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TOPIC: ORGANIZATION AND PEOPLE IDENTIFIERS

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INSTITUTIONAL IDENTIFIERS
(¹) AND ISNI



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I² and ISNI: Improving the Information Supply Chain with Standard Institutional Identifiers

The NISO Institutional Identifier (I²) Working Group was established to create a standard for an identifier that would support more efficient workflows for the information supply chain by enabling all parties—such as libraries, subscription agents, and publishers—to use the same identifier for the same institution.

For example, when a publisher receives orders for online journals for the same institution from multiple subsidiary departments, it is difficult (and expensive) to make sure all orders are assigned to the correct online account of the institution. Failing to do so can result in loss of access to content, frustration with information providers, and added expense for the providers to diagnose and correct the problem. The group built on the work of the Journal Supply Chain Efficiency Improvement Pilot, which demonstrated the improved efficiencies of using an institutional identifier in the journal supply chain.

Over the past 2 years NISO's I² working group has been seeking the best infrastructure to support a standard institutional identifier in a scalable, extensible manner. Several other standards and identifiers were studied to select those aspects which worked well and to identify unmet needs and service gaps. During this investigation, we determined that the International Standard Name Identifier (ISNI) could be leveraged to meet the infrastructure needs of I², while the

needs analysis and metadata development performed by the NISO I² working group could expand the ISNI's ability to serve institutions. This synchronicity laid the groundwork for a fruitful collaboration.

ISNI offers a solution

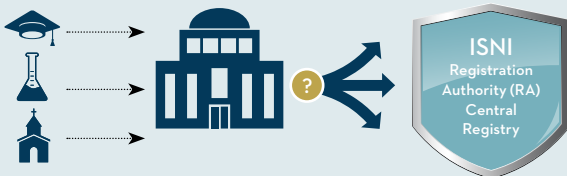
ISNI is an approved international standard (ISO 27729) that was developed to provide a standard identifier for people (such as authors, characters, and public figures) and the institutions with which they are affiliated (such as publishers and universities). ISNI has already received strong support from organizations in the publishing and information access arenas, and the not-for-profit ISNI International Agency (ISNI-IA) is developing the infrastructure to implement and manage the identifiers. The base of this infrastructure, the ISNI Registration Authority (RA) appointed by ISO, will be in charge of creating and maintaining the ISNI reference database, as well as the overall administration and governance of the ISNI standard. The RA's real-time systems will allow business partners—ISNI Registration Agencies (RAGs)—to obtain a new identifier or look up a registered entry. Registration Agencies are appointed by the ISNI International Agency; any business entity with a proven interest in the scope of ISNI will be eligible for consideration. The ISNI business model encourages the diffusion and use of ISNIs once they have been established; therefore, it is reasonable to expect these identifiers to be used by organizations that are not formal registration agencies. The basic requirement is being able to handle an identifier of 16 decimal digits (the last is a check digit).

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ISNI has the potential to be the solution for identification of institutions within the information supply chain. An example of how this would work is as follows:



A subscription agent becomes a registration agency (RAG).



For each new customer, the subscription agent's system sends an **automated request** to the ISNI Registration Authority (RA) central registry asking for an identifier for the new customer.



The central registry checks to see if the institution is already registered and returns the existing identifier if it exists. If no identifier exists, the ISNI RA adds the institution to the registry and returns the newly assigned identifier.

The subscription agency is assured of a globally unique identifier for each customer, while the customers no longer have to manage separate identifiers for each subscription agency or other vendors with which they do business. The identifier would support collaboration, such as when multiple customer organizations form a consortium for purchase but still require individual identification. The identifiers would also support collaborative packaging and joint marketing of content by subscription agencies, while retaining individual agency identities.

The business model allows many organizations to be registration agencies and is designed to allow the identifiers to be obtained at point-of-need, while at the same time ensuring that multiple identifiers are not assigned to the same registered institution. Although there is a nominal cost for an identifier to be assigned, there is no restriction on how the identifier can be used or shared.

The core technology behind the use of ISNI as the Institutional Identifier is the simple but powerful premise of “identify once, use many” that would transform the ability of participants in the information supply chain to work efficiently, achieve economies of scale, and to innovate in an emerging digital environment.

Laying the Groundwork

Leaders of the NISO I² Working Group met with the ISNI Working Group to explore common interests and investigate a potential collaboration. NISO I²'s interest is to ensure that ISNI becomes a viable standard that will be used for institutional identification and that the ISNI International Agency (ISNI-IA) infrastructure and business model extend to the identification of institutions within the information supply chain. The benefit to ISNI is the extensive exploration of institutional identification needs performed by the I² Working Group and the development of a strong metadata profile for institutional identification to supplement ISNI's already solid identification of individuals.

The ISNI-IA was definitely interested but needed NISO I² to identify an organization (or organizations) that would become an ISNI Registration Agency (RAG) specifically in the business of registering institutions in the information supply chain. The ISNI-IA would then work with the RAG or RAGs to develop and refine their service and processes. NISO I² would also need to map the I² institutional metadata, previously defined by the Working Group, to the ISNI request schema and help develop a single schema that ISNI could use to identify both people and organizations. NISO I² could also play an ongoing role in facilitating the adoption of ISNI as the I² by helping to find other organizations to work as RAGs and by assisting with education and promotion of the identifier and its use in the information supply chain.

