



**iCONN.org – Connecticut’s re-search engine  
Request for Information**

iCONN.org – Connecticut’s re-search engine  
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### 1. iCONN.org – MAJOR COMPONENTS

- A **federated search system** that simultaneously searches a wide range of heterogeneous information resources on the Web, including:
  - 30+ licensed electronic resources;
  - public domain electronic resources;
  - the statewide library catalog (a physical union catalog); and
  - individual web-accessible library catalogs whose holdings are not contained within the statewide library catalog.
- An **authentication system** described at:  
<http://www.iconn.org/staff/documents/iCONNAAuthenticationUpdated20071015.pdf>
- A “**Change My Library**” function described at:  
<http://www.iconn.org/requesta-z.aspx>
- All services are **Web-accessible**
- All services are **hosted by the vendor**
- Services are **customized**
- Services **conform to the State of Connecticut’s standards for Web accessibility** located at <http://www.access.state.ct.us/policies/accesspolicy40.html>
- Ongoing **technical support** (“help desk”)
- **Training**

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## 2. CURRENT SYSTEM OVERVIEW/BACKGROUND

iCONN.org – Connecticut’s re-search engine is part of the Connecticut Education Network (<http://cen.ct.gov/>). iCONN provides all students, faculty and residents with online access to essential library and information resources. It is administered by the Connecticut State Library in conjunction with the Department of Higher Education. Through iCONN, a core level of information resources, including secured access to licensed databases, is available to every resident in Connecticut. In addition, specialized research information is available to college students and faculty.

iCONN began in 2000 when the Connecticut General Assembly provided funding for the purchase of licensed information databases for Connecticut's libraries, schools and colleges. It was one of several recommendations by then-Lt. Governor M. Jodi Rell in the Fall of 1999. Federated searching – encompassing both the licensed databases and the statewide library catalog (“reQuest”) – was implemented in 2005.

The Goals of iCONN are:

- To ensure universal access to a core level of library and information resources for every resident of Connecticut through their public library, school, college, and from home.
- To help provide necessary information resources to every school in Connecticut so that all students are prepared to function in an information society.
- To provide information resources to the increasing number of students taking advantage of on-line courses at Connecticut's colleges and universities.
- To enhance the quality of teaching, research and education at Connecticut's colleges and universities by supporting online information resources.
- To support the information needs of all Connecticut residents.

(Source: <http://www.iconn.org/AboutIconn.aspx>)

The licensed electronic resources currently accessible through this program (with appropriate authentication) are:

### **Tier I Databases: Available to All Libraries / All Residents**

#### **From Cengage Gale:**

- Academic OneFile
- Business & Company Resource Center
- Educators’ Reference Complete
- Expanded Academic ASAP
- General OneFile
- General Reference Center Gold
- Health & Wellness Resource Center
- InfoTrac Junior Edition

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- InfoTrac Student Edition
- ¡Informe!
- Kids InfoBits
- Legal Trac
- Virtual Reference Collection (18 e-Reference Books)
- What Do I Read Next?

**From EBSCO:**

- History Reference Center
- Science Reference Center
- Student Research Center

**From ProQuest:**

- *Boston Globe*
- *Christian Science Monitor*
- *Hartford Courant*
- *Hartford Courant - Historical*
- *Los Angeles Times*
- *New York Times*
- *Wall Street Journal*
- *Washington Post*

**From AccuWeather:**

- Associated Press Photo Archive

**Tier II Databases: Access Limited to Specific Library Types**

For Public Libraries Only:

**From ProQuest:**

- **HeritageQuest Online**

For K-12 and Public Libraries Only:

**From Thomson Gale:**

- Biography Resource Center
- Biography & Genealogy Master Index
- Discovering Collection

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For Academic Libraries Only:

**From CIS:**

- LexisNexis Academic

**From EBSCO:**

- CINAHL and Pre-CINAHL
- PsycINFO

**From ProQuest:**

- ABI Inform Global

iCONN also provides federated searching of other databases in the public domain as well as library catalogs, such as the reQuest statewide library catalog.

iCONN's **Authorized Users** are defined at:

