

Proposal submitted by OCLC Online
Computer Library Center, Inc.

Response to:

Request for Candidates for the Registration Authority
for ISO 21047 on the International Standard Text
Code.

February 20, 2004

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Executive Summary

OCLC Online Computer Library Center, Inc.(OCLC) is pleased to respond to the ISO Technical Committee 46 Subcommittee 9 N372 Request for Candidates for the Registration Authority for ISO 21047 on the International Standard Text Code (ISTC). OCLC has a long history of developing, implementing and supporting information identifiers and international standards. OCLC is an excellent candidate for this role.

OCLC is a nonprofit, membership computer library service and research organization whose public purpose is furthering access to the world's information and reducing library costs. OCLC is in a unique position to fulfill the role of the ISTC International Agency as a neutral, non-partisan organization, with over 30 years of experience in working with libraries, publishers, book jobbers, booksellers and other organizations collaboratively around the globe. OCLC has experience working with publishers through our Electronic Collections Online service, which offers e-journals, and our netLibrary division, which offers e-book.

OCLC products and services are developed to meet the ISO 9001:2000 standard. The Quality Management System of OCLC Online Computer Library Center, Inc., Dublin, Ohio USA has been certified by Lloyd's Register Quality Assurance (LRQA) to meet the ISO 9001:2000 standard. OCLC was originally certified on June 18, 1998. OCLC conforms to additional ISO standards, including as

- ISO 2709 MARC 21
- ISO ILL 10160/10161
- ISO 15836:2003 Dublin Core Metadata Set
- ISO 23950 Information Retrieval (Z39.50)

OCLC commits to implementing and operating the ISTC International Agency for a minimum period of five years per ISO requirements. OCLC agrees to meet the criteria to be a Registration Authority as set forth in the ISTC Request for Candidate, Section *B.3 Qualifications*, listed as follows:

- It is a legal entity
- It enjoys a sound financial structure
- It has sufficient equipment resources and communications facilities
- It has employees who are technically competent in the relevant subject of the standard at issue
- It shall require no financial contribution from ISO or its members
- It is committed to serving as an RA or MA for a minimum of five years
- It is internationally acceptable and able to carry out its functions as a registration authority in a non-partisan manner

As per ISO requirements, OCLC will be able to begin performing the functions of the Registration Authority on or before December 1, 2004.

OCLC proposes a structure with itself as the Registration Authority (heretofore referred to as the ISTC International Agency). OCLC will recruit international collecting agencies, national libraries, government agencies, author servicing agencies and publisher servicing organizations to act as registration agencies.

OCLC's business model for the ISTC International Agency includes two suggested pricing models for registration agencies:

- For larger agencies, an annual participation fee with a per ISTC cost
- For agencies serving registrants requiring five ISTC's or less, a small per registrant fee with a per ISTC cost

The participation fee model is designed for organizations that expect to assign a large volume of ISTC's on behalf of creators and an unlimited number of registrants.

The registrant fee based model is designed for organizations that have a large number of members who would be likely candidates for individually registering small volumes of ISTC's, such as authors, literary agents or small publishers.

Agencies will set their own price for ISTC identifiers for their markets. It is OCLC's intention that this arrangement will encourage agencies to heavily market ISTC with the prospect of benefiting from a small margin on each identifier or registrant. The ISTC International Agency will adjust these models to meet the ISO requirement for cost recovery as stated in the Request for Candidate document.

In some markets, national libraries or government agencies may wish to offer ISTC identifiers to their constituents. It is OCLC's intention to offer these organizations the opportunity to become registration agencies under either registration agency pricing model. OCLC has established relationships with many national libraries around the globe, allowing us to quickly position ISTC as an internationally accepted identifier through this channel.

OCLC proposes to offer retrospective conversion of manifestation level databases to work level databases with ISTC identifiers assigned. The service will be offered to all registration agencies, national libraries, publishers, and other organizations. This service provides a unique opportunity for organizations to implement relationship links between their manifestation identifiers and the ISTC work identifier. Adoption of ISTC identifiers and their association with manifestation identifiers at this authoritative, public and accessible level encourages rapid recognition of the identifier as an international standard. OCLC is in a unique position to offer this service given our experience in research and implementation of the Functional Requirements of Bibliographic Records (FRBR) model and OCLC WorldCat. Additional information on OCLC's work with FRBR is available at <http://www.oclc.org/research/projects/frbr/default.htm>

OCLC has designed, developed and tested the ISTC Global Registration System (ISTC GRS). The system is fully operational and ready to fulfill the requirements of ISO. ISTC GRS is a Web-based system for registration agencies and their users to submit ISTC metadata, request assignment of an ISTC and provide access to all ISTC's. This system is based on the ISTC standard 21047 and on requirements from potential ISTC registration agencies (Authors Registry, Authors Licensing and Collecting Society (ALCS), Accesscopyright (formerly CANCOPY), Bowker and Nielsen). OCLC and the potential ISTC registration agencies tested the system. ISTC GRS supports a wide range of ISTC registration agencies in terms of size, technical expertise and experience with managing textual entities. OCLC will deploy this system to support ISTC and the ISTC registration agencies.

Overview of OCLC Online Computer Library Center, Inc.

Headquartered in Dublin, Ohio, OCLC Online Computer Library Center is a nonprofit organization that provides computer-based cataloging, reference, resource sharing and preservation services to more than 45,000 libraries in 84 countries and territories. OCLC was founded in 1967 to improve access to the world's information and reduce library costs, and conducts ongoing research to develop technologies to support that mission.

Together, libraries and OCLC have built WorldCat, the world's largest database of bibliographic information. More information about OCLC is available at www.oclc.org.

