

Institutional Identification: Identifying Organizations in the Information Supply Chain

*A Recommended Practice of the
National Information Standards Organization*

Prepared by the
Institutional Identifiers Working Group

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Institutional Identification: Identifying Organizations in the Information Supply Chain

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Contents

Section 1: Introduction	1
1.1 Background	1
1.2 Community Needs Assessment	1
1.3 Requirements for the I ²	2
1.3.1 Requirements for the Identifier Standard	3
1.3.2 Use Case Scenario Development	4
1.3.3 Requirements for the Core Metadata Set	4
1.3.4 I ² Operational Environment Requirements	8
1.4 Candidate I ² Identifier Standards	8
1.5 Collaboration with ISNI International Authority	9
1.5.1 Background on the International Standard Name Identifier (ISNI)	9
1.5.2 Evaluation of ISNI for Institution Identification	10
1.5.3 Discussions with ISNI-IA	11
Section 2: Institutional Identification Recommended Practices	12
2.1 Purpose of Institutional Identification	12
2.2 Scope	12
2.3 Terms and Definitions	12
2.4 Requirements for the Operational Environment	13
2.5 ISNI Metadata Applied to Institutional Identification	14
Appendix A: Use Case Scenarios	15
Appendix B: NISO I² Metadata Element Set Mapped to ISNI Metadata Elements	23
Bibliography	24

Foreword

About this Recommended Practice

The National Information Standards Organization (NISO) established the Institutional Identifier (I²) Working Group in January 2008 to develop a robust, scalable, and interoperable standard for identifying a core entity in any information management or sharing transaction—the institution. The I² Working Group did extensive community needs assessment with the publishing, library, and repository use sectors.

Concurrent with this Working Group's efforts, the International Organization for Standardization (ISO) was developing a standard for a “name” identifier for public parties “involved throughout the media content industries in the creation, production, management, and content distribution chains.” After reviewing the drafts of that standard (later published in March 2012 as ISO 27729, *Information and documentation – International standard name identifier (ISNI)*), the I² Working Group initiated discussions with the ISNI International Agency (ISNI-IA) about the potential of using the ISNI standard and the ISNI-IA's infrastructure for institutional identification, rather than publishing a separate standard for institutions.

Those discussions resulted in an agreement to use ISNI for institution identification. This document provides background on that collaboration decision and describes the recommended practices for using the ISNI for institutional identification.

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Section 1: Introduction

1.1 Background

The Institutional Identifier (I²) Working Group was established at the request of the information supplier community, which lacked a robust, global identifier strategy for the organizations with which they did business.

The Journal Supply Chain Efficiency Improvement Pilot (JSCEIP), conducted from 2006 through 2007, demonstrated the improved efficiencies of unambiguous identification of organizational entities in journal supply workflows. The project also found that implementation of an institutional identifier would require a commitment by all parties in the supply chain to use such an identifier—and that there were many more players involved than originally thought. Additional issues were raised related to the metadata that should be collected for the identifier and how the data would be maintained.

Since NISO has traditionally played a role in the promulgation of identifiers commonly used within the library and publishing communities, both nationally and internationally, members of the JSCEIP brought a proposal to NISO to develop an institutional identifier standard that could support a wide range of known and unknown digital information needs throughout the library and publishing environment. The proposal was approved by NISO's Business Information Committee and the Voting Members in January 2008 and a NISO Institutional Identifiers (I²) Working Group was formed with the following charges:

1. Develop scenarios to represent the most compelling use cases for institutional identifiers that will engage all relevant stakeholders and identify their institutional identifier needs.
2. Develop a globally unique identifier string that is usable in the web environment, together with sufficient metadata to uniquely identify and relate the institution to its identifier.
3. Identify a strategy for the implementation of the institutional identifier, including identifying the hosting and technical needs, the legacy uses of institutional identifiers in the digital information space, and the identification of complementary initiatives that could be informed by, or interoperable with, the NISO I² identifier standard.

1.2 Community Needs Assessment

The I² investigation process was characterized by multi-faceted and broad-based needs assessment strategies intended to engage the digital information community in describing:

1. Issues with current ("legacy") identifiers
2. Requirements for an institutional identifier
3. Barriers to the adoption of an institutional identifier
4. Emerging or complementary identifier standards that should be considered in place of developing a new identifier standard and implementation strategy

The I² Working Group established subgroups to investigate these issues within three particular scenario areas:

- Electronic Resource Supply Chain
- Institutional Repositories
- Library Resource Management

(A fourth proposed scenario area of e-learning was determined to be a sub-area within each of the broad scenario areas, and was thus eliminated as a separate sub-group.) Over 300 constituents were engaged through surveys and consultations to identify requirements.

Respondents to surveys for institutional repositories and library resource management showed remarkable unanimity.