<http://www.iconn.org/WhoCanAccessDb.aspx>

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### 3. VISION

The iCONN.org – Connecticut’s re-search engine (hereinafter referred to as “iCONN”) is an opportunity to create a search environment for Connecticut residents that extends the reach of the easy-to-use, easy-to-learn "one-stop" information seeking experience (now synonymous with the name "Google") to: iCONN's licensed commercial databases; Connecticut-specific public domain databases inside the "deep web" (e.g., <http://www.cthistoryonline.org> ; the statewide library catalog (and interlibrary loan system); and other library catalogs.

iCONN's federated search engine should present a single set of search results sorted by relevance, and deduplicated, such that users who are inclined to view only the first few results will be more likely to see the most relevant results first. Any user could then choose to re-sort the search results by date, author, title, etc. Achieving this will require that each database vendor provide iCONN with:

- The numerical relevancy score for each search result, and
- The scale that the score is based on.

In turn, the federated search engine would normalize the relevancy scores for all search results to a common scale, then re-sort all results by relevance. Ideally, we would want all of this to happen in real time, but in practice, the screen may have to refresh periodically as different databases respond at different times to the query.

Further, in order to improve overall performance and response time, and in the interest of minimizing duplicate search results, we are asking all database vendors who are supplying multiple databases to implement federated searching with relevance ranking among all the databases they are supplying to iCONN.

Equally important is ease-of-use (usability):

- The system will proactively engage new or novice users so that new users *quickly* become *proficient* users.
- The system will lessen the steepness of the learning/information literacy curve.
- The system will ensure that users spend more time viewing what they find than finding their bearings in the system.
- The system will “interoperate” seamlessly with librarians so that users can obtain help from a reference librarian (expert) at the time of need.

#### 3.1. Implementation

1. Do you have a plan for realizing this vision? Please describe.

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**4. GENERAL REQUIREMENTS.**

**4.1. Use by the Public**

1. First-time users **MUST** be able to use the system to accomplish the following basic functions without assistance:

- Select one or more databases to search
- Use the search engine to successfully find an item of interest

(Examples of online information retrieval systems that the general public can use without assistance are Google and Amazon).

2. The vendor warrants that the system has been subjected to both a heuristic evaluation and usability testing by usability professional with its intended users (general public, librarians, patrons) with the results incorporated into the product, and is therefore free of any usability deficiencies. See [http://www.usabilityprofessionals.org/people\\_pages/consultants\\_directory/](http://www.usabilityprofessionals.org/people_pages/consultants_directory/)
3. The vendor agrees to subject all future upgrades affecting the user interface to usability testing.
4. If the Customer identifies any usability deficiencies with the product, the Vendor **MUST** fix the deficiencies on a timely basis at no expense to the Customer.
  - a) Any of the screens that users interact with will be changed at CSL’s request and at no additional charge in order to improve usability or visual appeal, or to add functionality.

**4.2. Use by Children**

1. The system **MUST** provide an optional graphical/visual user interface with a simple design suitable for use by children (K-6). (For examples of graphical user interfaces, see Gale’s *Kids InfoBits* and also any of the freely accessible resources listed at <http://www.iconn.org/AdditionalResourcesChildrens.aspx#es>)
2. The system **MUST** enable iCONN staff to limit the default database selection in federated searching to only those databases suitable for K-6.

**4.3. Help and Error Messages**

1. The system **MUST** provide a context-driven, keyword-searchable online help facility for all services.

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### 4.4. Message-of-the-Day

1. The system **MUST** provide a Message-of-the-Day (MOTD) function that allows iCONN staff to set the system to automatically present a message to any user going to iconn.org.
2. The system **MUST** enable iCONN staff to tailor the message so that it is visible to any, all or any combination of the following user and library types:
  - a) Guests (access to all non-authenticated resources)
  - b) Patrons
  - c) Staff
  - d) Public library patrons
  - e) School library patrons
  - f) College library patrons

Note: This function is described further in the document at <http://www.iconn.org/staff/documents/iCONNAAuthenticationUpdated20071015.pdf>

3. The system **MUST** enable iCONN staff to:
  - a) Set the start date/time and end date/time of the message
  - b) Set the length of time the message stays on the screen before the system continues automatically to the search screen
4. The system **MUST** provide a continue link that enables the user to go directly to the search screen.

### 4.5. Systems Architecture

1. All services **MUST** be hosted and maintained by the vendor.
2. All services **MUST** be accessible over the World Wide Web.
3. All services **MUST** be accessible from [www.iconn.org](http://www.iconn.org).
4. The system **MUST** not limit the number of authorized users who wish to use the proposed service.

