can't save searches, but can re-execute within session or if using link. Users can edit searches once re-executed.

#### Search Screens

The following specifications are **required** for implementation:

- Single search box on screen (with access to advanced search) that performs a keyword search using an index defined by librarians.
- Ability to limit searches to a library, a group of libraries.
- Ability to set default search limits or screens to each regional campus library or professional school.
- Ability to perform searches that can be limited to criteria such as home location, classification scheme, type of medium, format, collection, language.
- Ability to select a field to search including: author, title, LC Subject, Medical Subject, Kinsey Subject, issn, isbn.
- Ability to perform an advanced keyword search where more than one field can be searched.
- Ability for programmers to add additional search boxes, defined by librarians, on advanced search screen in order to show some fields to search (i.e. Kinsey subject headings, medical subject headings).
- Ability to limit searches to a library, a group of libraries, location, format, type of medium (VHS, DVD etc.), collection, or publication year, language, publisher, series subject.
- Ability for patron to add search boxes (and to choose field to search from a drop down menu).

The following specifications are **highly desirable** for implementation:

- Ability to perform searches that can exclude criteria such as home location, classification scheme, type of medium, format, collection, language.

### Browse Search Functions

The following specifications are **required** for implementation:

- Option for browse searching by author, title, periodical title, series, and subject (including LC subject, Medical Subject Headings, Kinsey subject headings) or call number using indexes defined by librarians.
- If the Browse search does not find a match for the word(s) entered, it places you in the alphabetical sequence of entries nearest the place your entry would occur if it were there.
- On the browse screen results, display the number of records associated with that heading
- Clicking on a heading on the browse result screen will result in the search result screen if there is more than one record associated with that heading. These results may be sorted and may be limited by facets.
- Clicking on a heading on the browse result screen will result in the bibliographic record if there is only one record associated with that heading.

The following specifications are **desirable** for implementation:

- See related headings should appear on browse search results.

### Search Results

The following specifications are **required** for implementation:

- Display item format (text, icon, etc.) on the search result screens and the bibliographic record
- Display the item number (3 of 243) and the search terms at the top of the page on the bibliographic record.
- On keyword search results screens, display the number of pages of results, identify the number of the page the user is viewing, and allow users to move to a specific results page.
- Ability to move forward and backward using browser buttons through search result screens, browse result screens (if available) and bibliographic records.
- Ability to request a book and designate pick-up location
  - and to recall an item (for those libraries that provide that service)from the bibliographic record screen.
- ~~Search terms should be highlighted within results for easy scanning.~~
- ~~Ability to display the call number of each item for each location on the search results screen.~~

**Comment [16]:** This is difficult if not impossible to allow within the OPAC/discovery interface in the Sirsi system.

**Comment [17]:** We suspect this will be more practical to do in OLE than in Symphony. In Symphony, the "call number" includes enumeration and chronology data, so a serial with hundreds of volumes may have hundreds of "call numbers". In OLE, there's a base call number in the holdings record -- enumeration and chronology data for individual items is stored in the item record.

The following specifications are **highly desirable** for implementation:

- Recommend materials based on call numbers or other borrower's data on the bibliographic record similar to Amazon.
- Display book jackets on the search result screens and the bibliographic records. If "No image is available" for the book jacket don't have an image on the search results screen or the bibliographic record; this may require pursuing a subscription service that provides this data.
- Ability to browse table of contents or first chapter from

- the search results screen and
- the bibliographic record screen.
- Includes a link to "Return to Search Results" and start a new search on the bibliographic record screen.
- Display similar items in the same call number range on the bibliographic records screens.
- Ability to link an item to a library map or campus map from the bibliographic record.