- Large percentages agreed that an institutional identifier was important, and a majority were likely, or somewhat likely, to request and use a globally unique institutional identifier.
- Most respondents were currently using one or more identifiers. Library resource management survey participants were primarily using workflow-specific identifiers, such as MARC codes for cataloging within OCLC or participating in ILL transactions. Respondents to the institutional repository survey generally assigned an identifier to themselves or their organizational participants and this was most frequently a CNRI Handle[®].
- Respondents to both surveys were less likely to update a registry after initial participation, so the need for fairly durable metadata, as well as the need to qualify some metadata by period of validity, is important.
- Survey respondents identified complementary identifier initiatives that should be considered, particularly ISIL (International Standard Identifier for Libraries and Related Organizations, ISO 15511), a unique identifier specific to libraries, and ISNI (International Standard Name Identifier, ISO 27729), which identifies public entities, both personal and corporate, across the entire media creation chain, from creation to final distribution. (Both the ISIL and ISNI standards were studied. ISIL was too narrow in scope to consider for an I² recommendation, but ISNI was deemed to have potential for meeting the requirements of the institutional identifier and was added to the I² agenda for further investigation.)
- Respondents in both surveys also identified the need for a data element that classified the institution by business sector, so this element was added to the draft metadata specification. Most elements in the draft metadata specification were deemed very or somewhat important with the exception of language of name, which was made optional as an attribute.

1.3 Requirements for the I²

In the second phase of the NISO I² initiative, working group members participated in four activities: identifier requirements, use case scenario development, metadata schema development, and operational environment requirements, each of which is discussed further in this section.

The work of the I² Working Group was codified in a midterm review and distributed for comments in many venues, including the 2010 ALA Annual conference. The broad digital information community was invited to participate via survey and individual comments. The largest percentage of respondents was from the library community, although some members of the digital licensing community responded via personal comments. The draft metadata schema and the identifier structure and environment choices were ratified by a majority of respondents, including the decentralized registry

approach and the reuse of assigned identifiers in workflow specific registries, rather than a registry that tries to accommodate all current and potential digital information workflows.

1.3.1 Requirements for the Identifier Standard

The features listed in Table 1 were specified for the I² and validated through surveys and public comments. All were rated as “very important” or “somewhat important,” with only the identifier opacity having an equally high score for “don’t know/no opinion.”

Table 1: Required attributes of an institutional identifier

I ² Feature / Attribute	Description
Identify organizations	The I ² will unambiguously identify institutions and organizations that operate within and around the information supply chain. I ² will be used for identifying institutions and units of institutions.
Be opaque	The I ² should be an opaque string of characters. Organizations change in structure and are merged and split. Identifiers for a given organization unit need to be persistent; therefore, the identifier should not contain semantics about the institution (e.g., the domain name of the organization).
Support the creation of a core metadata set that describes an institution sufficient for unambiguous identification	With an opaque identifier, additional metadata (in a registry) is needed to describe the institution being identified to facilitate its unambiguous identification. The core metadata will disambiguate the institution from related institutions (e.g., parent and sibling, former institution); will identify the institution by variant names or identifiers, such as the MARC institution code; and will provide category, location, and contact information suitable for obtaining further information about the institution.
Support registration of institutions in a decentralized manner	The identifier and the structure/environment within which it operates must be able to support multiple business scenarios operating independently and not relying on the registration of an institution by another entity before the identifier can be used.
Address community-specific registry needs	The business scenarios/registries that utilize the I ² will be able to use the identifier to extend data about an institution. Community-specific applications may wish to leverage the identifier to extend the metadata to include things such as registered IP addresses, base URL for OpenURL resolver, and organization demographics such as FTE, tax exempt status, etc.
Allow URI(s) from third-party registries to be submitted and stored	Third-party registries (which have appropriate authorization) should have the ability to insert URIs in the central registry to facilitate discovery of extended information about an institution at that registry.

1.3.2 Use Case Scenario Development

The I² Working Group spent considerable time and effort in specifying representative use case scenarios for the I² identifier that demonstrate the value of the identifier and validate the decisions made in this recommended practice.

Using a fictitious NEARLI (Northeast Area Research Library Initiative) consortium, the following scenarios were illustrated:

- Scenario One: Library A wants to be a member of the NEARLI consortium.
- Scenario Two: Library A subscribes to an electronic journal.
- Scenario Three: Library A places ILL (interlibrary loan) requests with Library B.
- Scenario Four: Library A places an ILL request via the NEARLI consortium.
- Scenario Five: Library A places an ILL request for special circumstances.
- Scenario Six: A regional ETD (Electronic Theses and Dissertations) repository harvests metadata from a participant repository.
- Scenario Seven: A subscription content site supplies usage statistics to a library consortium.
- Scenario Eight: A subscription content site authenticates a user via a third party rights aggregator.

More details including illustrations for each of these scenarios are in Appendix A.

1.3.3 Requirements for the Core Metadata Set

Metadata requirements were developed iteratively with substantial community comment and validation. All metadata elements were selected to support the core user needs identified in the IFLA *Functional Requirements for Bibliographic Records (FRBR)* final report. The four core user needs for FRBR are FISO: *find, identify, select, obtain*. As defined for the use case of unambiguously identifying an organization, these user needs can be expressed as:

- **Find:** Successfully search the I² registry for an institutional record.
- **Identify:** Interpret the information supplied in the registry about an institution.
- **Select:** Identify the institution appropriate for a digital information workflow from among similar or related institutions.
- **Obtain:** Successfully reuse the I² identifier for a digital information workflow.

An I² metadata schema was designed to provide the minimum set of elements needed to uniquely and unambiguously identify an organization engaged in a digital information workflow. A draft metadata element set for the I², codified as an XML schema, was made available for comment (see Table 2). These were largely approved by community reviewers, although some changes were made in response to public comment.