*Note: See usage statistics located at <http://www.iconn.org/Statistics.aspx>*
5. All patron and staff services **MUST** be scheduled to be available 7 x 24 x 365 (excluding unavailability due to major system upgrades)
6. Vendor guarantees that all patron and staff services will be available at least 99.9% of the time they are scheduled to be available. This limits the amount of downtime to no more than 0.7 hours/month or approximately 0.4 days/year.

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7. All services intended for use by patrons **MUST** be accessible over the Web without the requirement for proprietary client software.
8. Patrons **MUST** be able to use the devices they are already comfortable with in order to interact with all patron-related system functions, including:
  - a) PC-compatible computers
  - b) Macintosh computers
  - c) Wireless, mobile, handheld devices, such as the iPhone
9. Staff **MUST** be able to use PC-compatible computers to interact with all staff-related system functions.
10. All services **MUST** support printing of text and graphics.

**4.6. Performance**

Response time is defined as the interval of time between beginning a function (e.g., pressing the enter key) and obtaining results, regardless of time of day.

1. The system **MUST** be able to simultaneously search and return results for all resources within 30 seconds. Current resources are listed in Section 5.1 #2.

**4.7. Load Testing**

1. The vendor **MUST** perform load testing that accurately equates to Connecticut's volume of usage for all new enhancements and system upgrades prior to releasing the upgrades.

**4.8. Disaster Back-Up and Recovery**

1. The vendor has a plan for dealing with a sudden interruption of the services proposed in this RFI.
  - a) The plan includes strategies to resume services (as proposed for this RFI), including service restoration times, the use of alternate facilities (and their distance from the primary facility), the use of mirror sites with immediate "fail over" capability, the ability to quickly re-route all traffic from a primary server to a back-up server with no loss in functionality, and reciprocal arrangements with other companies.

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- b) The plan provides for the replacement of the following services in case of outages, including the use of redundant service providers that do not use the same central switching office, including:
    - i) Telecommunications - data and voice
    - ii) Internet Service Provider
    - iii) Electricity/Power
  - c) The vendor has tested the plan.
- 2. The vendor performs regular backups of customer information.
    - a) The vendor stores the backups offsite
  - 3. The Vendor employs strategies to secure its computer systems.

#### **4.9. Restricting Access To Services**

- 1. Access to staff services **MUST** be limited to participating institution staff and authorized CSL staff.

#### **4.10. Special Access**

- 1. The system **MUST** comply fully with the State of Connecticut’s Universal Web Site Accessibility Policy located at <http://www.access.state.ct.us/policies/accesspolicy40.html>

#### **4.11. Confidentiality of Patron Information**

- 1. The system **MUST** not retain any personally identifiable information pertaining to how individuals use the system. “Personally identifiable information” includes, but is not limited to, name, home address, phone number, fax number, e-mail address, IP address, library card number, and any profiling information supplied to the system. How individuals use the system includes information sought or received, search records and system reports.
  - a) Vendor **MUST** maintain full control over its site to prevent any violation of this policy by a third party
  - b) These guidelines do not prohibit the transfer of personally identifiable information which may be required for authentication purposes (e.g., to use a licensed database product)
- 2. Vendor **MUST** not disclose personally identifiable information pertaining to how individuals use the system to any third party or to any nonparticipating library except as required by law. “Personally identifiable information” includes, but is not limited to,

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name, home address, phone number, fax number, e-mail address, IP address, library card number, and any profiling information supplied to the system. How individuals use the system includes information sought or received, search records and system reports.

- a) Vendor **MUST** maintain full control over its site to prevent any violation of this policy by a third party

**4.12. Ownership of Customer Information**

- 1. Vendor agrees that all files supplied by CSL or by participating libraries utilized to perform the services defined in this RFI, including profiling information, and any information used for authentication purposes, such as IP addresses and library card numbers, are the property of the Customer.