Registration Authority Qualifications

TC 46 N 1556 "ISO/TC 46 Procedures for the Work" defines ISO's directives concerning registration authorities. OCLC meets the qualifications of a registration agency:

- It is a legal entity
 - OCLC will run the ISTC International Agency from its offices in Dublin, Ohio USA. OCLC has been incorporated since July 6, 1967 as a nonprofit organization.
- It enjoys a sound financial structure
 - The OCLC Annual Report 2002/2003, may be accessed online at <http://www.oclc.org/news/publications/annualreports/2003/tothemembership.htm>
 - Audited financial statements may be accessed online at <http://www.oclc.org/news/publications/financial/default.htm>
 - OCLC maintains a Dun & Bradstreet rating of 5A1 (DUN Number 06-358-7745).
 - Standard & Poor's Ratings Services assigned a rating of "A" to the last OCLC revenue bond financing
- It has sufficient equipment resources and communications facilities
 - In fiscal 2003, OCLC invested in the future through major capital expenditures, which totaled \$28.2 million. Major projects included the new WorldCat technological platform, new user support systems and replacement of current infrastructure and computer technology that support its existing library services.
 - OCLC maintains WorldCat, a database of over 54 million bibliographic records available to libraries 24 hours a day, 7 days a week, 365 days per year. Our computer-based cataloging, reference, resource sharing and preservation services are used by more than 45,000 libraries in 84 countries and territories.
 - Total research and development expenditures for fiscal 2003 were \$14 million dollars. Over the last five years, OCLC has spent \$69.5 million dollars on research and development
 - OCLC has spent over \$600,000 participating in the development of the ISTC standard and in developing and testing the ISTC Global Registration System to date.
- It has employees who are technically competent in the relevant subject of the standard at issue

- A team of OCLC employees has been involved in the development of the standard and the development of the Global ISTC System at OCLC for over three years.
- It shall require no financial contribution from ISO or its members
 - The revenue generated from the proposed pricing model is expected to cover the costs of operations.
- It is committed to serving as an Registration Authority for a minimum of five years
 - OCLC is committed to serving as the ISTC Registration Authority for a minimum of five years.
- It is internationally acceptable and able to carry out its functions as an Registration Authority in a non-partisan manner
 - OCLC's nonprofit status and cooperative culture gives it a unique qualification to act in a non-partisan manner while carrying out the duties of the ISTC International Agency. From its very beginning, OCLC has been a collaborative organization built on the principles of cooperation. OCLC is an international organization with distributors throughout the world.

OCLC Experience with Identifiers and Standards

Strategically, OCLC is committed to promoting and encouraging the use of information identifiers and the development of standards to further access to the world's information. Our work as the registration authority for the ISTC International Agency will facilitate the exchange of information about works between authors, agents, publishers, retailers, libraries, rights administrators and other interested parties.

OCLC is the steward of OCLC WorldCat, the largest bibliographic database in the world. This database continues to be built cooperatively by libraries from around the world and is based on standards.

OCLC publishes the Dewey Decimal Classification, the most widely used library classification system in the world.

2003 marked the 25th year of OCLC Research, an important resource for member libraries and the wider information community. In addition to our work with ISTC, OCLC staff is involved in the following information identifier and standards development projects:

- Function Requirements for Bibliographic Records (FRBR)
- Dublin Core Metadata Initiative (DCMI) Registry
- OpenURL Registry
- Open Archives Initiative
- PURL (Persistent Uniform Resource Locator)
- U.S. government working group on Identifiers
- Web Service and SRW (Search and Retrieve on the Web)
- Z39.50
- A complete list of identifier and standards work efforts is in Appendix D
- See <http://www.oclc.org/research/> for details on OCLC Research projects

ISTC and other information identifier projects require involvement, cooperation, and collaboration of many organizations. OCLC as the ISTC International Agency will establish both an advisory council and a governing council for ISTC which includes representatives from ISTC Registration Agencies, the various communities of ISTC users and the ISO.

OCLC has exceptional experience as a collaborative organization. The OCLC Members Council assists the OCLC Board of Trustees and management in the continued development of OCLC as a worldwide, world-class, library cooperative. There are 60 Members Council delegates (and six international transitional delegates) who are elected by and represent the OCLC member libraries in their respective regions.

OCLC Resources

OCLC is a nonprofit, membership computer library service and research organization whose public purpose is furthering access to the world's information and reducing library costs. In support of these purposes, OCLC strives to maintain a strong financial base by operating in a business-like manner while utilizing a conservative, non-aggressive accounting philosophy in order to accommodate growth, upgrade technological platforms, conduct research and development and still subsidize worthwhile projects for the benefit of libraries and their users.

The OCLC Annual Report 2002/2003, may be accessed online at <http://www.oclc.org/news/publications/annualreports/2003/tothemembership.htm>

Audited financial statements may be accessed online at <http://www.oclc.org/news/publications/financial/default.htm>

In fiscal 2003, OCLC revenues were \$191.8 million.

Total research and development expenditures for fiscal 2003 were \$14 million dollars. Over the last five years OCLC has spent \$69.5 million dollars on research and development.

As an international organization, total membership in the OCLC cooperative at year end 2003, was over 45,000 libraries in 84 countries. The OCLC cooperative includes 9,000 libraries outside the U.S. in 83 countries.

OCLC manages the world's largest database of bibliographic data. Many OCLC employees are specifically involved in various information identifier work and development of standards. A team of individuals within the Cataloging and Metadata Service division has specific knowledge pertaining to the development of ISTC.

The ISTC Global Registration Server is housed in OCLC's state-of-the-art computer center, which provides the necessary resources for 24x7 computer operations. These resources include:

- Redundant telecommunication links to the internet
- Redundant commercial power lines
- Diesel backup power supply

OCLC has the necessary experience and resources to serve in the role of registration authority for ISO 21047. As a nonprofit, membership organization, OCLC has established and continues to promote

collaboration among its members. It is our belief that this emphasis on collaboration will enable us to carry out the duties of the registration authority internationally and in a non-partisan manner. OCLC looks forward to the opportunity to work with the ISO on this important project.

