

Standards for Balancing Rights and Interests in Open Resource Licensing: NISO ALI Interpretation of Postprints

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Abstract

[Purpose/Significance] To systematically introduce the background, content, and application of the Access & License Indicators (ALI) recommended practice by the National Information Standards Organization (NISO) of the United States, as well as its role and impact in the open access information exchange model. [Method/Process] By translating the content of ALI, this paper interprets its role as a complete set of standardized metadata in providing visual indicators for open access resources, enabling users to promptly understand the open access status and reuse permissions of specific content, and balancing the rights and interests among publishers, authors, and downstream users. [Results/Conclusion] ALI provides significant reference for China in constructing unified and standardized metadata elements for open resources, while also alleviating authors' copyright concerns, balancing interests among all parties, mitigating legal risks, and promoting the standardized development of the open access movement in China.

Full Text

Balancing Interests in Open Resource Licensing: An Interpretation of NISO ALI

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Abstract

[Purpose/Significance] This study systematically introduces the background, content, application, and role of the Access License and Indicators

(ALI) recommended practice issued by the U.S. National Information Standards Organization (NISO) within the open access information exchange model. **[Method/Process]** By translating the ALI specification and interpreting its function as a complete set of standardized metadata, we examine how it provides visual identification for open access resources, enables users to promptly understand the openness status and reuse permissions of specific content, and balances interests among publishers, authors, and downstream users. **[Results/Conclusion]** ALI offers important reference value for China in constructing unified, standardized open resource metadata elements, alleviating authors' copyright concerns, balancing stakeholder interests, and mitigating legal risks, thereby promoting the standardized development of the open access movement in China.

Keywords: open access; access license; reuse rights; metadata

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Access License and Indicators (ALI) is a recommended practice of the National Information Standards Organization (NISO) that seeks to standardize the display of rights status at the article level through a standardized approach. This enables readers to easily understand whether a specific work can be used free of charge and what reuse rights are available, thereby clarifying rights among publishers, aggregators, content providers, funders, institutional administrators, libraries, and downstream users to avoid conflicts of interest and legal risks. ALI has been applied in digital journal publishing abroad, with dedicated sections in the recommended practice introducing its applications and scholars researching its implementation status and effectiveness in revealing hybrid OA journals. Few studies have focused specifically on ALI; Guo Jinjing briefly introduced it in a 2014 overview of international open access developments, and Chen Xuefei compiled portions of the NISO recommended practice on her ScienceNet blog. This study summarizes and introduces the basic content of the ALI recommended practice and its applications and feedback in foreign publishing and library communities, aiming to enrich domestic research and inform the construction of China's open resource interest-balancing mechanisms.

2. Background and Overview of the ALI Project

2.1 The Interest Imbalance Problem in Open Access Resources

As scholarly communication continues to evolve, publishers have introduced new publishing models such as open access, increased access, and public access to promote the free dissemination of research results online and enhance public utilization of scholarly outputs. While these models break price monopolies and usage barriers for academic resources, they have also created confusion regarding public access rights and user reuse permissions. The lack of information exchange and cooperation among publishers, authors, and downstream users makes it difficult for them to determine whether specific works comply with

licensing provisions, leaving the usage rights of open resources in an ambiguous state. Publishers lack a unified, visual mechanism to indicate whether a particular work is “free-to-read” and what reuse rights downstream users may have. Authors struggle to determine whether their published works comply with funders’ open access mandates. Downstream users cannot easily and clearly understand what they can and cannot do when using specific works. Funders cannot effectively track whether funded research outputs adhere to established open access policies. Libraries, unaware of whether specific works or publications are openly accessible or have delayed open access, cannot fully expose these resources for researchers. This situation restricts the dissemination and utilization of open resources, creating an urgent need among stakeholders for a standardized mechanism to achieve consistent description of open resource rights status.

2.2 From OAMI to ALI

In response to this need, NISO established the Open Access Metadata and Indicators Working Group (OAMI) in 2013, tasked with standardizing bibliographic metadata to describe the availability of journal articles and visually revealing authorized reuse permissions. Co-chaired by Cameron Neylon from the Public Library of Science (PLOS), Ed Pentz from CrossRef, and Greg Tananbaum representing the Scholarly Publishing and Academic Resources Coalition (SPARC), the working group sought to balance interests among diverse stakeholders including publishers (for-profit, non-profit, scientific, social science, and association publishers), publishing service providers (copyright and licensing agents), online license agreement definers, library automation system vendors, and librarians. Due to differing interpretations of “open access” among stakeholders and the recognition that downstream users’ reuse rights depend on legally binding license agreements rather than metadata, the working group abandoned the “Open Access Metadata and Indicators” name in favor of “Access License and Indicators.” The Discovery to Delivery (D2D) Topic Committee approved the Access License and Indicators recommended practice (NISO RP-22-2015) on January 5, 2015.