**4.13. Technical Support (“Help Desk”) and Customer Communications.**

- 1. The vendor **MUST** provide technical support capable of diagnosing and resolving all technical problems in relation to these services.
- 2. The vendor **MUST** proactively test on an ongoing basis to verify that all databases, including the reQest union catalog, that are available for federated searching are actually able to return search results.
  - a) The testing **MUST** be done at the beginning and end of the technical support staff work day, and at least hourly between those times.
  - b) There **MUST** be no cascading failures: a failure in one or more databases should not affect the performance of the federated search beyond the lack of results from the failed database(s).
- 3. The federated search vendor **MUST** proactively test to verify that all databases that are available for federated searching return search results that are consistent with the search results that would be returned if the same searches had been performed using the database vendor’s native search interface.
  - a) Each database **MUST** be tested at least once daily
- 4. The vendor **MUST** provide technical support Monday through Friday, 7:00 AM ET to 9:00 PM ET.
- 5. The vendor **MUST** provide escalated response based on the severity if the problem. For example:
  - a) Severity 1 (system unavailable) receives a response from the vendor within 15 minutes

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- b) Severity 2 (system seriously impaired) receives a response from the vendor within 15 minutes during business hours and within 30 minutes during non-business hours
6. iCONN and library staff **MUST** be able to contact technical support using any of the following methods:
- a) Telephone (using a toll-free number)
  - b) Fax
  - c) E-mail - a specific address (e.g., help@vendor.com) will be assigned for this purpose

#### **4.13.1. Service Outage Notifications**

1. The vendor **MUST** notify CSL in the event of any unplanned outage affecting one or more vendor-supplied iCONN services that occurs during iCONN office hours (Monday – Friday, 7:00 AM ET – 4:30 PM ET). This notification will occur within one hour of when the vendor detects the outage. CSL will provide vendor with emergency phone contacts for outages that occur outside office hours.
  - a) The vendor is responsible for monitoring their system.
  - b) The vendor **MUST** notify iCONN of the approximate time for service to resume as soon as this information is known.
2. Any scheduled maintenance and system updating that affects the performance or availability of patron and staff services **MUST** be performed between Midnight ET and 6:00 AM ET on Sunday.
  - a) The vendor **MUST** provide advance notice of the length of time that service will be interrupted.

#### **4.14. Training**

1. The vendor **MUST** provide complete hands-on training on all services proposed.
  - a) The vendor **MUST** train CSL staff and, if requested by CSL, a third party to whom CSL will subcontract all initial training.
  - b) If requested by CSL, the vendor **MUST** provide training for an average of three staff members per current participating institution
  - c) All training will take place in Connecticut.
2. Training will be provided on an ongoing basis as needed.
3. What other options do you provide for training, such as webinars and online tutorials?

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**4.15. Vendor Experience**

1. Have you successfully developed, implemented, hosted and maintained a system as described in this RFI? Can you supply a list of clients?

## 5. Functional Requirements

### 5.1. Defining, Displaying and Selecting Information Resources

1. The federated search engine **MUST** be able to simultaneously search and retrieve records from any user-defined selection of information resources, including but not limited to library catalogs, commercial full-text databases and other Web-based resources, derived from a comprehensive list of resources presented by the federated search engine.
2. The resources which can be simultaneously searched **MUST** include:
  - a) Library catalogs, including:
    - i) reQuest – the statewide library catalog
    - ii) any other Web-accessible library catalog (which may or may not support Z39.50)
  - b) Licensed databases as described in Section 2  
*Note: See usage statistics at <http://www.iconn.org/Statistics.aspx>*
  - c) Any databases not listed in (b) above that are licensed by a patron’s home library and that can be configured for federated searching
3. The system **MUST** be able to display the direct link to each information resource so that any user can choose to search any resource using that resource’s native search engine in lieu of the federated search engine.
4. The system **MUST** not limit the total number of individual resources that can be searched simultaneously.
5. iCONN staff **MUST** be able to add, remove and determine the arrangement and naming of resources from the list of resources presented by the federated search engine.
  - a) This customization will be performed by the vendor at iCONN’s direction, or
  - b) The vendor will provide the means for non-technical iCONN staff to perform the customization.
6. The vendor is responsible for performing the following systems administration tasks:
  - a) Enabling all libraries to have full access to all iCONN resources they are authorized to access
  - b) Maintaining the directories of direct links by library type for all licensed iCONN resources, including:
    - i) Links authenticated by the federated search vendor
    - ii) Links authenticated by the database vendor
  - c) Maintaining the IP address file (including proxy servers) for all libraries

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- d) Testing access to new databases for all library types prior to making access available to libraries
7. The system **MUST** enable a user to elect to see only elementary school, or only middle school, or only high school resources - yet still be able to “toggle switch” to the next higher level - or elect to see “all” resources.
8. iCONN **MUST** be able to profile the default selection of resources and services for at least 20 distinct categories of users.