Detailed Response

ISTC Business Model

OCLC proposes a business model based on cooperation between the ISTC International Agency and registration agencies. Registration agencies will be recruited and appointed from a pool of organizations currently involved in the publishing supply chain (creators, publishers, distributors, national libraries). OCLC's business model for the ISTC International Agency includes two suggested pricing models for registration agencies:

- For larger agencies, an annual participation fee with a per ISTC cost
- For agencies serving registrants requiring five ISTC's or less, a small per registrant fee with a per ISTC cost

The participation fee model is designed for organizations that expect to assign a large volume of ISTC's on behalf of creators. There will be an annual participation fee of \$10,000 plus a per ISTC fee of \$0.50 for large organizations (estimated to be more than 6,000 ISTC's per year). For small organizations (estimated to be less than 6,000 ISTC's per year), the participation fee will be \$5,000 annually, plus \$0.50 per ISTC.

An alternative model is a registrant fee based model designed for organizations that have a large number of members, each needing a small volume of ISTC's. In these organizations the members would individually register small volumes of ISTC's. These registration agencies will pay \$10 per registrant to the ISTC International Agency and \$0.50 per ISTC issued. Each registrant is expected to be a real entity with a need for less than 10 ISTC's per year.

The ISTC International Agency will adjust pricing up or down to meet the ISO requirement for cost recovery as stated in the Request for Candidate document.

OCLC views the agency network as a group of autonomous businesses with the responsibility of promoting and selling ISTC identifiers to their respective market segments. The agency network may be based on market segment, geographic sector, or some type of logical grouping based on existing organizations. This decision will be market-driven.

Potential agencies include:

- Publishers
- Publisher service agencies
- National libraries
- Collecting societies
- Copyright agencies
- Author groups
- Other interested parties

The benefits to these organizations of becoming an ISTC registration agency include:

- The opportunity to participate and influence an internationally accepted standard identifier system
- The potential to build products and services based on the metadata collected by the agency and access to the collective data of the ISTC central database

Registration agencies can redistribute ISTC identifiers in a manner best suited to their constituency (in bulk quantities or one at a time). The cost of an ISTC to publishers or authors will be at the discretion of the registration agency.

The ISTC International Agency will develop a marketing plan to recruit registration agencies and to promote the ISTC identifier.

Additional Revenue Opportunities

Retrospective Conversion Services

The ISTC International Agency will offer retrospective conversion services to national libraries to convert their national bibliographies from manifestation level to work level databases with ISTC identifiers assigned to each work record. OCLC will utilize its FRBR algorithm, developed by OCLC Research, in this practical implementation of the FRBR model and ISTC identifiers.

Registration agencies will be encouraged to promote and market similar retrospective conversion services to customers in their markets. These services will be priced on a case-by-case basis, and will supplement the revenue from ISTC registration, thus helping to keep the costs of ISTC identifiers lower than might otherwise be possible.

ISTC International Agency Structure

The ISTC International Agency will be managed by OCLC staff with ISTC knowledge. Additional support staff will be matrixed in from other areas as needed. The responsibilities of OCLC ISTC staff will be:

- Overall management of strategic and day-to-day operations of ISTC International Agency functions
- Marketing and promotion of the ISTC standard to national libraries, candidate registration agencies, publishers, authors, and interested parties. Registration agencies will share in this responsibility
- Development and maintenance of the agency network and related policies
- Selection of and consulting with the ISTC governing council as specified in the RFC
- Acting as liaison with ISO and other standards groups
- ISTC customer and user support.
- Development of ISTC documentation and training materials
- Development and implementation of marketing and promotional plans and activities in conjunction with registration agencies
- Collection of registration agency fees
- Technical support for the ISTC Global Registration System

OCLC has designed, developed and tested the ISTC Global Registration System. This Web-based system is deployed at OCLC's computer center in Dublin, Ohio. A description of the system is provided later in this document.

ISTC International Agency Start-up and Five-Year Objectives

OCLC will begin to recruit registration agencies world-wide immediately upon selection as the ISTC International Agency. It is our goal to recruit six registration agencies in the first year, with additional agencies each year. The ISTC International Agency will fill the role of the default registration agency until additional agencies are recruited.

An ISTC User Manual and ISTC Technical Manual will be created and used by new agencies immediately. These manuals will include recommended policies, procedures and system use instructions. Final policies and procedures will be in place after the first meeting of the Governing Council. The Governing Council is described in the ISTC Registration Authority Governance section of this document.

ISTC Financial Plan

ISTC Registration Authority - Financial Projection

In U.S. dollars (thousands)	Start-Up					
	FY05	FY 06	FY 07	FY 08	FY 09	FY 10
Registration Agency Participation Fee (large agencies)	\$10	\$50	\$60	\$60	\$60	\$60
Registration Agency Participation Fee (small agencies)	5	25	50	60	65	75
ISTC fees (books)	15	33	36	40	44	48
ISTC fees (articles)	0	50	100	150	200	250
Registrant fees	11	24	26	28	30	32
Revenue	\$41	\$182	\$272	\$338	\$399	\$465
Costs & Expenses						
Direct Costs & Expenses	308	280	287	234	244	251
Contribution Before General & Administrative Expenses as a % of revenue	(\$267)	(\$98)	(\$15)	\$104	\$155	\$214
				30.8%	38.9%	46.0%
Cash Flow	(\$201)	(\$31)	\$52	\$85	\$164	\$222

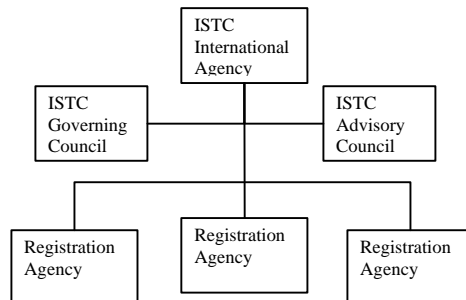
Assumptions

- ISTC International Agency staff will consist of 2.0 FTE's in the first year and 1.6 FTE's in succeeding years
- The ISTC financial projections are presented on a fiscal year ending June 30th, which is consistent with OCLC's fiscal year.
- Through January 2004, OCLC has incurred over \$600,000 in costs for development of the ISTC standard and in the development and testing of the ISTC Global Registration System. Other than depreciation expense from capitalized software and hardware, the costs incurred to date are not reflected in the financial projections above.