3. Main Content and Features of the ALI Recommended Practice

3.1 Main Content

The ALI recommended practice consists of eight sections: preface, introduction, overview of ALI, metadata elements, recommended metadata distribution mechanisms, use case reviews, appendices, and references. It thoroughly explains the current confusion regarding licensing permissions and reuse rights for open resources amid overlapping publishing models, with the original motivation being to develop metadata and indicators that inform users and computers about which works are “free-to-read” and what licensing terms ap-

ply. The core of this recommended practice comprises two metadata elements: “free_{{{to}}}{{read}}},” an XML element indicating that users can access content directly without payment or authentication, and “license{reference},” which describes usage or reuse permissions for a specific work. ALI recommends that “license_{reference}” be included in all metadata describing journal articles, book chapters, or conference papers. This element must contain a URI enabling internet access to the work and should include temporal indicators showing how usage permissions change over time, though it does not require an end date since open licenses like Creative Commons have no expiration. The combination of these two elements, along with temporal indicators, provides a mechanism for users and computers to understand a work’s open status and licensing permissions through visual indicators on publishers’ websites, effectively addressing embargo issues in hybrid open access journals. The recommended practice also includes methods for assigning and aggregating these machine-readable metadata elements and recommended mechanisms for publishing metadata, validated through nine types of use case reviews.

3.2 Key Features

Based on our translation, analysis, and synthesis of the ALI recommended practice, we have identified the following key features:

3.2.1 Expressing User Reuse Rights Through License References

The evolution from OAMI to ALI reflects not merely a name change but a crucial conceptual shift during the development process. The working group concluded that user reuse rights should not be expressed through metadata, as these rights vary among different users—for example, between authenticated institutional users and unidentified users. Attempting to express reuse rights through metadata would likely result in incompatible and contradictory outcomes. Moreover, users trust legally binding license agreements rather than metadata assertions, and publishers’ legal teams would not permit actions based solely on metadata unless authorized by the license agreement. Therefore, the working group unanimously agreed to adopt license references in metadata to express user reuse rights.

3.2.2 Balancing Interests of All Stakeholders

ALI recognizes that the proliferation of open access pathways has created confusion about usage rights, with varying terms within and among publishers, particularly complicating the status of hybrid OA journals. Publishers offer diverse reuse rights and licensing terms for “free-to-read” articles without a unified standard, making it difficult for funders to determine compliance and causing frustration for authors and downstream users. Despite differing interests, all stakeholders agree on the need to disseminate two key pieces of information: whether a specific work is openly accessible and what terms govern its reuse. ALI addresses this by providing metadata indicators that identify free-to-read content and link to applicable licensing terms, enabling readers to understand their reuse rights, authors to verify compliance with funder policies, publishers

to clearly communicate permissions, funders to enhance openness and monitor policy adherence, search engines to help users discover freely usable resources, and libraries to guide readers toward free resources.

3.2.3 Minimalist Approach to Rights Description

Embracing a principle of simplicity and considering the scope of information to be communicated, distribution mechanisms, and relevant policy, legal, and technical issues, the working group refined its approach to achieve its goals through a minimal metadata set containing just two core elements. The first, `<free_{{to}}_{{read}}>`, determines whether a specific work can be read online free of charge without restrictions, with optional start and end dates to accommodate embargo periods. The second, `<license_{{reference}}>`, contains a URI linking to licensing terms governing the work's use. ALI provides examples demonstrating how these elements describe rights status, recommending they be encoded in XML, assigned a namespace, and integrated into existing metadata distribution channels. This approach enables systems to display appropriate icons indicating open access rights status, while avoiding the creation of new logos since existing indicators like Creative Commons icons suffice.

3.2.4 Recommended Metadata Distribution Mechanisms for Wide Transmission

To ensure broad metadata transmission, ALI encourages publishers, database aggregators, and content providers to include the `free_{{to}}_{{read}}` and `license_{{reference}}` elements in all standard metadata sets, ideally integrating their creation into standardized editorial and production workflows. Metadata should become a key component of CrossRef and other DOI registration agencies, appearing in on-site content, article/chapter feeds, and third-party content summaries. ALI recommends embedding these elements in HTML META tags and PDF files, and including them in e-TOCs, RSS feeds, and information provided to abstracting and indexing services. Using namespaces helps clarify how these elements should be incorporated into existing schemas and formats, and organizations are encouraged to integrate them into formats such as Journal Article Tag Suite (JATS), ONIX, RDF, OAI-PMH, and Dublin Core.