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The I² Working Group developed an initial list of organizations that could be appropriate Registration Agencies for institutions in the information supply chain. ISNI Registration Agencies (RAGs) will have unlimited read-only access to the full ISNI database and they will be the only entities authorized to issue ISNIs.

Metadata Harmonization

An important need to facilitate collaboration was harmonization of the metadata developed by NISO I² for institutional identification with the metadata profile in the ISNI standard. Committee members analyzed the ISNI metadata in comparison with the I² metadata for equivalences, gaps, and conflicts. A comparison of the two metadata schemas revealed multiple synchronicities, which can be leveraged to map the schemas together. Janifer Gatenby as a member of both the ISNI and NISO I² working groups was able to serve as liaison to facilitate this effort and enable needed changes to be made quickly.

Two core areas of need identified by NISO I² were:

- 1 date ranges to specify time periods when institutional names were valid, and
- 2 documentation of relationships between institutions.

Date ranges are critical to support historical identification of organizations that changed their names but not their essential identities. For example, OCLC was once identified by the name Ohio College Library Center, then Online Computer Library Center, but is now simply known by the acronym OCLC. Despite the name changes, the actual organization did not change. In such a scenario, the organization would retain the same institutional identifier despite these changes, but the metadata would need to be updated. Such name changes needed to be distinguished from changes to the organizational identity, such as when two or more organizations merge into a new organization, which is documented in the “related institution” data element and would result in a new institutional identifier for the merged organization.

Documentation of relationships between institutions may be critical not only for identification purposes, but also to support business processes. Subsidiary organizations within an institution may need their own identifier for some workflows but not for others. For example, the Special Collections Department of a University Library may need its own identifier to facilitate interlibrary loans, since its policies, loan periods, and physical address may be very different from the parent library. However, for other activities, such as the purchase of materials, the parent library may be the identifier used. These relationships need to be unambiguously identified as related institutions, rather than as variant names for the same organization, to facilitate reliable and authoritative transactions. NISO I² spent considerable time developing relationship metadata and testing it in hypothetical scenarios of use to solve common problems.

Other NISO I² recommendations that ISNI is considering include the incorporation of the ISO 3166-1 standard for country codes as opposed to the use of MARC codes. One remaining issue under discussion is the ISNI metadata dependence on identification of a resource associated with the entity being identified. While resource titles are useful for disambiguating authors or publishers with similar names, institutions are not generally associated with authored resources. Therefore this requirement is generally not as meaningful or useful for institutional identification as other data elements. The I² group has formally requested modification of this requirement for institutions and believes a restructuring of the hierarchy of ISNI metadata could support this request. ISNI has already reorganized the hierarchy of some of their metadata elements to better support the identification of institutions and is considering this additional request.

Identifying ISNI Registration Agencies (RAG) for Institutions

The I² Working Group developed an initial list of organizations that could be appropriate Registration Agencies for institutions in the information supply chain. ISNI Registration Agencies (RAGs) will have unlimited read-only access to the full ISNI database and they will be the only entities authorized to issue ISNIs. I² co-chairs Grace Agnew and Oliver Pesch developed an overview of the proposed I²/ISNI relationship to assist in describing the benefits and importance of this project to the prospective institutional ISNI RAGs. The I² Working Group members then approached the organization contacts to educate them about the project, ask for support, and pave the way for future adoption.

Thus far, two organizations have expressed interest in being ISNI Registration Agencies for institutions, pending appointment by the ISNI-IA. This is an excellent start, but NISO I² hopes to see additional organizations involved as RAGs to represent multiple sectors of the information supply chain, such as library and archival management systems, collaborative repositories, cloud information services, and others.

Conclusion

The NISO I² Working Group has identified a clear need for a standardized institutional identifier, clarified the necessary parameters for identification, and investigated various methods of support for implementation. The ISNI ISO standard, initially intended for individuals and characters, could provide the necessary infrastructure for support and delivery of an institutional identifier. By merging the I² and ISNI metadata schemes, the ISNI implementation could expand to incorporate the needs of robust, standardized institutional identification. NISO I² has identified two organizations that are willing to become ISNI Registration Agencies actively engaged in the identification of institutions. It is hoped that other organizations supporting institutions involved in the information supply chain will apply to become ISNI Registration Agencies, and would then be able to issue identifiers and interact directly with the ISNI central registry in real time. Incorporating standardized institutional identifiers into business workflows would greatly improve efficiency and cost savings in the information supply chain. The collaboration between the NISO I² initiative and the ISNI Working Group could prove to be a timely and valuable solution to a long-standing problem for information suppliers.

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I² Working Group webpage
www.niso.org/workrooms/i2

Journal Supply Chain Efficiency Improvement Pilot
www.journalsupplychain.com/

ISNI International Agency
www.isni.org

ISO 3166 (country codes) Maintenance Agency
www.iso.org/iso/country_codes.htm



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