ISTC Registration Authority Policies and Procedures

Following is an overview of OCLC's vision on the ISTC International Agency governance structure. Detailed policies and procedures will be developed with assistance from the ISTC Governing Council, Advisory Council and registration agencies.

OCLC envisions that in addition to the registration authority and the registration agencies, there will be an ISTC Advisory Council and an ISTC Governing Council.



ISTC International Agency

The ISTC International Agency will be staffed and run by OCLC staff as noted in the previous section.

The ISTC Advisory Council

The ISTC Advisory Council will include representatives from organizations such as ISO, NISO, IFLA, ISSN, ISBN, EDItEUR, ISAN, ISRC, and ISWC to advise the ISTC International Agency on:

- Ensuring the interoperability of ISTC with other information identifiers and standards
- Providing a broad picture of the industry, the market and technology direction
- Providing additional perspectives on the importance of identifiers and information retrieval

OCLC envisions the ISTC Advisory Council meeting semi-annually. Meeting locations may be at industry conferences or at delegate offices, or meetings may be held via teleconference.

Delegates will be invited to participate by the ISTC International Agency with recommendations from the ISTC Governing Council. It is the intention of the ISTC International Agency to appoint members from different regions of the world. Delegates will be expected to cover their own costs of attending these meetings.

The ISTC Governing Council

OCLC proposes the creation of an ISTC Governing Council. The Governing Council will be a policy advisory group for the purpose of drafting and agreeing on the set of by-laws, procedures

and regulations under which ISTC identifiers will be assigned, maintained, and used. Advisory roles will include:

- Agency Appointment
- Dispute Resolution
- Agency Evaluation
- Budget and Pricing Recommendations

The ISTC Governing Council will include representatives from the ISTC registration agencies, national libraries or government agencies acting as member registration agencies, standards agencies, and OCLC.

During the first 24 months of operation, each registration agency member will have one delegate to the Governing Council. As more registration agencies are added, it will be necessary to limit the number to a manageable amount, to be determined at the second meeting of the executive board.

The ISTC Governing Council will elect from its members an executive board consisting of five members. OCLC envisions the structure of the board as follows:

- OCLC will always hold a seat on the executive board
- One member will be elected to represent publisher related registration agencies
- One member will be elected to represent author related registration agencies
- One member will be elected from a national library
- One member will be elected at large

Board members will serve two year, staggered terms, with the exception of OCLC, which will always have a seat.

Governing Council delegates will meet twice a year. Meeting locations may be at industry conferences or at delegate offices, or meetings may be held via teleconference.

Decisions of the council and the executive board will be made on a majority basis.

ISTC Registration Policies and Procedures

OCLC will draft an ISTC User Manual and ISTC Technical manual to establish an initial set of policies, procedures and instructions. These manuals will be reviewed and revised based on agreement with the ISTC Governing Council. As registration agencies are appointed and become part of the governing council, policies and procedures will be reviewed and amended as required. The following are what we consider to be the critical policies and procedures to begin implementation.

Policies and Procedures: Agency Appointment

In order to evaluate potential registration agencies the registration authority will develop:

- Agency selection criteria
- Agency business requirements
- Agency technical requirements
- Agency Application form

- Published evaluation criteria

The appointment of a registration agency will result in a contract between the ISTC International Agency and the registration agency. The contract will ensure the agencies:

- Compliance with the ISO 21047
- Compliance with ISO terms for a registration agency
- Compliance with the ISTC International Agency's terms

Policies and Procedures: ISTC Data Access

All registration agencies may search the ISTC Global Registration System database through a standard Web browser as part of their registration agency fees. Each registration agency has full access to the data that they enter into the system, with read only access to the remainder of the database. The International ISTC Agency has full access and use rights for the entire database.

Policies and Procedures: Monitoring Registration Agency Activities

Each registration agency will be required to submit an annual report to the ISTC International Agency at the end of each fiscal year. The report will detail the activities of the agency for the past year, and its goals for the next year. These reports, in addition to OCLC's activities will be used to prepare OCLC's annual report to ISO.

The ISTC International Agency has the right to audit each agency's activities should the need arise in an effort to ensure compliance of all parties with ISO 21047 and the policies and regulations of the ISTC International Agency.

Policies and Procedures: Review and resolution of duplicate applications for, or registration of textual works

The ISTC Global Registration System will assist in the resolution of duplicate applications for an ISTC by providing registrants the opportunity to see "like" registered works prior to completing the ISTC registration process. A full description of the registration process and resolution logic is provided in the ISTC System Description section of this document. Additionally, the ISTC User Guide will describe the characteristics of a new work, what constitutes a new work and what to do if the work is already registered.

Policies and Procedures: Dispute Resolution

The ISTC draft standard specifies two areas in which the registration authority will provide dispute resolution:

- Duplicate application for an ISTC
- Accuracy of the ISTC metadata

The ISTC International Agency will encourage registration agencies to resolve disputes first between themselves using guidelines provided in the ISTC User Guide. Additional details for this policy and associated procedures will be developed with the ISTC Governing Council.