4. Implementation Status and Recommendations for ALI

4.1 ALI Use Case Reviews

To illustrate applicable scenarios, the recommended practice includes nine use case reviews examining its applicability. These use cases yield two outcome categories: fully applicable and partially applicable. By providing `free_{{to}}_{{read}}` or `license_{{reference}}` identifiers in work metadata, publishers can fully enable end users to locate, identify, and access free content while understanding readability status and reuse permissions, including for sub-content. This approach also fully enables institutional repositories to effectively reveal free-to-read content, helping repository managers determine which works can be directly accessed and which can be disseminated to other

repositories. Partially applicable scenarios include text mining, ensuring rights claims align with license statements, and enabling funders to track research compliance with open access mandates.

4.2 ALI Adoption in Foreign Industries

In December 2014, the Journal Article Tag Suite (ANSI/NISO Z39.96-2015 JATS) adopted NISO ALI recommendations, adding two new elements—`<ali:free_{{to}}_{{read}}>` and `<ali:license_{ref}>`—to the tag suite and registering them in the JATS tag library and NISO standard. At the June 2016 American Library Association Annual Conference, Nettie Lagace and Elise Sassone represented the NISO ALI Working Group and publishers in discussing ALI implementation. Lagace introduced ALI's objectives and the two core metadata elements, emphasizing that effective implementation requires leveraging existing metadata distribution channels. She noted that ALI successfully addresses publisher-reader communication challenges, enabling readers to easily identify free content and understand usage terms. When asked about implementation challenges, Lagace responded that NISO cannot comprehensively track publisher adoption, and that new metadata standards typically face long adoption curves requiring broader support. Elise Sassone from Springer Nature reported that Springer Nature has implemented ALI along with other recommended practices. However, literature indicates that while Ex Libris uses ALI in Primo, many publishers either misuse these indicators or fail to use them altogether, suggesting that promoting ALI adoption remains an ongoing challenge requiring greater effort.

4.3 ALI Recommendations for Discovering OA Resources in Hybrid Journals

Nathan Hosburgh from Rollins College Library highlighted at the same conference how hybrid journals complicate OA resource discovery for libraries. Since most library e-journal management tools operate only at the journal level, numerous OA articles remain hidden within hybrid journals. Users searching these tools may fail to discover these resources, resorting to interlibrary loan or alternative sources, yet can easily find full text through Google Scholar. This occurs because library tools rely on link resolvers to identify open access, creating bottlenecks in hybrid journal resource discovery. Sandra Cowan suggested that libraries could address this by changing practices among content providers and discovery service vendors—precisely what ALI enables. The two core metadata elements allow content providers to signal OA articles to discovery services, enabling article-level access links rather than institutional link resolver dependence. While feasible, current inconsistent implementation among content and discovery providers affects effectiveness, making it necessary for libraries to advocate for broader ALI adoption.

5. Implications of ALI for China's Open Access Movement

Open access also impacts China. In his 2014 opening address to the Global Research Council, Premier Li Keqiang stated: "China pursues a mutually beneficial and win-win opening-up strategy, is advancing a new round of opening up, expanding international scientific and technological exchanges and cooperation, encouraging the global flow of knowledge, technology, and talent, and supporting the establishment of an open access mechanism for scientific knowledge funded by public finance to promote the common development of China's and the world's scientific undertakings." This demonstrates the Chinese government's affirmation and support for open access. However, compared with rapid international developments and achievements, China's progress has lagged, with researchers' concerns about copyright protection in open access resources representing a significant obstacle. Behind the organization, integration, and service of open resources lies a process of interest gaming among different stakeholders, involving not only commercial interests but also legal risks in rights usage. ALI aims to provide visual identification for open access resources through a standardized metadata mechanism, enabling users to understand the openness status and reuse permissions of specific content. This approach balances rights and obligations among stakeholders, providing technical support and guarantees for the long-term development of open access information exchange models. Widespread ALI implementation requires joint efforts from libraries, publishers, and service providers to achieve optimal results. Notably, because the new elements can encompass more diverse usage attributes, the specification better meets different stakeholder needs and, once widely adopted, will provide improved interoperability and convenience. China's OA movement is still developing, and while no major domestic content providers have reported ALI adoption, standardization represents an industry trend. This interpretation of the NISO ALI recommended practice aims to inform the standardization and legalization of China's open access resource information exchange models.

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Author Contributions

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Note: Figure translations are in progress. See original paper for figures.

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