### **5.2. Searching and Displaying Results**

1. iCONN **MUST** provide search functionality useful to both novice and expert users.
2. iCONN **MUST** allow for keyword searching of one or more terms simultaneously.
3. iCONN **MUST** allow for phrase searching.
4. iCONN **MUST** allow users to navigate among retrieved records.
5. iCONN **MUST** allow users to modify a search, e.g., if results yield too many hits or not enough hits or to correct a misspelling.
6. iCONN **MUST** allow users to refine a search using faceted browsing.
7. iCONN **MUST** ignore variations in punctuation and use of upper and lower case letters when searching.
8. iCONN **MUST** suggest alternate spellings of search terms when no search results are returned.
9. iCONN **MUST** allow for these Boolean operators:
  - a) AND
  - b) OR
  - c) NOT
10. The Boolean operator “AND” **MUST** be the implied default when more than one search term is entered in a field.
11. Federated search results for magazine/journal and newspaper databases **MUST** contain:
  - a) Article title
  - b) Publication Title
  - c) Full date (month/year for journals, month/day/year for newspapers)

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- d) Author (if available)
  - e) Starting page # (if available)
  - f) Word count or # pages (if available)
12. The federated search engine **MUST** be able to query resources using Z39.50 and HTTP in accordance with what the target resource can support.
- a) The system bypasses any individual target resource that fails to respond within a pre-determined period of time.
    - i) iCONN staff can specify the period of time
13. The vendor is responsible for maintaining the continuity of service and making the required adjustments in system configuration as changes occur in target system profiles, and as target systems are upgraded.
- a) The vendor **MUST** proactively test all target systems on a daily basis and correct problems as they are identified
14. The vendor **MUST** warrant that the federated search engine has been configured to produce search results from each target resource that are the same results that would be produced if the same search were entered into the vendor’s native search engine.
- a) The vendor **MUST** proactively test federated search results on a daily basis to detect and correct any variations from baseline search results
15. The system **MUST** allow users to limit search results to full-text materials
- a) This does not apply to library catalog search results
  - b) It **MUST** be possible to set this limiter as the system default
  - c) It **MUST** be possible for the user to remove this limit for specific searches
16. Search results **MUST** be labeled as to the type of material – book, article, full-text, abstract, citation, etc.

### **5.3. Additional Functionality**

- 1. The vendor **MUST** provide a search box as depicted at <http://rqst-agent.auto-graphics.com/homepages/customerwide/IConnSearchBox.asp>
- 2. The vendor **MUST** provide an “iCONN On Your Desktop” function as shown at <http://www.iconn.org/iconndesktop.aspx>
- 3. The system **MUST** provide seamless access to a statewide virtual reference service from every page.
- 4. The system **MUST** be able to provide authenticated access to the E-Journal Finder (see <http://www.iconn.org/staff/ejournals.aspx>).

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**6. Authentication Services for Connecticut Users**

1. The vendor **MUST** perform all the authentication services documented at:
  - <http://www.iconn.org/staff/documents/iCONNAuthenticationUpdated20071015.pdf>  
(see attached document)
  - <http://www.iconn.org/requesta-z.aspx>
2. The authentication services **MUST** be performed both for iCONN’s licensed resources as well as for any locally licensed resources that individual libraries choose to include in the federated search engine.
3. The vendor **MUST** provide a “Remember my card number on this computer” checkbox on the initial iCONN login screen which, when checked by the user, causes the system to place an authenticated barcode cookie on the user’s computer.
  - a) The cookie **MUST** be recognized by the authentication system so that the user does not have to re-enter the library card number on subsequent logins.
  - b) The cookie **MUST** not have an expiration date.
  - c) When the authentication system detects the authentication cookie, the user **MUST** be prompted with "Your library card number ends with [barcode displays with all asterisks except the last 4 digits]," and the user **MUST** be able to select a begin button that will place the user in their correct iCONN environment, or the user can select an option to login as another user by returning to the initial login screen. If the user logs in as another user, the prior cookie **MUST** be removed unless the user selects "Remember my card number on this computer," which will write a new cookie to the user's machine.
  - d) There **MUST** be mouseover explanatory text that displays when moving the cursor over the “i” icon next to the checkbox function on the barcode login screen (as depicted at iconn.org).