ISTC Marketing and Promotion Plan

The ISTC International Agency will develop a marketing plan to recruit agencies and educate the market on the value of the ISTC identifier. Highlights of the plan follow.

An educational campaign will commence upon selection of OCLC as the ISTC International Agency. The campaign will target potential agencies and ISTC consumers including authors, publishers and libraries. Registration agencies will be expected to market and promote ISTC as appropriate for their market.

Marketing tactics will include:

- Development of a Web page targeted to potential agencies
- Potential agencies will be targeted with an email campaign leading potential agencies to a Web landing page offering additional information and a self nomination form
- OCLC will send staff to selected conferences to demonstrate and present the ISTC to potential agencies and to ISTC consumers

ISTC Registration System Description

In 2002 and 2003, OCLC designed, developed and tested the ISTC Global Registration System (ISTC GRS) which is a Web-based system for registration agencies and their users to submit ISTC metadata, request assignment of an ISTC and provide access to all ISTC's. This system is based on the ISTC standard 21047 and on requirements from potential ISTC Registration Agencies (Authors Registry, Authors Licensing and Collecting Society (ALCS), Accesscopyright (formerly CANCOPY), Bowker and Nielsen). OCLC and the potential ISTC registration agencies tested the system in 2002. ISTC GRS supports a wide range of ISTC registration agencies in terms of size, technical expertise and experience with managing textual entities. OCLC will deploy this system to support ISTC and the ISTC registration agencies.

Functional Requirements

ISTC GRS was designed to meet the functional requirements of the ISTC standard to:

- Identify the registrant of an ISTC; with the registrant being the individual or organization registering the work
- Assign unique identifiers to unique textual entities
- Collect the prescribed set of metadata associated with each ISTC
- Track and monitor registrant maintenance activities including requests for new ISTC's, changes to existing ISTC metadata and deletion of an ISTC

ISTC GRS assigns a unique identifier to a unique textual entity based on the following statements found in the ISO ISTC standard:

A.1.3 The same ISTC shall not be allocated to more than one textual work.

A.1.4 The same textual work shall not be allocated more than one ISTC."

ISTC GRS provides registrants with the ability to submit the prescribed set of metadata associated with each ISTC as found in Annex D of the ISO 21047 ISTC standard. Additional

data elements are collected by the ISTC Global Registration System in order to manage the registration process.

The rules that govern who can register the unique identifier are found in the ISO ISTC standard:

“**A.1.1** An ISTC shall be allocated to a textual work by an ISTC Registration Agency upon request from an author or other person responsible for the creation of that work (a “responsible person”), or from any person explicitly acknowledged by the responsible person as his/her authorized representative. Where reasonable investigation has not located and could not locate a responsible person or an authorized representative of a responsible person, any person may request an ISTC.”

ISTC GRS relies on the Registration Agency and their registrants to ensure that ISTC identifiers are assigned appropriately based on the creators request or knowledge that an ISTC will be assigned. The ISTC User guide will provide the registration agency with guidelines on how this can be accomplished.

Technical Requirements

The technical requirements placed on each registration agency by the standard include:

- Ability to assign a unique identifier to each textual entity in the format specified in the standard
- Ability to store the ISTC metadata prescribed in the standard
- 24 x 7 availability of ISTC identifiers and ISTC metadata to all other registration agencies

In order to meet these requirements, ISTC GRS maintains a centralized database. ISTC GRS allows each registration agency to search all ISTC metadata prior to assigning an ISTC in order to determine if the textual entity they are registering is indeed unique or if it has already received an ISTC. ISTC GRS uses a resolution algorithm to handle this function. The resolution algorithm is configurable and is a function of the ISTC Global Registration system, which is designed to be operational 24 hours a day, 7 days a week.

This proposal is based on all registration agencies using the centralized system. No hardware or application software is required to be located at the registration agency, other than a PC with an Internet connection, a Web browser and a Web presence.

Functions of ISTC GRS

The following provides the reader with an overview of how ISTC GRS works from the perspective of the registrant and registration agency.

As previously described, ISTC GRS maintains a centralized database. While this is one database, each registration agency’s data is maintained in a separate, virtual database. This approach provides the benefits of a one central database and maintains the data security and separation necessary for handling input from multiple registration agencies. The primary functions ISTC GRS provides are:

- Searching and browsing ISTC metadata

- Registering new textual entities
- Changing ISTC metadata registered by the registration agency or their constituents
- Requesting changes to ISTC metadata registered by other registration agencies
- Managing profiles for registration agency registrants (staff, publishers and authors)
- Viewing, printing or extracting statistics on ISTC registrations and related ISTC events (searches, browses, edits, etc.)

Searching and browsing is initiated through the Web screen. The user may search and browse all or selected registration agency databases. The search function allows the user to enter a text string and select a specific index (title, creator, registrant, or creation date). The system will find and display all records matching the entered text string. The browse function allows the user to select an index (title, contributor and creation date), a starting character and search the specified index for all records beginning with the selected character.

Registering new textual entities can be done by authorized and authenticated registrants either one at a time or as a batch of requests for multiple ISTC's. For one at a time ISTC requests, the registrant uses a web browser to logon to ISTC GRS and enter the ISTC normative metadata. ISTC GRS uses a resolution algorithm to ensure the submitted metadata will result in a unique ISTC. If there are already ISTC's assigned with metadata which is similar to what is being submitted, the system will provide the registrant with a view of each of those ISTC's metadata. The registrant can then decide if an ISTC already exists for the work or if this is a unique work that requires a new ISTC. In addition to the system resolution algorithm, the ISTC User manual developed by the ISTC International Agency and registration agencies will provide guidelines on what constitutes a new work.

For registration agencies that may need to request multiple ISTC's at a time, the system provides for batch registration functions which allow for the uploading of an XML data file. The data file contains the ISTC normative metadata for each work to be registered. The uploaded file is processed and the results of the process are available to the registration agency online for review.

Occasionally, a registrant may need to change the metadata associated with a registered ISTC. The system allows the registrant to add additional titles or creators to the metadata. Other changes will be governed by the ISTC User Manual. The system provides configurable controls which allow or disallow the registrant to make changes. ISTC GRS provides system wide controls that allow registrants to change only data within their registration agency. Changes to other registration agency's metadata are done through the ISTC GRS change request functions.

The ISTC GRS change request function provides registrants a method within the system to communicate change requests to other registration agencies. If, for example, a registrant finds an ISTC with metadata they believe is incorrect or incomplete, there is the ability for a registrant to request a change from another registration agency through the system. Each agency will have access to pending change requests (their to-do list) and will have access to change requests they've submitted to other agencies (their change request list).

The system allows for each registration agency to have as many registrants as needed. Each registrant within a registration agency can be profiled to have access to specific functions within the system. Registrants may be staff of the agency, publishers or authors.

The system provides for online viewing and printing of reports, which help the registration agency track and monitor the ISTC's that have been registered within their agency and who is registering works.

ISTC Resolution Algorithm

The ISTC resolution algorithm is used when a registrant submits metadata to register an ISTC. As explained above, the ISTC normative metadata is submitted and the system performs the resolution algorithm to determine if the work has previously been registered and assigned an ISTC. The algorithm uses the concept of progressively loosening the search criteria in order to find possible matches or determine that no matches exist and a new ISTC should be assigned. In the instance that possible matches are found, human intervention will make the final determination of whether or not a new ISTC is needed. The human intervention will be guided by both the system in its display of the possible matches and by the ISTC User Guide in its guidelines for assigning ISTC's to works. The following describes the matching algorithm used within the ISTC GRS system:

1. Stop words are removed from the submitted title and contributor metadata.
2. The *title* and *contributor* indexes are searched to get the list of matching works. Only those works with a relevance score that meets a certain thresholds are retrieved. In this case, all specified title keywords have to match and the contributor's last name should have an exact match.
 - a. If a match or matches are found the system will display the list of matching works for the registrant to make the final determination
 - b. If no match is found, the search criteria is broadened and another search of the database executed
3. Next an "inexact" search is performed on the *title* and *contributor* indexes. Retrieving only those items with a relevance score that meets a certain threshold. In this case, one or more of the title keywords have to match and part of the contributor's last name must match (e.g., John will match Johnson, Johnathan, etc.).
 - a. If a match or matches are found the system will display the list of matching works for the registrant to make the final determination
 - b. If no match is found, the search criteria is broadened and another search of the database executed
4. Next an "inexact" search on the *title* index only. Retrieve only those items with a relevance score that meets a certain threshold. In this case, one or more of the title keywords have to match – however, currently due to a higher threshold value on the relevance score, only titles with at least two matching words are retrieved. This was done to minimize the number of results on resolution.
 - a. If a match or matches are found the system will display the list of matching works for the registrant to make the final determination
 - b. If no match is found then a new ISTC is assigned.

"Inexact" search retrieves records for which one or more title keywords match with results ranked according to the density of the words in a given title. Resolution rules are described using XSL (an XML-based language) and are easily configurable.

Appendices

Appendix A 7. Responsibilities of the Registration Authority for ISO 21047

The following itemized requirements for the Responsibilities of the Registration Authority are as listed in the Request for Candidate document. In order to facilitate review and evaluation of OCLC's proposal, click on the electronic link labeled "response" to go to the relevant portion of the document.

The organization that is selected as the Registration Authority for ISO 21047 must agree to perform the following functions in fulfilling its responsibilities for the effective implementation and maintenance of ISO 21047.

- a) To implement a registration procedure for the assignment of unique ISTC in accordance with ISO 21047; [response](#)
- b) To appoint appropriate organizations as ISTC registration agencies and to revoke such appointments as necessary in order to ensure compliance with the specifications of ISO 21047; [response](#)
- c) To establish a governing body for the ISTC system to assist the Registration Authority in matters of policy and governance and in the resolution of appeals or conflicting ISTC assignments. [response](#)

NOTE - The governing body for the ISTC system is expected to include members with full voting rights to represent the interests of the ISTC registration agencies and should also include representation from international and/or regional organizations representing major users of the ISTC and the ISO.

- d) To establish system-wide policies, procedures and specifications for ISTC registration agencies on matters such as the capture, maintenance and availability of ISTC registration data; [response](#)
- e) To allocate unique registration agency elements for use within the ISTC syntax and to maintain accurate registers of assigned registration agency elements; [response](#)
- f) To ensure the maintenance of accurate registers of assigned ISTC and the associated ISTC metadata and administrative metadata, either in a central database or through an authorized network of distributed databases among designated ISTC agencies; ; [response](#)
- g) To develop, implement, monitor and enforce policies and procedures governing the operations of ISTC registration agencies and the process of ISTC registration by those agencies, including any fees associated with that process; response to [policy and procedures](#) and [registration agency fees](#)
- h) To develop, implement, monitor and enforce policies and procedures regarding access to the ISTC registers maintained by the ISTC registration agencies; [response](#)

- i) To facilitate the review and resolution of duplicate applications for or registration of textual works; [response](#)
- j) To review and decide on appeals of decisions made by ISTC registration agencies, as necessary, in such matters as the rejection of ISTC applications and disputes concerning the accuracy of ISTC metadata; [response](#)
- k) To promote, co-ordinate and supervise the ISTC system in compliance with the specifications of ISO 21047; [response](#)
- l) To develop documentation for users of the ISTC system; [response](#)
- m) To report annually on its activities as the ISTC Registration Authority to the ISO technical body responsible for the ISO 21047 standard. [response](#)

Appendix B 8. Required qualifications of the Registration Authority for ISO 21047

The following itemized requirements for the qualifications of the Registration Authority are as listed in the Request for Candidate. In order to facilitate review and evaluation of OCLC's proposal, click on the electronic link labeled "response" to go to the relevant portion of the document.

- 8.1 The organization must be a legal entity. [response](#)
- 8.2 The organization must have a sound financial structure. [response](#)
- 8.3 The organization must have technically competent staff and sufficient resources, including financial resources, information technology and communications facilities, to establish and provide ongoing support for the work of the ISTC Registration Authority. [response](#)
- 8.4 The organization must not require financial contributions from ISO or ISO's member bodies. [response](#)
- 8.5.1 The organization must commit to serving as the Registration Authority for a minimum period of five years. [response](#)
- 8.6 The organization must be internationally acceptable and must agree to carry out its functions as Registration Authority in a non-partisan manner. [response](#)
- 8.7 The organization must have the ability to oversee the design, establishment and maintenance of an international registration system for textual works and associated metadata as specified in ISO 21047. [response](#)
- 8.8 The organization must have the ability to establish and coordinate a network of ISTC registration agencies that may be appointed on a sectoral, geographic or language basis. [response](#)
- 8.9 The organization must be familiar with the needs and perspectives of potential user communities for the ISTC (e.g. organizations involved in the administration of rights to textual works; organizations involved in managing the supply chain for products and other uses of textual works) and must have the ability to work with relevant sectors of the content industry at the international level. [response](#)
- 8.10 The organization must have a credible plan for the development of the ISTC system during its start-up phase and first five years of operation. [response](#) and [financial plan](#)
- 8.11 The organization must have the ability to promote and market the use of ISTC to relevant user communities in accordance with the specifications of ISO 21047. [response](#)

Appendix C 9. Responses to this Request for Candidates must include:

In order to facilitate review and evaluation of OCLC's proposal, click on the electronic link labeled "response" to go to the relevant portion of the document.

- 9.1 A statement of the candidate organization's willingness to be the Registration Authority for ISO 21047 and to perform the functions described in Annex A of the standard (see attached copy of Committee Draft 21047) for a minimum period of five years. [response](#)
- 9.2 A description of the relevant skills, expertise, and resources of the candidate organization for performing those functions. [response](#)
- 9.3.1 A description of the legal status of the candidate organization, including a statement as to whether the candidate organization is incorporated and, if so, where. [response](#)
- 9.4 A description of the candidate organization's involvement and relevant experience in the areas of information identification and database management. [response](#)
- 9.5 A description of the financial, human, communications and information technology resources that the organization will be able to provide for the work of the Registration Authority. [response](#) and [financial plan](#)
- 9.6 A description of the organizational and administrative framework that the organization proposes to establish for the ISTC Registration Authority and ISTC registration system, including the nature and composition of the administrative structure that will establish the policies and regulate the operations of the ISTC system. [response](#)
- 9.7 A description of the organization's plans for start-up of the ISTC system and the objectives for its first five years of operation, including its objectives concerning the establishment of ISTC registration agencies. [response](#)
- 9.8 A description of how the candidate organization plans to handle the creation and maintenance of the ISTC register and its underlying information technology in such a ISO/TC 46/SC 9 N 372 2004-01-05 way as to ensure that each ISTC is assigned to only textual work and each textual work is assigned only one ISTC. [response](#)
- 9.9 A description of how the candidate organization plans to handle the registration and maintenance of associated metadata for each ISTC assignment, as specified in ISO 21047 (see Annex D of the attached Committee Draft 21047). [response](#)
- 9.10 A description of any mechanism(s) the organization intends to deploy for resolving an ISTC to other content, and particularly to metadata about the ISTC registration itself. [response](#)
- 9.11 A description of the organization's proposed business model for supporting the establishment and ongoing operations of the ISTC system, including the position and role of ISTC registration agencies within that business model. [response](#)

- 9.12 A description of the nature of any anticipated fees or other service charges related to the process of ISTC registration or for access to the essential registration metadata for a specific ISTC. [response](#)
- 9.13 A description of the promotional activities and training support that the organization will undertake to ensure proper implementation and use of the ISTC standard. [response](#)

Appendix D Standards Participation by OCLC

[Open Archives Initiative](#)

- Lorcan Dempsey, OCLC, OAI Steering Committee member.
- Jeffrey Young, OCLC, OAI Technical Committee member
- The Open Archives Initiative develops and promotes interoperability standards that aim to facilitate the efficient dissemination of content.

[Dublin Core Metadata Initiative \(DCMI\)](#)

- Lorcan Dempsey, Board of Trustees
- Stu Weibel, Advisory Board
- Eric Childress, Advisory Board
- Harry Wagner, Advisory Board
- The Dublin Core Metadata Initiative is an open forum engaged in the development of interoperable online metadata standards that support a broad range of purposes and business models.

[NISO Standards Committee AX](#), Open URL

- Phil Norman, OCLC, Committee member.
- Open URL will create Web-transportable packages of metadata and/or identifiers about an information object.

[ISO 23950](#): “Information Retrieval (Z39.50): Application Service Definition and Protocol Specification”, and to ANSI/NISO Z39.50.

- Ralph LeVan, OCLC, ZIG member
- The standard specifies a client/server-based protocol for searching and retrieving information from remote databases.

[NISO Standards Committee AV](#), Developing a U.S. National Z39.50 Profile for Library Applications

- Dana Deitz, OCLC, Committee member
- Developing profiles for bibliographic search and retrieval from library catalogs and the transfer of bibliographic holdings information

[NISO Standards Committee AT](#) Circulation Interchange Protocol (NCIP) (ANSI/NISO Z39.83-200x)

- Pat Stevens, OCLC, Committee Chair
- Tony O’Brien, OCLC, Committee member
- This standard will define the various transactions needed to support circulation activities among independent library systems.

[NISO Standards Committee AZ](#) Networked Reference Services

- Michael Teets, OCLC, Protocol Committee Chair
- Jeff Penka, OCLC, Committee member
- Digital reference services constitute a new but rapidly growing extension of the traditional reference service offered to library patrons. This committee will explore the standards necessary to advance the rapidly growing online library service.

ISOILL - [ISO 10160](#) and [ISO 10161](#) Standard for Open Systems Interconnection— Interlibrary Loan Application Protocol Specification

- Collette Mak, OCLC, committee member
- Craig Wright, OCLC, committee member

[ILL Protocol Implementers Group](#) (IPIG)

- Craig Wright, OCLC, member

[ISO 639 Joint Advisory Committee](#)

- Glenn Patton, OCLC, member
- The committee advises the Registration Authorities for ISO 639-1 (used widely in the Internet world) and ISO 639-2 (used widely in libraries) on the addition of new language codes.

[ISO TC46/SC4/WG9 - Conceptual Reference Model for the Interchange of Cultural Heritage Information](#)

- Janifer Gatenby, OCLC Pica, member

[Permanent UNIMARC Committee](#)

- Jay Weitz, OCLC, vice-chair
- This committee is the maintenance agency for the UNIMARC format, widely used in library automation in Europe.

[IFLA Section on Cataloguing](#)

- Glenn Patton, OCLC, member and member of the committee's ISBD Review Group
- This group develops and maintains a variety of international cataloging standards that form the basis of cataloging practice around the world.

[IFLA FRBR Review Group](#)

- Thom Hickey, Ed O'Neill, and Glenn Patton. OCLC, members of the Review Group and of several of its Working Groups.

[U. S. MARC Advisory Committee](#)

- Richard Greene, OCLC, liaison

[Open eBook Forum](#)

- Lynn Connaway, netLibrary, member of NISO, member of Open eBook Forum "Metadata and Identifiers Working Group"
- Stu Weibel, OCLC, Open eBooks Forum "Publication Structure Working Group"
- The OeBF is an "international trade and standards organization consisting of hardware and software companies, publishers, authors, users of electronic books, and related organizations whose common goals are to establish specifications and standards for electronic publishing."

[Unicode Consortium](#), Associate Member

- Gary Smith, OCLC representative
- Maintenance agency for the Unicode Standard and liaison to ISO/IEC/JTC 1/SC2/WG2, which is responsible for ISO/IEC 10646.

[Program for Cooperative Cataloging](#)

- Glenn Patton, [Policy Committee & Steering Committee](#)
- Cynthia Whitacre, [BIBCO](#) Operations Committee
- Robert Bremer, [CONSER](#) Operations Committee
- Susan Westberg, [NACO](#) Liaison
- Robert Bremer, [Standing Committee on Automation](#)
- Jay Weitz, [Standing Committee on Standards](#)
- Glenn Patton, [Standing Committee on Training](#)

[MARBI](#) – ALA Machine-Readable Bibliographic Information

- Rich Greene

[ALA ALCTS Committee on Cataloging: Description and Access](#)

- Glenn Patton

[BISAC - Book Industry Standards And Communications](#)

- Bob Pearson, OCLC, Book Industry Standards And Communications

Appendix E Comments and Exceptions

In response to Attachment B: Draft contractual agreement between ISO and the future Registration Authority for ISO 21047 (ISTC), OCLC understands this draft agreement to represent the nature of the agreement that would need to be finalized if OCLC is selected. Upon review of this agreement by OCLC's legal advisor OCLC would request the following section of that agreement to be altered as indicated below.

ISO 21047 REGISTRATION AUTHORITY AGREEMENT DRAFT

1. **Section 7.3** Upon termination of the Agreement, *[insert name of appointed organization]* shall turn over to ISO all ISTC registry data including the registered ISTCs, associated normative ISTC metadata and registrant data. OCLC will retain ownership of ISTC's and ISTC metadata added to OCLC databases including but not limited to OCLC WorldCat. OCLC will also retain ownership to the ISTC Global Registration System and any other software developed in support of the ISTC registry.

Appendix F Scope of Offer

ISO Technical Committee
20040213:01

Scope of Offer

This proposal constitutes an offer to the ISO Technical Committee TC 46 (ISO TC 46).

This offer is provided by OCLC Online Computer Library Center, Inc. ("OCLC") in response to the ISO Technical Committee 46 Subcommittee 9 N 372 Request for Candidates for Registration Authority for ISO 21047 on the International Standard Text Code (ISTC).

This proposal shall be governed by the conditions of the ISO 21047 Registration Authority Agreement (with modifications noted by OCLC in its proposal).

If all of the terms contained in this tender are acceptable to ISO, please have an authorized representative accept this proposal in writing. The terms of this proposal will remain in effect until June 30, 2004, inclusive. Any acceptance is expressly limited to the terms of this offer, and OCLC objects to any additional terms in such acceptance, though we would consider such terms during negotiations.

If representatives of ISO wish to discuss the modification of the terms, or the introduction of additional terms, OCLC is willing to negotiate. Before any legally binding commitments are made, however, OCLC and ISO will work out mutually acceptable contracts.

To the best of OCLC's knowledge, no undisclosed conflict of interest between ISO and any of its employees will be caused by OCLC entering into negotiations with ISO.

Although OCLC may have responded to the sections of the RFC dealing with specification requirements as requested, these responses are for ISO's evaluation purposes only. OCLC's proposal assumes that ISO and OCLC shall mutually develop and agree to final project specifications consisting of the RFC specifications to the extent those specifications are acceptable to OCLC and any other specifications or adjustments to the specifications required by ISO or OCLC.

OCLC's offer is contingent upon the resultant contract being accepted by a legally competent and financially responsible entity acceptable to OCLC. OCLC reserves the right to correct any errors or omissions in its proposal at any time.